C. Reiss Company, Port of Superior, Infrastructure Improvements Project

Environmental Assessment

Prepared for:

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
V1	7/11/2022	Added fishery and updated THPO	Stantec	Hiedi Waller	Senior Engineer
V2	9/2/2022	Added SHPO determination of no effect and updated THPO	Stantec	Hiedi Waller	Senior Engineer
V3	10/7/2022	Updated to include new berm configuration	Stantec	Hiedi Waller	Senior Engineer

List of Preparers

Hiedi Waller PE, Senior Engineer. Ms. Waller has prepared and managed all types of National Environmental Policy Act (NEPA) documents and has extensive federal project management, NEPA/Wisconsin Environmental Policy Act (WEPA) environmental documentation, state and federal permit compliance and demographic analysis experience. She is proficient in analyzing environmental data to determine potential impacts, mitigation, and feasibility.

Erin Gross PG, Senior Environmental Project Manager. Ms. Gross has prepared and managed many NEPA/WEPA documents as well as numerous geologic and environmental assessments, contaminant investigations, regulatory compliance evaluations, and property transaction assessments which have been utilized in Environmental Assessment documents. Ms. Gross is an asset when analyzing environmental conditions while considering potential impacts, mitigation, and feasibility of projects.

Evan Weber, Environmental Scientist. Mr. Weber has conducted numerous geologic and environmental assessments, contaminant investigations, regulatory compliance evaluations, wetland delineations, and property transaction assessments which have been utilized in environmental assessment documents. Mr. Weber is often analyzing environmental data to find solutions that benefit redevelopment and environmental protection objectives.

Emma Ross – Environmental, Health and Safety Compliance Specialist. Ms. Ross has been involved in multiple environmental assessments. She focuses on regulatory compliance evaluations which have been utilized in environmental assessment documents. Ms. Ross performs inspections and assists in the completion of regulatory plans and reports.

Acronyms and Abbreviations

AHI#	Architecture and History Inventory Number
APE	Area of Potential Effect
BFE	Based Flood Elevation
BMP	Best Management Practice
BNSF	Burlington Northern – Santa Fe
BRRTS	Bureau for Remediation and Redevelopment Tracking System
C. Reiss	C. Reiss Company, LLC
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
CO	Carbon Monoxide
CT 211	Census Tract 55031021100
DAC	Disadvantaged Communities
dB	Decibel
EA	Environmental Assessment
EO	Executive Order
EPA	United States Environmental Protection Agency
ES	Enforcement Standard
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
Ft amsl	Feet above mean sea level
FTA	U.S. Federal Transit Administration
GHG	Greenhouse Gas
GLRI	Great Lakes Restoration Initiative
HAPs	Hazardous Air Pollutants
LOS	Level of Service
MARAD	Maritime Administration
MBTA	Migratory Bird Treaty Act
MnDOT	Minnesota Department of Transportation
MSATs	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NO_2	Nitrogen Dioxide
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NSA	Noise Sensitive Area
PAH	Polycyclic Aromatic Hydrocarbons
PAL	Preventative Action Limit
PM	Particulate Matter
RCL	Residual Contaminant Level
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Office(r)
SLRAOC	St. Louis River Area of Concern
SO_2	Sulfur Dioxide
SWPPP	Storm Water Pollution Prevention Plan
THPO	Tribal Historic Preservation Office(r)

tpy	Tons per Year
US	United States
USCOE	United States Army Corp of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	US Fish and Wildlife Service
USGS	United States Geological Survey
VOCs	Volatile Organic Compounds
WAC	Wisconsin Administrative Code
WDNR	Wisconsin Department of Natural Resources
WEPA	Wisconsin Environmental Policy Act
WHPD	Wisconsin Historic Preservation Database
WisDOT	Wisconsin Department of Transportation
WPDES	Wisconsin Pollutant Discharge Elimination System
Yd^3	Cubic Yards

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1.0 Introduction

This Environmental Assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA) (42 United States [U.S.] Code 4321, et seq.) and the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (Title 40 Code of Federal Regulations [CFR] Parts 1500-1508), United States Department of Transportation (USDOT) Order 5610.1C (Procedures for Considering Environmental Impacts), and Maritime Administrative (MARAD) Order (MAO) 600-1 (Maritime Administration, 1985). The purpose of this EA is to evaluate the potential impacts of the proposed C. Reiss Company, LLC (C. Reiss) Port of Superior Infrastructure Improvement Project (herein referred to as Proposed Project or Proposed Action on the physical and human environment and determine if there would be adverse impacts requiring the preparation of an Environmental Impact Statement.

1.1. Project Description

The Proposed Project would redevelop and modernize the existing 53-acre C. Reiss dock in Superior, Wisconsin. The western border of the Proposed Project is the Hallett Dock No. 8, 3200 Winter Street and the eastern border is the Midwest Energy Resources Company's dock and facility located at 2400 Winter Street. The northern border of the Proposed Project is the South Channel of Saint Louis Bay of the St. Louis River and the southern border is Winter Street. The GPS coordinates are Latitude: 46.7393607459312 Longitude: 92.1239927197266. The Proposed Project location and surrounding properties is illustrated on Figures 1 through 4.

C. Reiss owns docks in both the Port of Duluth, Minnesota and Port of Superior, Wisconsin. They currently only operate out of the Duluth Port. However, due to increasing water levels that cause annual flooding at the Duluth Port, C. Reiss needs to relocate its operations from their dock in the Port of Duluth to their dock in the Port of Superior which has had industrial facilities within the Proposed Project Area for over 130-years. Since the C. Reiss facility in Superior has been unused for the last 30 years; the dock wall is stable but in poor condition and needs to be rehabilitated and repaired.

The Proposed Project would redevelop and modernize the existing C. Reiss dock with:

- 2,525 feet of dock wall repair consisting of driven steel sheet piles outboard of the existing cap, tremie concrete behind the upper section of sheet piles, resurfacing of the concrete cap and 3,500 square feet of fill behind the dock wall sections,
- Dredge of 50,000 cubic yards (yds^3) of contaminated sediment from the slip,
- Construction of a 5,000 square foot shop/office building,
- Installation of truck scale, rail scale, stacking conveyor and telescoping loading conveyor,
- Stormwater, utilities, and road improvements, and
- Repair and extension of track for a total of 7,060 lineal feet and the installation of five switches.

The dredge sediment dewatering area will be on the existing north end of the dock and will have a sand berm surrounding the dredge material to confine the disposal area and allow for effective dewatering of the material.

1.2. Project Purpose and Need

The purpose of the Proposed Action is to address C. Reiss' ongoing flooding issues at the Duluth Port. For the last four years their terminal area has flooded. They have experienced lake level increases of 12 to 15 inches per year, causing up to a week's delay in their shipping time. This is incongruent with the need for just-in-time delivery by many manufacturers. The just-in-time shipping practices have created a greater reliance on a transportation system that provides predictable travel times. Therefore, periodic C. Reiss terminal closures negatively impacts their customers.

The Duluth facility has one set of rails while the Superior location has five sets of rails. Relocation to the Superior dock would provide additional space for rail unloading and vessel loading and increase operational efficiency.

2.0 Alternatives Considered

This section describes the No Action Alternative and the Proposed Action Alternative and defines the differences between the two.

2.1. No Action Alternative

NEPA and CEQ implementing regulations require consideration and analysis of the No Action Alternative. Under the "No Action Alternative", C. Reiss would not redevelop their dock in Superior, Wisconsin, and would continue shipping operations at their facility in Duluth, Minnesota. They would continue to be impacted by annual flooding at their Duluth facility which would impact delivery schedules. C. Reiss would not redevelop their Superior Facility with planned improvements including 2,525 feet of dock wall repair, repair and extension of 7,060 feet of railroad track, and dredging of 50,000 yds^3 of contaminated sediment from the slip.

Under the "No Action Alternative, the existing conditions associated with the natural and social environments would remain unchanged. If no action is undertaken, the Project would not:

- Improve C. Reiss operations by eliminating the flooding-related schedule delays at the Duluth, Minnesota facility.
- Accommodate vessels with two feet of additional draft.
- Reduce ship emissions as the ship-miles would remain the same.
- Reduce wear to public infrastructure, reduce traffic congestion at railroad crossings, lower accident risk involving vehicles, and emit fewer emissions.
- Remove 50,000 yds^3 of contaminated sediment within the St. Louis River Area of Concern (SLRAOC).

The No Action alternative would not meet the purpose and need for the Proposed Action and will not be discussed within this EA.

2.2. Proposed Action

The Proposed Action would meet the following project purposes and needs:

- Improve C. Reiss operations by moving to the Superior, Wisconsin facility thus eliminating the flooding-related schedule delays impacting the Duluth, Minnesota facility.
- Accommodate vessels with two feet of additional draft thus reducing the number of vessels to accommodate existing shipped tonnage.
- Reduce ship emissions as ships will travel 2.5 fewer miles from the entrance of the port to the Superior, Wisconsin dock each trip.
- Reduce wear to public infrastructure, reduce traffic congestion at railroad crossings, lower accident risk involving vehicles, and emit fewer emissions as rail traffic will travel 2.5 fewer miles and will not have to cross the Grassy Point Railroad Bridge into Duluth, Minnesota.
- Remove 50,000 yds^3 of contaminated sediment within the SLRAOC.

The SLRAOC is one of the 31 U.S.-based Areas of Concern across the Great Lakes created under the 1987 Great Lakes Water Quality Agreement. As the largest tributary to Lake Superior, the St. Louis River is vital to the regional economy and encompasses the Port of Duluth-Superior, an essential port for Great Lakes shipping. The SLRAOC also includes Superfund sites, large boat slips and important fish spawning habitat. To delist the SLRAOC, 80 management actions must be completed. Forty-four of these management actions include sediment remediation and habitat restoration construction projects and half of those have been completed (EPA, 2022). By dredging contaminated sediment, polycyclic aromatic hydrocarbon (PAHs) and Resource Conservation and Recovery Act (RCRA) metals will be removed from the aquatic environment and will support U.S. Environmental Protection Agency (EPA) in their efforts to delist the SLRAOC.

3.0 Existing Conditions, Environmental Consequences & Mitigation

This section includes the description and evaluation of existing Proposed Project area conditions and provides a baseline for analyzing potential effects of the Proposed Action. The analysis considered direct, indirect, short-term or long term, cumulative, adverse or beneficial impacts. Best management practices and/or mitigation measures that would minimize or eliminate adverse impacts are identified. This section presents an analysis of the potential consequences that may result from the construction of the proposed project. No specific, direct, or indirect impacts would occur as a result of the No Action Alternative; therefore, no additional discussion relative to the identified resources will be included. This section will discuss impacts as described above as well as the implementation of mitigation measures to compensate for unavoidable impacts. Discussion of the potential environmental consequences relative to the Proposed Action is presented below.

3.1. Land Use

The City has zoned the Project Area as W1-Waterfront. Permitted uses include boats, ships and shipyards; docks, repair, service, sales or storage of boats; wharves, transit sheds and other facilities used in connection with water transportation or navigation purposes (City of Superior, WI, 2022). The redevelopment and use of the C Reiss dock/slip is a permitted use in the Proposed Project area. Adjacent properties include the Hallett Dock No. 8 and the Midwest Energy Resources Company's dock and facility. The Proposed Action would not change the existing land use. Therefore, the Proposed Action would not alter land use and there would be no effect.

3.2. Air Quality

This section presents the potential impacts of the Proposed Action on air quality. The assessment has been conducted based on the scope of the Proposed Action and publicly available information. Mitigation stormwater Best Management Practices (BMPs) such as watering of access roads and stockpiles to avoid dust generation and stockpile covers will be implemented as port of a Storm Water Pollution Prevention Plan (SWPPP) and construction site erosion control plan.

Criteria Air Pollutants

Under the federal Clean Air Act (CAA), six air pollutants have been identified by the EPA as being of concern both on a nationwide and statewide level: ozone; carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). Because the air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as "criteria air pollutants."

Areas are classified under the federal CAA as attainment, non-attainment, or maintenance (previously non-attainment and currently attainment) for each criteria pollutant based on whether the federal and state air quality standards have been achieved. With respect to the National Ambient Air Quality Standards (NAAQS), the Proposed Project, which includes portions of St. Louis County in Minnesota (Duluth, MN) and Douglas County in Wisconsin (Superior, WI), is designated either as attainment or unclassifiable.

Hazardous Air Pollutants

In addition to criteria air pollutants, EPA regulates hazardous air pollutants (HAPs) also known as toxic air pollutants or air toxics. The CAA identifies 187 HAPs that EPA is required to control to protect public health (EPA 2020b). HAPs collectively refer to pollutants that cause or may cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental and ecological effects.

HAPs may be emitted by stationary, area, or mobile sources. Common stationary sources of HAPs emissions include gasoline stations, dry cleaners, and diesel backup generators, which are subject to local air district permit requirements. The other, often more significant, sources of HAPs emissions are motor vehicles on freeways, high-volume roadways, or other areas with high numbers of diesel vehicles, such as distribution centers. EPA has assessed the expansive list of toxics and identified a group of HAPs as Mobile Source Air Toxics (MSATs). MSATs are compounds emitted from highway vehicles and nonroad equipment. Some toxic compounds are present in fuel and are emitted into the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Federal and state efforts to reduce MSATs emissions have focused on the use of improved fuels, adding particulate filters to engines, and requiring the production of new-technology engines that emit fewer exhaust particulates.

Construction Emissions Analysis

Construction-related activities are temporary, short-term sources of emissions. Sources of construction-related criteria air pollutant and greenhouse gas (GHG) emissions include construction equipment exhaust; construction-related trips by workers, delivery and hauling truck trips; and fugitive dust from site preparation activities such as grading. Combustion-related emissions will include NO_2, CO, volatile organic compounds (VOCs), SO_2, PM, and small amounts of HAPs. The EPA requires manufacturers of on- and off-road engines to certify their products to engine emission standards based on the year of manufacture. On-road equipment, like automobiles and pick-up trucks, have had a series of standards imposed since the 1970s.

Large construction equipment, such as a grader or a front-end loader, are generally powered by diesel engines. For diesel engines, the emission standards have been phased in over the past two decades in four steps, referred to as Tier 1 to Tier 4. The engine must comply with the emission standards in place based on the size of the engine for the year the engine was built and must comply with the appropriate standard throughout its useful life. The engine manufacturers must certify the engine emissions to the EPA. In 2010, the EPA required the sulfur concentration in diesel fuels be lowered from a historical concentration of 500 ppm to 15 ppm (ultra-low sulfur diesel fuel), which allows diesel engines to meet current Tier 4 emission requirements. Proper maintenance of construction equipment and use of ultra-low-sulfur diesel fuel will minimize engine emissions during Project construction. To mitigate emissions from internal combustion engines, idling of construction vehicles will be minimized.

The fugitive dust from the construction activities and engine emissions from the construction equipment for the Project are summarized in Table 1. In this analysis, it was assumed that the construction equipment engines, on average, would comply with Tier 2 standards. Detailed calculations, including assumed quantities of equipment type for the Project, are provided in Appendix A.

Table 1 Construction Emissions

Activity	**Pollutant tons per year (tpy)**							
	CO	NOx	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**VOC**	**THAP**	**CO_2e**
Engine Emissions	10.4	53.6	1.7	1.7	0.02	3.3	0.6	2,515
Unpaved Roads	-	-	10.2	1.0	-	-	-	-
Earthmoving	-	-	0.2	0.02	-	-	-	-
TOTALS	**10.4**	**53.6**	**12.1**	**2.7**	**0.02**	**3.3**	**0.6**	**2,515**

Operational Emissions Analysis

As noted in Section 1.2, the Proposed Project will result in the relocation of the existing dock and operations; therefore, the emissions profile for operational sources will not change (i.e., emissions from ship, rail, and dock operations). Upon project completion, however, total annual emissions will decrease. The new ship channel will be two feet deeper than the existing channel which will allow larger capacity ships to use the dock which will result in two (2) fewer ships per year to process the same amount of material. Moreover, for the 27 remaining ships that use the port each year, the distance from the bay entrance to the port would be 2.5 miles shorter resulting in fewer ship miles traveled annually. Rail operations would also realize an annual emissions benefit from the Proposed Project. The rail route to the proposed facility is approximately 3.0 miles shorter than to the existing facility for the 185 engines that would serve the site annually resulting in fewer rail miles traveled annually.

Approximate annualized emissions reductions from the Proposed Project are outlined in Table 2 below. Emissions are estimated by calculating the annual reduction in ship- and rail-miles traveled and applying applicable emission factors for fuel combustion. Detailed calculations, including assumed quantities of equipment type for the Project, are provided in Appendix A.

Table 2 Annualized Operational Emissions Reductions

Activity	**Pollutant (tpy)**							
	CO	NOx	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**VOC**	**THAP**	**CO_2e**
Ships	7.9	45.8	1.4	1.4	22.6	1.7	-	1,691
Rail	2.9	11.1	0.4	0.4	0.2	0.6	-	1,259
TOTALS	**10.8**	**56.9**	**1.8**	**1.8**	**22.8**	**2.3**		**2,950**

3.3. Climate Change

GHG emissions are emissions that trap heat in the atmosphere. The CEQ released final guidance that requires agencies to consider the potential effects of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental effects of a proposed action (Final Guidance for Federal Departments and Agencies on Consideration of Green Gas Emissions, 2016). EO 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis* directs federal agencies to improve public health and the environment; ensure access to clean air and water; limit exposure to dangerous chemicals and pesticides; and reduce GHG emissions (Federal Register, 2021). Based on the values in Table 1, the Project's combined GHG emissions during construction based on the CO, NO_x, and CO_2e tonnages is 2,579 tons. Based on the CO, NO_x, and CO_2e values in Table 2, the annual GHG operational emissions reductions is 3,017.7 tons/year.

The primary reason that C. Reiss is planning to relocate to their Superior, Wisconsin, facility is the increase in flooding events on the Saint Louis River which affects their Duluth, Minnesota facility. Climate change has raised the question of whether shoreline flooding on Lake Superior will become more prevalent in the future. Many past studies indicate that as the effects of climate change worsen over time and temperatures in the region increase, Lake Superior will experience an overall decrease in water levels due to increased evaporation but will still experience periodic higher than average levels (Huff, 2014). More recent studies propose that precipitation increases have a significant chance of outpacing evaporation increases, leading to an increase in water levels (Rouhana, 2016). The proposed Superior, Wisconsin facility infrastructure will be more climate resilient than the existing Duluth, Minnesota facility. Relocating to the proposed facility will allow for operations during the present-day flooding events and will withstand the potential increase in future flooding frequency due to climate change.

3.4. Geology

The Proposed Project lies within the Lake Superior lowland, an expanse of post glacial, lacustrine sands and red clays. The lowland slopes gently north towards Lake Superior at an average elevation of 640 feet above mean sea level (ft amsl) or approximately 40 ft above Lake Superior (602 ft amsl) (Mengel, 1973). The plain is generally flat with only minor undulations. More specifically, the Proposed Project lies at approximately 610 to 620 ft amsl and is adjacent the natural harbor formed near the terminus of the St. Louis River with Lake Superior known as St. Louis Bay. The harbor consists of an inner lagoon (St. Louis Bay) and outer lagoon (Superior-Allouez Bays) prior to merging with Lake Superior. The harbor is protected from open water via multiple spits which prevent shoreline degradation from wave erosion (Mengel, 1973). The natural harbor forms the industrial backbone of Superior, Wisconsin and Duluth, Minnesota by providing the deep-water passages and docks which support the historic Great Lakes shipping industry.

Regionally, the Proposed Project is situated at the western-most portion of the Lake Superior basin, the geomorphic remnant of a failed 1.1-billion-year-old continental rift zone. Bedrock beneath the Proposed Project is composed of basaltic lava flows of the North Shore Lava Group and intrusive igneous rocks of the Duluth Complex (Mengel, 1973). Following cessation of the continental rift event, the basin settled isostatically into a large syncline that progressively filled with sediments which lithified into sandstones and shales of the Proterozoic Fond Du Lac formation. Rocks of Paleozoic and Mesozoic age are not known to be present within the Proposed Project area (Mengel, 1973). Glacial tills and post-glacial lacustrine sediments of quaternary age which include the red clays and silty sands of the Lake Superior lowland further infilled the lake basin approximately 10,000-years before the present (Antea Group, 2017). The red clay and silty sands are the predominant native unconsolidated sediments underlying the Proposed Project area.

According to the US Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), surficial soil in the Proposed Project area consists of Udorthents and Udipsamments, cut or fill (2030) representing the northern portion of the Proposed Project which has been altered for historic industrial operations; and Amnicon-Cuttre complex 0-4% (262B) on the southern portion of the Proposed Project typically related to clays and silt loams (NRCS, 2022). The Amnicon-Cuttre complex hosts most wetlands within the Proposed Project. Previous environmental investigation has confirmed soils have been historically altered in the Proposed Project area as evidenced by extensive fill which is present up to at least 4ft below grade (Antea Group, 2019). The fill often contains coal and wood debris among primarily silty sand and silt. Where fill materials are present the material overlies native lacustrine red clay. Despite the presence of extensive fill materials, the Proposed Project area is not likely subject to potential failure from seismic events. The Lake Superior basin lies on the southern portion of the Canadian Shield, a tectonically stable core of bedrock which experiences minimal seismic activity. According to the US Geological Survey (USGS) the Proposed Project area and greater Lake Superior basin are situated in a portion of the US which is identified in the lowest earthquake hazard category (USGS, 2018). Redevelopment of the Proposed Project area would comply with applicable engineering standards including the local port criteria and no effects from seismically induced liquefaction or settlement of unconsolidated soil materials are expected to occur. Therefore, seismic failure mitigation will not be required to redevelop the dock.

3.6 Wild and Scenic Rivers

Wisconsin has approximately 56,884 miles of river, of which 276 miles, or 0.5% of the state's river miles, are designated as wild and scenic (National Wild and Scenic River System, 2022). The closest wild and scenic river is the St. Croix River, located south of Superior, Wisconsin and approximately 32 miles from the Proposed Action. There would be no effects to wild and scenic rivers as a result of the Proposed Action as none exist in the vicinity of the Proposed Project.

3.7 Coastal Zone Management Act

The Wisconsin Coastal Management Program is federally-approved and funded through the National Coastal Zone Management Program and is dedicated to preserving and improving access to the natural and historic resources of Wisconsin's Great Lakes coasts. Since 1978, the program has worked cooperatively with state, local, and Tribal government agencies and non-profit organizations to manage the ecological, economic, and aesthetic assets of the Great Lakes coastal areas (Wisconsin Coastal Management Program, 2022). Douglas County, Wisconsin is within the Wisconsin Coastal Zone. As the Proposed Action will have a beneficial impact by dredging 50,000 yd^3 of contaminated sediment out of the St. Louis Bay/Lake Superior and redeveloping the existing C. Reiss dock making it more efficient and thus more economical, the Proposed Action furthers the Wisconsin Coastal Management Program's objectives.

3.8 Wetlands and Waterways

The US Army Core of Engineers (USCOE) regulates the discharge of dredged or fill material into the waters of the U.S., including wetlands, pursuant to Section 404 of the CWA and the provisions of the Rivers and Harbors Act of 1899. Waters of the US are defined by the Clean Water Act passed into legislation in 1972. Waters of the US are often under federal jurisdiction of the USCOE and include but are not limited to territorial seas, ponds, impoundments of water, interstate lakes, rivers, intermittent streams, wetlands, and tributaries of each. In certain circumstances, wetlands such as the those in the Proposed Project may not fall under USCOE jurisdiction but under state or local regulation.

During 2019, a wetland delineation of the Proposed Project area identified seven wetlands (W1 through W7) on the Property totaling 21.24-acres of the 53-acre site. Identified wetlands primarily consist of wet meadows, sedge meadows, shrub-carr, and hardwood swamps. None of the wetlands appeared to have a surface hydraulic connection with the adjoining St. Louis River (Stantec, 2019). Following the wetland delineation, an artificial wetland exemption request was presented to the Wisconsin Department of Natural Resources (WDNR) to exempt wetlands W4 and W5 (17.5-acres) atop the former shipping dock from state regulation. As a result of the request, the WDNR determined that delineated wetlands W4 and W5 were not considered wetlands and therefore not subject to State of Wisconsin regulation (WDNR, Artificial Wetland Detrimination for an area described as Wetland W4 and W5, 2019). Copies of the wetland delineation report and WDNR artificial wetland exemption determination are provided in Appendices B and C. Other waters of the US in proximity to the Proposed Project area include the adjacent St. Louis Bay which forms the slip portion of the Proposed Project area and are a part of the St. Louis River.

The Project is permitted by the USCOE and WDNR to fill approximately 0.05-acre of wetlands to facilitate reconstruction of an existing service road and former railroad track. Compensation for the permanent destruction of the wetland acreage will be offset by debiting 0.06 acre of wetland credits from Superior's wetland mitigation bank (USCOE, 2020). Copies of the permit approvals are included in Appendix D. The Proposed Project is not anticipated to impact adjacent or downstream property or infrastructure from flooding. Wetlands within the Proposed Project area are also not considered to be providing significant water quality protection to St. Louis Bay or Lake Superior. Downstream wetlands and waterways off site will be protected during construction using silt fences and will be safeguarded from post construction water quality impacts through the installation of stormwater BMPs including revegetation. A new stormwater pond will be sized and constructed as required by City of Superior ordinances and WDNR requirements.

3.9 Floodplains

Floodplains are generally defined as the typically flat land adjacent to a river or stream which experiences periodic flooding. The 100-year floodplain is defined as an area which is predicted to have a 1% probability of flooding in any given year. The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) which provides flood insurance for those properties which are located within mapped 100-year floodplains.

The FEMA flood map for the Proposed Project area is Panel number 55031C0076D, effective February 2, 2012 (WDNR, 2022). This panel shows that the northeastern portion of the Proposed Action is located in the 100-year flood Base Flood Elevation (BFE) area (see Figure 5). The Proposed Action area is located within Zone AE, defined as "Base Flood Elevations Determined".

The Proposed Project would reactivate the existing C. Reiss Dock on Saint Louis Bay. Rehabilitation will consist of reconstruction of a dockwall, dredging of 50,000 yd^3 of contaminated sediment along the exterior of the dock, construction of a shop/office building, repair and extension of 7,060 linear feet of rail track and five switches and the installation of various loading and weighing equipment.

The floodplain adjoins the proposed dockwall reconstruction on the western portion of the Proposed Project area and the dredging is within the floodplain. The proposed repair and extension of the rail track/switches are south and west of the floodplain. The dockwall and dredging will be designed and orchestrated to accommodate the flows and velocities associated with an expected 100-year flooding event and are sufficiently sized to avoid any increase to the base floodplain elevation. Although construction of the Proposed Project would place structures within the 100-year flood hazard area, it would not result in an increase in the BFE and would not adversely affect the direction or velocity of flood waters. The Proposed Project would not impede or redirect flows in a manner that would result in substantial erosion or flooding on- or off- site. A construction site erosion control plan including required BMPs will be prepared to mitigate potential erosion effects during construction. Direct or indirect impacts to the existing harbor channels, the Saint Louis Bay, and Lake Superior are not anticipated.

3.10 Water Quality

Surface Water

Dredging activities will cause a temporary impact to water quality but it will be mitigated by use of BMPs and no permanent impacts to water quality are anticipated as a result of dredging. Direct surface water quality impacts to existing surface waters could result from the construction activities of the Proposed Project. Sediment resulting from potential erosion during excavation, grading, compaction, trenching, and other construction activities would be the greatest concern during construction. Surface water quality impacts could impact existing harbor channels, the Saint Louis Bay, and Lake Superior. Indirect impacts to surface water quality from the Proposed Project could include potential sources of petroleum or hazardous related pollutants from construction vehicles. A construction site erosion control plan will be prepared to mitigate potential erosion effects to the surrounding surface water during construction.

The Proposed Project would be subject to the Wisconsin Pollutant Discharge Elimination System (WPDES) General Permit for Storm Water Associated with Land Disturbing Construction Activity (Permit Number WI-S067831-6; Construction General Permit [CGP]) (WDNR, WPDES General Permit for Storm Water Fact Sheet, 2021). This general permit regulates the discharges of pollutants to waters of the state as provided in Section 283.33, Wisconsin Statutes, and Subchapter III of Chapter NR 216, Wisconsin Administrative Code (Statutes, 2022). As such, the Proposed Project would be required to implement stormwater BMPs to control onsite runoff. Complying with the requirements identified in the CGP would prevent, or reduce the amount of, pollutants from being washed or discharged into Waters of the United States. The Project would comply with the requirements of the CGP during construction and the Project Site would be stabilized once construction is completed.

The CGP requires the development and implementation of a SWPPP. The SWPPP would detail treatment measures and site-specific BMPs that would be implemented to mitigate discharges of pollutants in stormwater runoff to the maximum extent practicable. The SWPPP prepared for the Proposed Project would be based on final engineering design and identify locations for storage of hazardous materials during construction as well as BMPs, notifications, and clean up requirements for incidental spills or other potential releases of hazardous materials. In addition, the SWPPP would have inspection, monitoring, and reporting requirements that would be implemented and maintained during construction.

With implementation of appropriate BMPs discussed above, and the implementation of the WPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, there would be no effect to surface water quality with implementation of the Proposed Project.

Groundwater

No direct or indirect impacts would occur to groundwater resources. The EPA's Sole Source Aquifers Interactive Map website did not identify any sole source aquifers within the Proposed Project area (EPA, 2019). Additionally, groundwater beneath portions of the Proposed Project has contaminant concentrations above respective Chapter NR140 Wisconsin Administrative Code (WAC) preventative action limit (PAL) and enforcement standard (ES), therefore, it would not be used as a source of drinking water (WDNR, 2022). Dredged sediments will be placed into filters bags to dewater. Water from the filter bags will flow into clay-lined swales to a clay-lined stormwater pond for storage and evaporation. The original design was to use the dried sediments to construct four on-site berms. Per WDNR request, this design was modified to reduce the four berms to one larger berm. Water remaining in the dried sediments will also flow into the clay-lined swales and stormwater pond. There would be no effect to groundwater from implementation of the Proposed Project.

3.11 Vegetation Communities

Vegetation communities are plants that grow together and require similar habitat to thrive. Federally-listed plant species include those listed as Endangered, Threatened, Rare or those species proposed for listing by the US Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (FESA) Sensitive natural communities are those that receive regulatory protection under Section 404 of the Clean Water Act (CWA) (i.e. Waters of the US) or are designated by USFWS as Critical Habitat for federally listed species. Per the USFWS, there is only one plant on the threatened list, the Fassett's Locoweed (*Oxytropis campestris var. chartacea*), that could be found in sandy, fluctuating lakeshores in Douglas County, Wisconsin (Appendix E). The Project Area is combination of concrete, bare ground and weeds. There would be no effect to Fassett's Locoweed with implementation of the Proposed Action.

In 2020, Stantec completed a survey for the Seaside Crowfoot (*Ranunculus cymbalaria*), a State of Wisconsin threatened plant species, within the Proposed Project area. The Seaside Crowfoot was not found in any of the wetland areas that may be affected by the Proposed Action (Appendix F). There would be no effect to Seaside Crowfoot with implementation of the Proposed Project.

3.12 Wildlife

Endangered, Threatened, Rare Species

Federally listed wildlife species include those listed as Endangered, Threatened, Rare or those species proposed for listing by USFWS under FESA. According to the list, three species of mammals may be present on or near the Project Area; the Canada Lynx (*Lynx canadensis*), the Gray Wolf (*Canis lupus*), and the Northern Long-eared Bat (*NLEB, Myotis septentrionalis*) (Appendix E). Based on the current Project site conditions, Stantec has determined that the appropriate habitats for these species do not exist within the Proposed Project area, therefore there will be no effect to these Federally listed species, their habitats, and/or designated critical habitats.

Fish

Under Section 7(a)(2) federal agencies must consult with NOAA Fisheries when any project or action they take might affect a T&E-listed marine species or designated critical habitat. Per the NOAA mapper, https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper, the Proposed Project area does not contain critical fish habitat. WDNR has waived the June 1 fish window for dredging and will allow dredging to begin May 1 (Appendix E). The conditions for the waiver are predicated on work to progress from the south end of the slip to the north and that BMPs are installed and maintained to contain and control suspended sediment and oil sheen. This sequence will minimize oil sheen and sediment emigration to the mainstem river and therefore minimize any impacts to fishes such as the recreationally and ecologically important walleye, muskellunge, lake sturgeon, and various sucker species during their spring season migration. With the implementation of these regulatory control measures, no adverse effects are expected to fish species.

3.13 Threatened and Endangered Species and Migratory Birds

Federally listed birds include those listed as Endangered, Threatened, Rare or those species proposed for listing by USFWS under FESA. According to the list, two species of birds may be present on or near the Project Area; the Piping Plover (*Charadrius melodus*) and the Rufa red knot (*Calidris canutus rufa*) (Appendix E). Additional species receive federal protection under the Bald Eagle Protection Act (e.g., bald eagle, golden eagle) and the Migratory Bird Treaty Act (MBTA). All birds, except European starlings, English house sparrows, rock doves (pigeons), and non-migratory game birds such as quail, pheasant, and grouse are protected under the MBTA.

No permit would be required under the MBTA; however, the Proposed Action would employ regulatory control measures such as conducting preconstruction surveys for nesting birds and providing a biological monitor should an active nest be present during construction activities occurring within the bird breeding season (generally February 15 through August 31) to ensure that migratory birds protected under the MBTA are not impacted. With the implementation of these regulatory control measures, no adverse effects are expected to migratory birds.

3.14 Cultural and Tribal Resources

The Proposed Project's Area of Potential Effects (APE) for direct effects for archaeological and Tribal resources and historic structures is defined as those areas where subsurface impacts can be anticipated during construction and includes the Project Area. Industrial activities (railroad, coal yard, coal briquet plant, petroleum products transfer facility, and dry bulk goods transfer facility) began within the Proposed Project area in 1891. Approximately the northern half of the Proposed Project was constructed into the lake in the early-1900s using imported fill material. Industrial development within the Proposed Project caused significant disturbance to the southern portion of the Proposed Project and up to 65% of the APE is concrete.

No archaeological surveys have been conducted within the Proposed Project area. Three previous archaeological surveys have been conducted within the 0.5-mile buffer area for projects consisting of a proposed bridge, a WisDOT field report, and an extension of a railroad line. No archaeological sites were identified as a result of these three surveys. No archaeological sites have been recorded within the Proposed Project's APE. One archaeological site has been recorded within the 0.5-mile buffer. Site DG-0111, is a shipwreck of a small vessel that exploded in 1938. The site is located approximately 1,000 feet east of the Proposed Project area at the Standard Oil dock, Superior Harbor. The archaeological site would not be impacted due to its distance from the Proposed Project. Based on the results of cultural resources literature review, there is low potential that archaeological resources will be encountered during ground disturbing activities for the Proposed Action. Therefore, the Proposed Action will have no effect on archaeological resources.

In the event of an inadvertent discovery of archaeological resources subject to Section 106 of the NHPA as amended (36 CFR 800), the Native American Graves Protection and Repatriation Act (25 USC 3001 et seq.), and the Archaeological Resources Protection Act of 1979 (16 USC 470aa-mm), procedures for post-review discoveries without prior planning pursuant to 36 CFR 800.13 will be followed. Should any indication of the presence of cultural resources (artifacts or other man-made features) or animal bone become evident during construction, the following mitigation procedures shall be followed:

- Stop all ground disturbing activities and vehicular traffic within 25 feet of the area of the discovery.
- Protect and secure the resource in place by delineating the find with flagging or orange safety fencing around the perimeter of the 25-foot area.
- Contact the City as soon as possible.
- Treat cultural resources with dignity and respect.
- Within 24 hours, if possible, a professional archaeologist will examine the location of the discovery to determine if material is a cultural resource,
- Notify MARAD, the Wisconsin State Historic Preservation Officer (SHPO) and any Tribal Historic Preservation Officers (THPOs) who requested ongoing consultation.

Should the presence of possible human remains become evident during construction, the following mitigation procedures shall be followed:

- Human remains shall not be removed from the site without completing all coordination processes with the Superior, Wisconsin Police Department, the Douglas County Medical Examiner & Coroner, the SHPO, THPOs, as appropriate, and MARAD.
- Stop work all ground disturbing activities and vehicular traffic within 100 feet of the area of the discovery. If the skeletal remains are human and not associated with an archaeological context, the City, MARAD, and the SHPO shall be contacted. The City shall be responsible for contacting the Superior, Wisconsin Police Department at non-emergency phone number (715) 395-7234. It shall be the responsibility of the Superior, Wisconsin Police Department or the SHPO to contact the Douglas County Medical Examiner & Coroner at 715-395-7231.
- Protect and secure the evidence in place by delineating the find with flagging or orange safety fencing around the perimeter of the 100-foot area; construction activity and vehicles will be prohibited within this area.
- Notify the City, MARAD and the Wisconsin Burial Sites Preservation Office:

  Amy Rosebrough, Assistant State Archaeologist
  816 State St.
  Madison, WI 53706-1482
  608-264-6494
  amy.rosebrough@wisconsinhistory.org

- Within 24 hours, if possible, a professional archaeologist will examine the location of the discovery to determine if the remains are human and have an archaeological association and, if so, if that association is American Indian.
- Human remains found in a prehistoric archaeological context will be assumed to be American Indian. If American Indian remains are identified, whether or not in an archaeological context, the City shall immediately notify MARAD, the SHPO, the Wisconsin Burial Sites Preservation Office, and the THPOs.

Based upon a review of the Wisconsin Historic Preservation Database (WHPD), historical maps and aerial images, the Proposed Project APE appears to have a low potential to contain cultural properties eligible for listing in the NRHP. Continued operation and upgrades of the industrial facilities within the Proposed Project area over 130-years has resulted in significant impacts to potential historical resources. MARAD determined that the Proposed Project will have no effect to cultural resources and consulted with SHPO Daina Penkiunas via a letter dated June 6, 2022.

On June 13, 2022, Leslie Eisenberg, SHPO Compliance Archaeologist, requested additional project information concerning an archaeological survey report, the oldest structure retained and project plans and elevations. On June 22, 2022, a Stantec archaeologist, Kathleen Bindley, conducted a visual inspection of the property and documented a gravel access lane, berms, wetland vegetation, concrete ruins and rubble, two concrete walls, and the remnants of a transportation track. A comparison of archival records to the results of the Project Area's visual inspection demonstrated that the property has been significantly altered over time. The visual inspection results, generalized geological cross sections and soil investigation borehole logs were submitted to Wisconsin SHPO on August 5, 2022 (Appendix G). Leslie Eisenberg, SHPO Compliance Archaeologist, concurred with MARAD's finding that the Proposed Project will have no effect to historic properties in an email dated September 2, 2022 (Appendix H).

The Atlas of Great Lakes Indian History (Tanner, 1987) was reviewed for maps and land use of the Proposed Project area prior to the historic period. Prehistoric groups hunted deer and moose along the shoreline of Lake Superior. In the Woodland Period between 1400 and 1700 AD the area was associated with the Algonquian people; between 1641 and 1701 AD, during the Iroquois Wars, the area was occupied by the Cree; and by 1768 the Ojibwa occupied the area. The Proposed Project area does not retain any Tribal lands today. No Tribal cultural resources were identified during the cultural resource database review. Based upon a review of the WHPD and historical maps and aerial images, the Proposed Project APE appears to have a low potential to contain Tribal cultural properties after 130-years of industrialization.

MARAD initiated consultation with sixteen American Indian Tribes regarding the proposed undertaking via a letter dated June 6, 2022 which included the Cultural Resources Literature Review. Copies of the Tribal consultation letters are included in Appendix Ia. Return mail receipts are included in Appendix ib.

3.15 Hazardous Materials and Waste Management

Former dock operations included petroleum product and open-air coal storage and transloading, and coal briquet manufacturing from the late 19th Century through the late 20th Century. Soil contamination resulting from past petroleum release(s) and the presence of industrial fill in surficial soils is documented at an existing, open WDNR Bureau for Remediation and Redevelopment Tracking System (BRRTS) case on the Proposed Project area (BRRTS# 03-16-000320 MURPHY MARINE TERMINAL), with multiple BRRTS cases present at the east-adjoining property that have documented migration of petroleum contamination impacting soil and/or groundwater at the Proposed Property (WDNR, 2022). These include:

- BRRTS# 02-16-297977 AMOCO OIL BARGE DOCK - FMR BARGE DOCK (closed),
- BRRTS# 02-16-297979 AMOCO BARGE DOCK - OW SEPARATOR & LOAD RACK (open), and
- BRRTS# 02-16-117873 AMOCO BARGE DOCK - MANIFOLD & AST AREA (open).

On December 9, 2021, Stantec performed a limited soil investigation at the Property to evaluate soil quality in the area of a planned onsite stormwater retention pond (Stantec, 2021). The results of the soil sampling were shared with the WDNR during a teleconference on January 20, 2022 and indicated that fill materials present in shallow soils (zero to three feet below grade) contained RCRA metal and PAH constituents at concentrations above Chapter NR 720 WAC residual contaminant levels (RCLs). WDNR requested that Stantec prepare a formal Notification for Hazardous Substance Discharge (Form 4400-225), which was subsequently submitted to WDNR by Stantec on February 16, 2022, and documented in the Stantec report entitled *Summary of Limited Soil Investigation*. The BRRTS number for this case is 02-16-589248.

Based on a review of historical case files associated with the property and soil sampling results from recently completed soil sampling activities, identified contamination appears to be associated with the presence of historical fill observed in surficial soils across much of the property, petroleum contamination that has migrated onto the property, or from past uses on the property. Therefore, additional investigation was completed to further evaluate the lateral and vertical extent and environmental quality of identified fill and the environmental quality of underlying clay soils. The results of these activities are being used to develop a materials management plan related to upcoming Proposed Project redevelopment and, ultimately, obtain case closure. Remediation and ultimate capping of contaminated material on the property will reduce direct contact hazards and be beneficial to those that work/live (>4,700 feet from the Property) in the area.

3.16 Traffic and Safety

A study was conducted to evaluate what impacts the Proposed Project will have on adjacent roadways, rail lines, and shipping lanes (Appendix J) Traffic analysis models were developed to evaluate the vehicular travel mode. These models generated values such as average intersection delay and level of service (LOS), which were used to compare the various alternatives. Rail and maritime travel modes were evaluated on a qualitative basis based on available data. The amount of material processed at the Superior site is expected to be similar to that processed at the Duluth, Minnesota site, meaning the study did not assume an increase in traffic of any type at the proposed facility; the traffic redistributed from the Duluth, Minnesota facility to the Superior, Wisconsin facility.

Vehicular

The overall vehicular distribution percentages for the existing Duluth facility were re-applied for the proposed Superior facility. The model shows that the intersection delays remain very similar to No Build scenario, with a couple of intersections increasing in delay by no more than 0.1 second in the Build condition. All of the study intersections are expected to continue to operate at LOS C or better in peak periods through the 2042 design year. The proposed relocation of the C. Reiss site from Duluth, Minnesota to Superior, Wisconsin will have a very minimal impact on the surrounding roadway network. The site currently generates less than 10 vehicles per hour in the peak hours and the volume is not expected to grow after the site relocates to its new location. Therefore, no roadway improvements are recommended. The Proposed Action will not adversely affect vehicular traffic. No shutdowns, road closures, or detours to public roadways are needed. During construction, the contractor will be required to develop and follow a traffic control plan.

Locomotive

The existing C. Reiss Duluth facility is connected to a Burlington Northern – Santa Fe (BNSF) rail yard. The proposed facility in Superior, Wisconsin will also connect to an existing BNSF rail line. Trains currently travel from the south through Superior, Wisconsin and traverse the Grassy Point Railroad Bridge to access the Duluth facility. The existing C. Reiss facility receives 185 trains per year, with an average of about 25 cars per train. As the Superior facility will continue to process the same amount of material; no change in rail traffic compared to that currently using the existing port is anticipated. The rail route is shorter to the Superior facility than it is to the existing Duluth facility which will have the beneficial effect of reduced fuel costs and reduced traffic traveling on the Grassy Point Railroad Bridge.

Maritime

The Proposed Project facility in Superior, Wisconsin is not expected to process additional material compared to the existing Duluth facility. the existing shipping traffic is not anticipated to increase. Ships would still continue down the Saint Louis River, but navigate to the Superior port on the east side of the river rather than the Duluth port on the west side of the river. The travel distance per ship would be reduced by approximately 2.5 miles with the relocation to Superior, Wisconsin. Currently, there are 29 ships per year that travel to and from the C. Reiss Duluth facility. The Proposed Action includes dredging the Superior slip two feet deeper which will allow for larger ships to use the port, creating a potential for up to 3,000 tons of additional capacity on each ship. This would reduce the number of necessary vessels by up to two ships per year. A conservative estimate would be to assume the number of ships will not change from what is currently being accommodated by the existing facility. Regardless, the number of ships entering and exiting the Superior port is not expected to increase as a result of the move from Duluth, Minnesota to Superior, Wisconsin.

3.17 Visual Resources

The Proposed Project's APE for direct effects for historic structures was defined as a 0.5-mile radius (buffer) surrounding the Proposed Project area. There are no recorded historic structures within the Proposed Project area. Twelve historic structures are recorded within the 0.5-mile buffer. These structures consist of three repair shops/roundhouses for railroad equipment, three warehouses, two industrial buildings, a water utility structure, a privy, a grain elevator, and a dock/pier. Five of the structures are associated with the Great Northern Railroad Yards, two with Galena Signal Oil Company, one with Ajax Forge Company, one with Stott Briquet, and one with Great Northern Elevators. The structures date between 1899 and 1975. The SHPO has determined that four of these structures, Wisconsin Architecture and History Inventory Number (AHI#) 17590, AHI# 17594, AHI# 17595, and AHI# 17783 are potentially eligible for listing in the National Register of Historic Places (NRHP). However, review of available aerial imagery indicates that all but AHI # 17783 have been demolished. The SHPO has also determined that the remaining eight structures are not eligible for listing in the NRHP.

Direct effects to these historic structures would not occur based on their distance from the Proposed Project APE. Indirect effects to the extant buildings would be confined to visual effects. Structures AHI# 17591, AHI# 17593, AHI# 17596, AHI# 17896, AHI# 17892 and AHI# 17893 are screened from the Proposed Project APE by vegetation and modern industrial buildings. Structures AHI# 17783 and AHI# 17883 are screened from the Proposed Project area by Midwest Energy Resources facilities which include a large area of coal storage. Structure AHI# 17895, a non-NHRP eligible industrial building, is visible from the Proposed Project APE. However the Proposed Project is consistent with the industrial character of the surrounding area and would not create a negative visual impact to this structure (Appendix G).

MARAD determined that the project will have no effect to visual resources/historic structures and consulted with SHPO Daina Penkiunas via a letter dated June 6, 2022 (Appendix H). Leslie Eisenberg, SHPO Compliance Archaeologist, concurred with MARAD's finding that the Proposed Project will have no effect to historic properties in an email dated September 2, 2022 (Appendix H).

3.18 Section 4(f) Evaluation

Section 4(f) of the US DOT Act of 1966 (codified as 49 U.S.C. § 303) was enacted to protect significant publicly owned parks, recreational areas, wildlife and waterfowl refuges, and public and private historic sites from use by US DOT funded projects. The previously listed public spaces may only be used in a transportation program only if it is determined there is (1) "no prudent or feasible alternative to using that land"; and (2) "the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use" (49 U.S. Code § 303, 1966). The Proposed Project area proposed for redevelopment does not fit the description of a public space as listed in Section 4(f) as it is privately owned by C. Reiss. Further, there are no structures within the Proposed Project area which would be eligible for listing on the NRHP. The Proposed Action will not affect resources described in Section 4(f).

3.19 Public Services and Utilities

The redevelopment of the Proposed Project area will include the construction of a 5,000 square-foot office building/repair shop, transportation weight scales, conveyor systems, and a stormwater retention pond. The Proposed Action will also include reconstructing approximately 7,060 lineal feet of railroad track along with vehicle access roads. New and reconstructed infrastructure will leverage the existing utilities which service the Proposed Project area where appropriate. The Proposed Project will connect with existing infrastructure which includes storm and sanitary sewers, electrical, natural gas, and communications utilities. Connecting to existing utilities will minimize environmental disturbances and curtail excess costs of new utility installation. Due to the Proposed Project area's historic industrial use, the new and reconstructed public services and utilities at the property are not expected to burden publicly provided infrastructure systems or cause irreparable environmental harm.

3.20 Noise and Vibration

A study was conducted to evaluate noise and vibration impacts associated with the Proposed Action using the method outlined in the U.S. Federal Transit Administration (FTA) *Noise and Vibration Impact Assessment Manual* (Federal Transit Administration, 2018) (Appendix J). Residential and commercial receptors nearest to the construction zone were analyzed. Sound levels associated with the Proposed Action were compared to limits listed by the FTA, which are 80 decibel (dBA) for residential receptors and 100 dBA for commercial receptors.

Construction Noise

The Proposed Project will restore the dock by installing of driven steel sheet piles outboard of the existing cap, installing tremie concrete behind the upper section of sheet piles, and restoring and resurfacing the concrete cap. Construction associated with the Proposed Project area is more than 4,700 feet from any residential areas, schools, hospitals, and other noise sensitive areas. The area directly adjacent to the Proposed Project area is also zoned for industrial and manufacturing purposes. Analysis of anticipated construction noise indicates that the noise impact will be masked by existing ambient sound levels and below applicable construction noise criteria.

Construction Vibration

Based on the Proposed Project activities described above, vibration resulting from installation of sheet piles through impact pile driving is anticipated to be the greatest vibration generating construction activity. According to the Federal Transit Administration, human receptors typically perceive pile driving vibration levels within 640 feet of the pile driver (Federal Transit Administration, 2018). Since the nearest NSA is 4,700 feet away, no adverse vibration effects are anticipated from construction.

Operational Noise

Upon completion of the Proposed Project there will be several new sources of stationary noise operating to support daily Site activities. These new sources include noise generated by truck movements, rail movements, overhead cranes, the operation of conveyors, shakers, and screeners, heavy equipment such as front-end loaders and bull dozers, and heating, ventilation and air conditioning equipment. Existing ambient sound levels adjacent to the Project at nearby representative NSAs are assumed to typical of an urban environment dominated by road traffic noise and existing industrial sources during daytime hours (7 a.m. to 7 p.m.). The acoustic environment during nighttime hours is assumed to be a mix of road traffic noise and natural sounds with limited industrial noise.

Based on the modelled sound power levels of the equipment the noise impact of the operational noise sources is anticipated to be insignificant in comparison to existing ambient sound levels and below applicable noise criteria. Operational noise will be masked by existing ambient sound levels at the closest NSA.

Operational Vibration

The Proposed Project will add several new sources of vibration to the site to support future operational activities. The primary sources of operational vibration will be from rail movements, overhead rail mounted crane movements, and heavy equipment movements such as front-end loaders and bull dozers. Vibration generated by the Proposed Project are anticipated to have an insignificant impact at representative NSAs due to the separation distance of over 4,700 feet and will be below existing ambient vibration levels.

3.21 Environmental Justice

Executive Order (EO) 12898 *Federal Actions to Address Environmental Justice in Minority and Low - Income Populations* (February 11, 1994) states that, if possible, no federal actions should place any adverse environmental, economic, social, or health effects on minority or low-income groups. EO 13985 *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government* directs the federal government to revise agency policies to account for racial inequities in their implementation (Executive Office of the President, 2021). In addition, EO 14008, *Tackling the Climate Crisis at Home and Abroad*, created a government-wide Justice40 Initiative (Executive Office of the President, 2021). Under EO 14008, federal agencies identified disadvantaged communities (DACs) that are marginalized, underserved, and overburdened by pollution. A community qualifies as "disadvantaged" if the census tract is above the threshold for one or more environmental or climate indicators and the tract is above the threshold for the socioeconomic indicators. Justice40 Initiative aims to deliver 40% of the overall benefits of federal investments in seven key areas: climate change; clean energy and energy efficiency; clean transit; affordable and sustainable housing; training and workforce development; the remediation and reduction of legacy pollution; and the development of critical clean water infrastructure to these DACs (US DOT, 2022).

The Superior facility is located in Census Tract 55031021100 (CT 211). The Climate and Economic Justice Screening Tool identifies CT 211 as a DAC due to proximity to risk management plan facilities, household income less than twice the federal poverty level and percent of the population 15 years or older not enrolled in college, university or graduate school (Council on Environmental Quality, 2022). In addition, 20.67% of the 2,361 CT 211 residents are non-White compared to the City's 10.11% and the County's 8.38% (PolicyMap, 2022). In CT 211, 1.89% of residents are non-English speakers compared to the City's 1.58% and the County's 1.15% (PolicyMap, 2022). The median family income for CT 211 is $25,353 compared to the City's $61,522 and the County's $68,634 (PolicyMap, 2022).

No residential displacements would result due to the Proposed Action. The closest home to the Proposed Project area is approximately 4,700 feet to the east (Appendix K). The Midwest Energy slip and the General Mills Elevator slip are between the Proposed Project area and the residence. As detailed in Sections 3.1 and 3.13, industrial facilities have been located within the Proposed Project area for over 130-years and the property is zoned W1-Waterfront. Renovating the C Reiss Superior, Wisconsin, facility will open up opportunities for employment for all persons, including disadvantaged populations including the Proposed Project area's DAC population.

The Superior, Wisconsin facility has been vacant and non-functioning for at least 30 years. Plans for occupancy were absent and the Site would otherwise remain vacant. Rehabilitating and relocating operations to this facility will give the Site a new purpose. This revitalizes the Port of Superior's infrastructure and may help revitalize surrounding communities. This Project will be developed with modern technology and has the potential to create new economic opportunity and business for the community.

All materials dredged from Lake Superior or excavated on-site will be handled per a WDNR-required Materials Management Plan which will reduce possible airborne soil/dust affecting vulnerable people with asthma. Contaminated soils, sediments and fill material will be excavated/dredged and re-used on-site to create one berm instead of the four berms in the original design. The top and sides of the berm will be covered with a minimum of 15-inches of clay and 3-inches of topsoil and be reseeded. The capped material will minimize accidental exposure by children digging on or near the Site.

Per Section 3.16, no road closures during construction or increased traffic in nearby communities would result from the Proposed Action. As discussed in Section 3.19, noise and vibration as a result of the Proposed Action would not exceed FTA noise limits. Traffic, noise and air quality impacts are not anticipated to be adverse; therefore, minority and low-income populations will not be adversely impacted as a result of the Proposed Action.

3.22 Cumulative Effects

Three types of impacts are routinely assessed with proposed federal actions and are defined by the CEQ regulations (40 CFR § 1500-1508). Direct impacts, indirect impacts, and cumulative impacts. Direct and indirect impacts have been addressed throughout the previous sections. Cumulative impacts are defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other action (CFR 40 §1508.7).

Cumulative impacts include the direct and indirect impacts of a project together with the reasonably foreseeable future actions of others. The cumulative impacts that result from an action may be undetectable or below applicable significance thresholds for a specific project but can add to other disturbances and eventually lead to a measurable adverse effect. For any given resource, a cumulative impact could only potentially occur if the resource were also directly impacted by the Proposed Action.

The EPA awarded the WDNR a GLRI grant to complete feasibility studies and preliminary designs for dredging contaminated soils at the C Street, Tower Avenue, General Mills, and Oil Barge Dock Slips in the Port of Superior, Wisconsin (Figure 4). The WDNR issued a Request for Proposals to conduct this work in April 2022 with a project completion date of December 2023 (WDNR, 2022). Any actual dredging of these slips would be funding dependent and would take place in 2024 at the earliest. Although the Oil Barge Dock is adjacent to the C. Reiss dock, any dredging and dock rehabilitation activities at C. Reiss would occur prior to any contaminated soil dredging at the C Street, Tower Avenue, General Mills, and Oil Barge Dock Slips. There would be no overlap of project construction with the Proposed Action and the possible future WDNR GLRI contaminated soil project. Cumulative adverse effects are not expected. As the two projects will not have overlapping schedules, air, noise, vibration and climate impacts will not overlap. Both the C. Reiss project and the proposed WDNR GLRI dredging project will have cumulative beneficial impacts by removing contaminated sediment in the SLRAOC and support the EPA in their efforts to delist the SLRAOC.

WisDOT is currently in the process of preliminary design investigation for a proposed roadway improvement of US 53 (East 2nd Street) in Superior, Wisconsin (Figure 4). The proposed project will address deterioration of the existing pavement and select sewer inlets and manholes, improve intersection safety and modernize and improve the condition of curb ramps (WisDOT, 2022). The proposed project is over one mile away from the C. Reiss dock. Construction is expected in 2025. Given the project location and schedule, the East 2nd Street project will not have a cumulative effect with the Proposed Action.

Per WisDOT staff, there is no significant construction anticipated for the Bong Bridge, one of two bridges that link Duluth, Minnesota, to Superior, Wisconsin, for the next three to five years – only routine maintenance (Mason, 2022). Minnesota DOT (MnDOT) and WisDOT are planning improvements to the Blatnik Bridge, the other bridge that links Duluth, Minnesota, to Superior, Wisconsin (MnDOT, 2022) (Figure 4). MnDOT and WisDOT have developed alternative bridge alignments and are gathering public input on the proposed options. Construction is scheduled to begin in 2028. Given the proposed construction schedule, the Blatnik Bridge project will not have a cumulative effect with the Proposed Action.

The City is not planning any major street, water, wastewater or other infrastructure projects in the Proposed Project area within the next three to five years (Sereck, 2022). While there may be some infrastructure maintenance work in the Proposed Project area vicinity, it will be limited in nature and will not have a cumulative effect with the Proposed Action.

4.0 Agency and Tribal Consultation

4.1 SHPO Consultation

A letter summarizing the record searches and overviews of the Proposed Project were sent to the SHPO. The letter presented the determination of MARAD that no significant cultural resources or historic properties would be affected and that no additional investigations would be required. Leslie Eisenberg, SHPO Compliance Archaeologist concurred with MARAD's finding that the Proposed Project will have no effect to historic properties in an email dated September 2, 2022.

4.2 Federally Recognized Tribal Consultation

Notification letters concerning the Proposed Project were sent to sixteen Tribes: Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Keweenaw Bay Indian Community, Michigan; Sokaogon Chippewa Community, Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Fort Belknap Indian Community of the Fort Belknap Reservation of Montana; Grand Portage Band of the Minnesota Chippewa Tribe; St. Croix Chippewa Indians of Wisconsin; Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Leech Lake Band of the Minnesota Chippewa Tribe; Fond du Lac Band of the Minnesota Chippewa Tribe; Mille Lacs Band of Ojibwe; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Miami Tribe of Oklahoma; Menominee Indian Tribe of Wisconsin; and the White Earth Band of the Minnesota Chippewa Tribe. Copies of the Tribal consultation letters are included in Appendix Ia. Return mail receipts are included in Appendix Ib.

MARAD received comments from three Tribes. The Miami Tribe of Oklahoma offered no objection to the proposed project. The Leech Lake Band of Ojibwe stated that they do not have any known recorded sites of religious or cultural importance in the Proposed Project area. The Sokaogon Chippewa Community stated that they do not wish to consult on the Proposed project Copies of the Tribal response are included in Appendix Ic. On July 14, 2022, MARAD followed up by email with the Tribes that had not responded to the letters.

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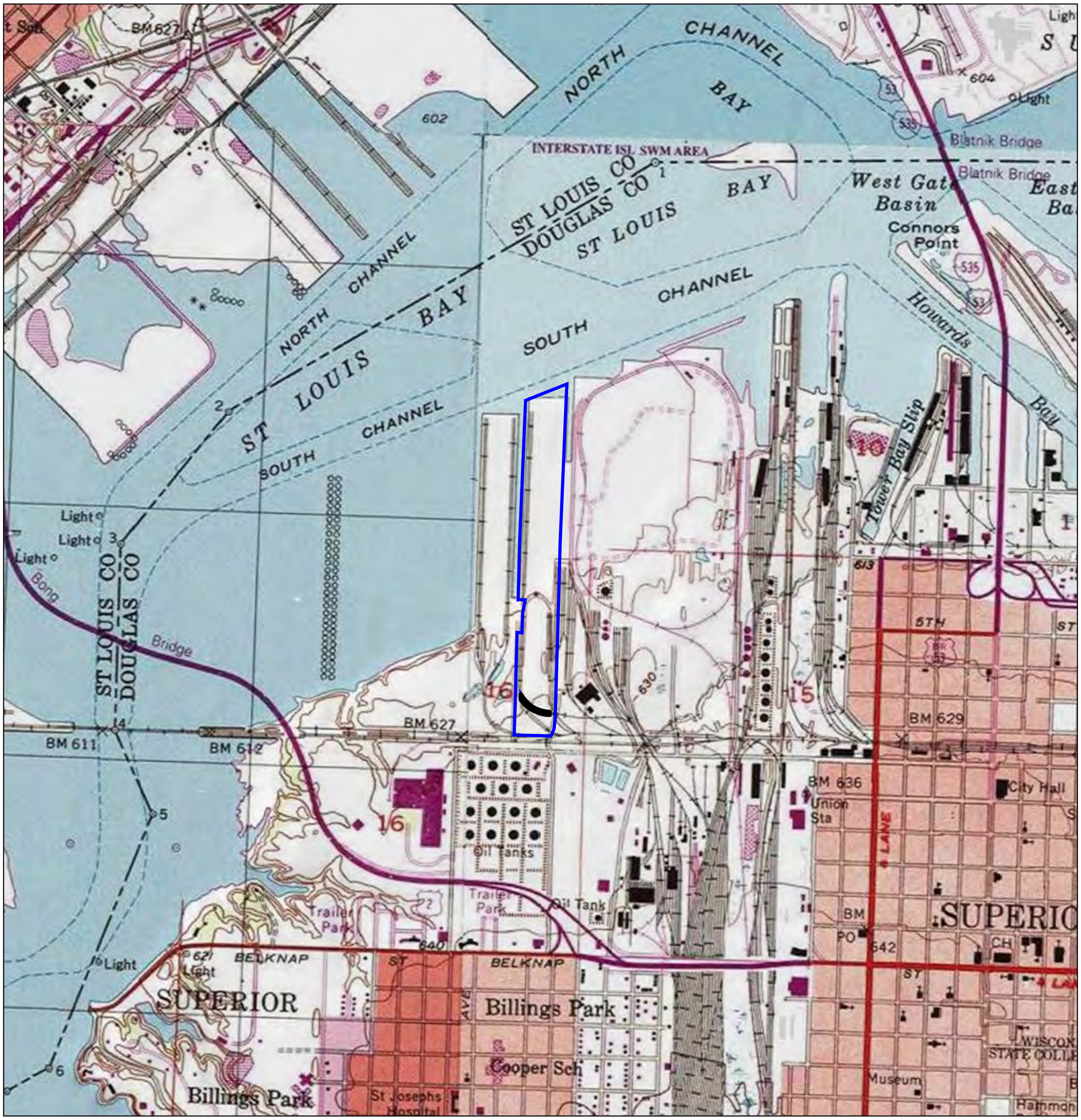
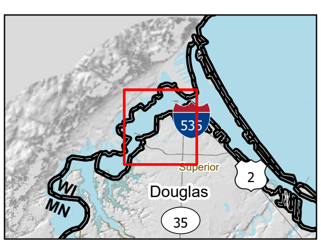
FIGURES





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Project Boundary

Parcel Boundary for Parcel Identification Number 048040100300

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Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

Prepared by AJS on 2022-05-11
TR by MZ on 2022-05-11
IR by EG on 2022-05-11

Client/Project 193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Environmental Assessment

Figure No.
1

Title
Project Topography and Location

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, WDNR, WisDOT
3. Background: USGS 7.5' Topographic Quadrangles

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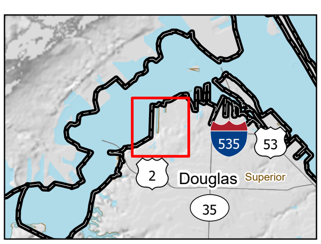

Legend
- Project Boundary
- Parcel Boundary for Parcel Identification Number 048040100300

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Notes
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2. Data Sources: Stantec, SCO, WDNR, WisDOT,
3. Orthophotography: ESRI World Imagery

Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

Prepared by AJS on 2022-05-11
TR by MZ on 2022-05-11
IR by EG on 2022-05-11

Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Environmental Assessment

Figure No.
2

Title
Site Layout

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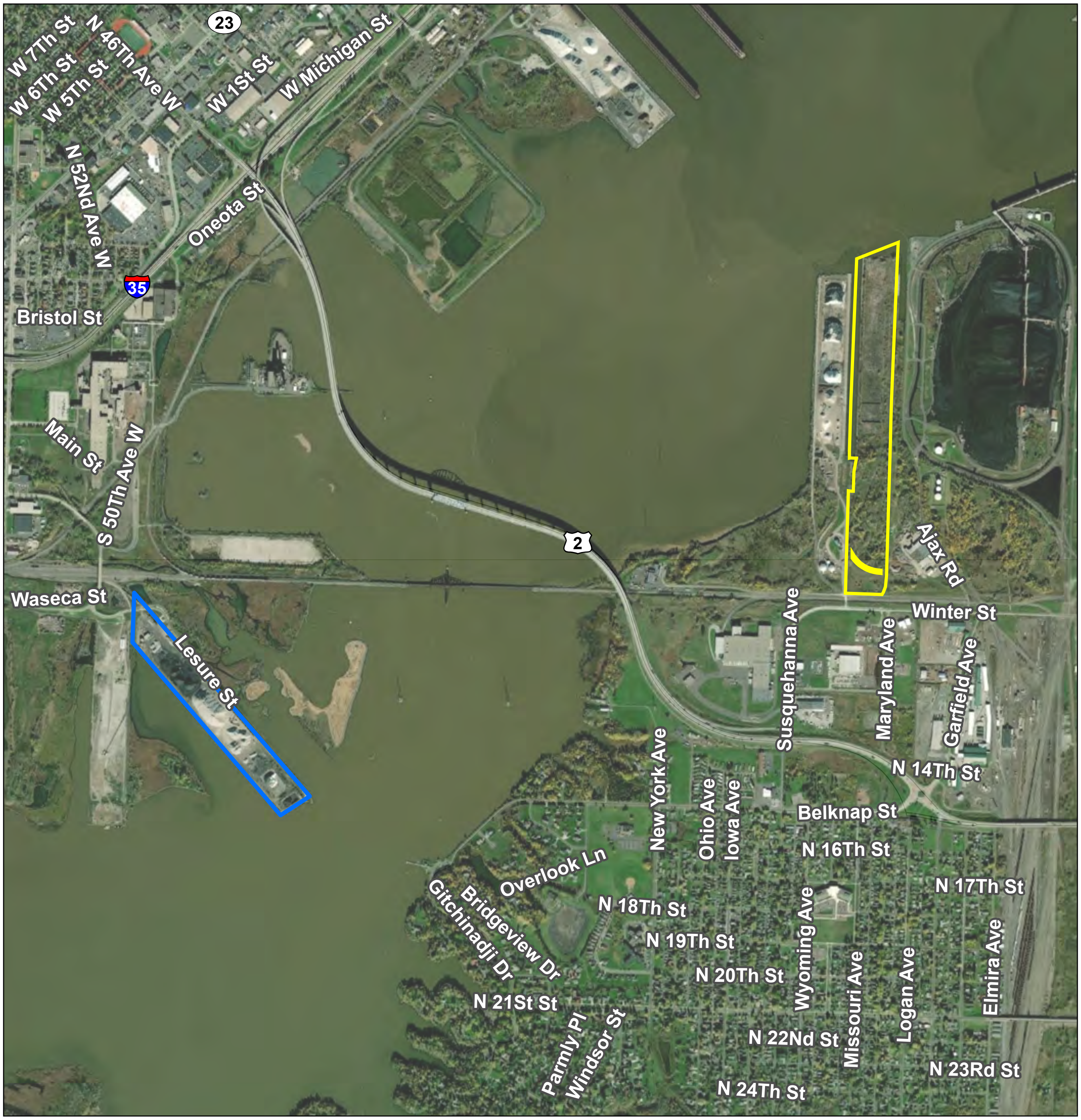

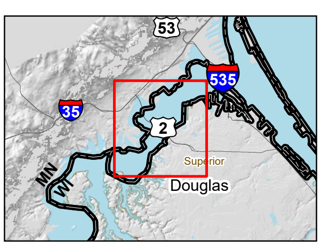

Legend

Project Boundary(C Reiss Superior Facility)

C Reiss Duluth Facilty

0 1,000 2,000 Feet

(At original document size of 8.5x11)
1:24,000

N

Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

Prepared by AJS on 2022-05-11
TR by MZ on 2022-05-11
IR by EG on 2022-05-11

Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Environmental Assessment

Figure No.
3

Title
C Reiss Facility Locations

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, SCO, WDNR, WisDOT,
3. Orthophotography: ESRI World Imagery

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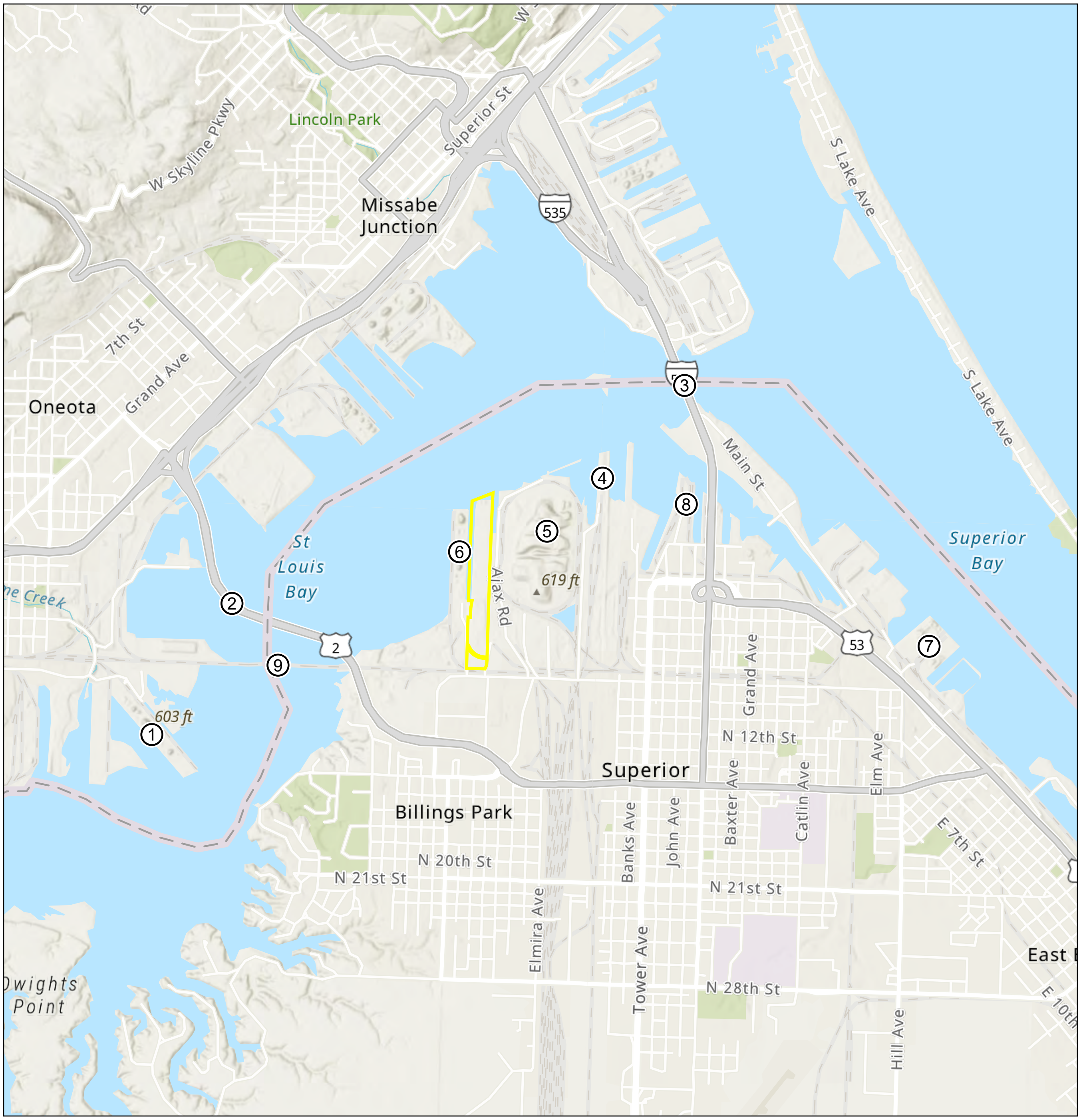

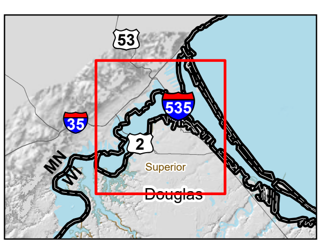

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, SCO, WDNR, WisDOT,
3. Background: ESRI World Topo

Legend

- Project Boundary
- (1) C. Reiss Duluth Facility
- (2) Bong Bridge
- (3) Blatnik Bridge
- (4) General Mills Elevators and Slip
- (5) Midwest Energy/Oil Barge Dock
- (6) Hallet 8 Slip
- (7) C Street/Graymount-Lafarge Slip
- (8) Tower Avenue/CHS 1 & 2 Slip
- (9) Grassy Point Draw (BNSF RR Swing Bridge)

0 2,000 4,000 Feet
(At original document size of 8.5x11)
1:48,000

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Stantec

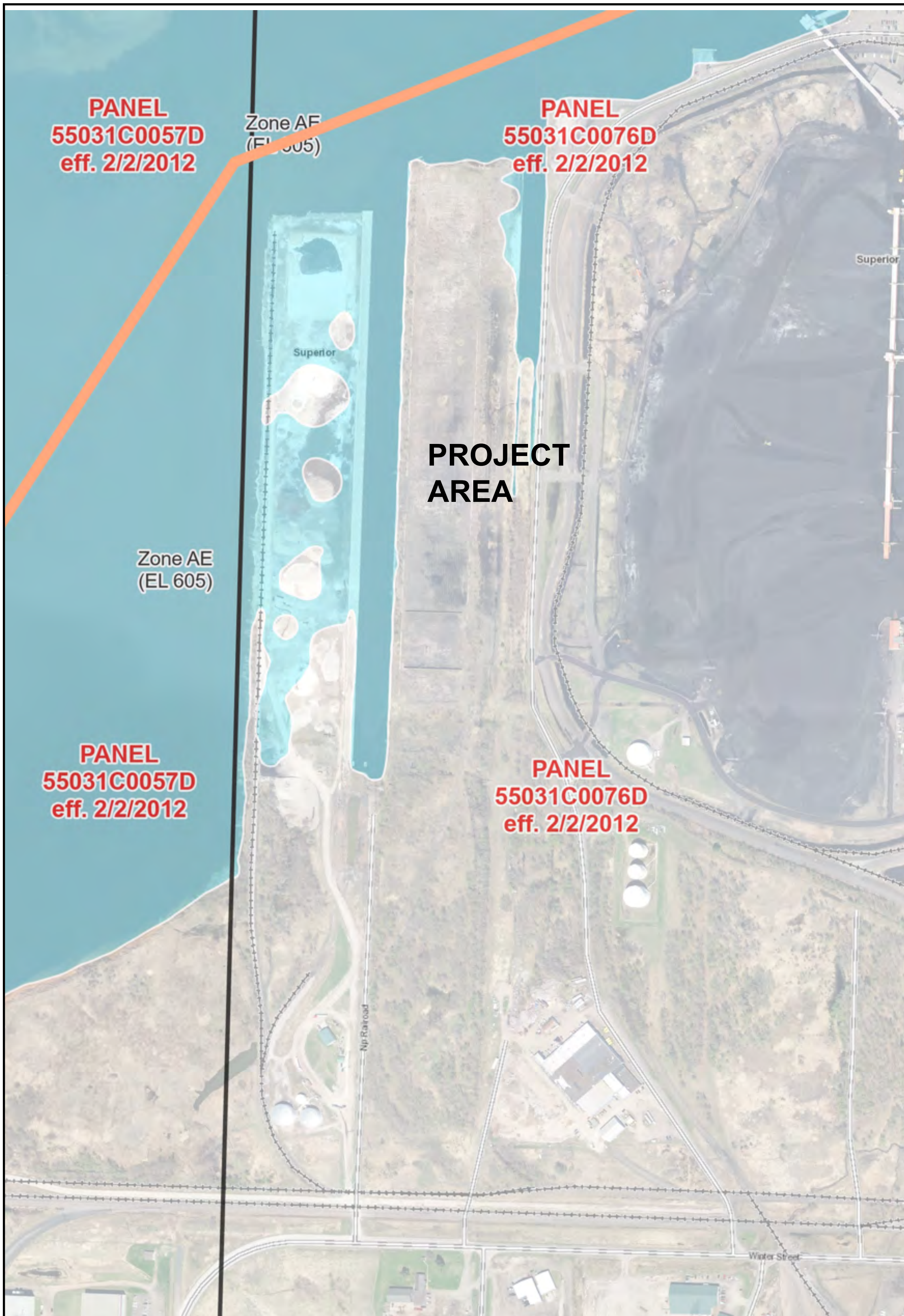
Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

Prepared by AJS on 2022-05-11
TR by MZ on 2022-05-11
IR by EG on 2022-05-11

Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Environmental Assessment

Figure No.
4

Title
Location Overview



Legend

2D Water Surface Elevation Grid

- High : 937.446
- Low : 855.125

Dams

- Dams with FERC License
- Dams

Record Flood Levels

Analysis Lines

- Other
- Flood Insurance Study
- Letter of Map Revision
- Case By Case Analysis
- Bridge

Analysis Points

- Other
- Flood Insurance Study
- Letter of Map Revision
- Case By Case Analysis
- Bridge

Analysis Catchments

Floodplain Storage

Cross Sections

Floodplains

- Flood Fringe
- Floodway

FERC Project Area Boundaries

DOT Bridges

Statewide Paper FIRM Index

FIRM Panels

Cross-Sections

Flood Hazard Boundaries

- Limit Lines
- SFHA / Flood Zone Boundary

Flood Hazard Zones

- 1% Annual Chance Flood Hazard

0.3 0 0.13 0.3 Miles

1: 7,920

NAD_1983_HARN_Wisconsin_TM

Notes

Figure 5

Floodplain Map

APPENDICIES

APPENDIX A

Air Calculations

Appendix A

Table 1-1 Construction Emission Estimates - Total Project

Pollutant	Engine Emissions tons	Earthmoving tons	TOTAL tons
CO	10.4		10.4
NO_x	53.6		53.6
PM_{10}	1.7	0.2	1.9
$PM_{2.5}$	1.7	0.0	1.7
SO_2	0.02		0.02
VOC	3.3		3.3
Individual HAP	0.4		0.4
Combined HAP	0.6		0.6
Methane	0.1		0.1
Nitrogen Dioxide	0.1		0.06
CO_2	2,492		2,492
CO_{2e}	2,515		2,515

Environmental Assessment
C. Reiss
Port of Superior, Infrastructure Improvements Project

Appendix A

Table 1-2 Construction Equipment Schedule

Equipment	Pipeline			Total Hours	Maximum	Load	Loaded
	Quantity	Hrs/Wk	Weeks Used	Equipment Usage	Power (HP)	Factor	Power (HP)
Air Compressor	2	60	16	1920	310	0.56	174
Backhoe	4	60	16	3840	75	0.21	16
Bobcat	2	60	8	960	150	0.21	32
Digger Derrick	1	60	8	480	300	0.59	177
Dozers	4	60	20	4800	410	0.59	242
Dump Truck	8	60	20	9600	325	0.59	192
Excavator	2	60	8	960	138	0.59	81
Front End Loaders	2	60	8	960	196	0.59	116
Generators	4	60	16	3840	430	0.68	292
Grader	2	60	16	1920	140	0.64	90
Pickup Trucks	20	60	24	28,800	250	0.59	148
Scrapper	2	60	16	1,920	488	0.59	288
SideBoom	8	60	16	7,680	240	0.59	142
Trackhoe	8	60	16	7,680	320	0.21	67
Water / Fuel Truck	2	40	24	1920	250	0.59	148

Assume six month schedule, four weeks per month, 60 hours per week
EPA 420-P-04-009, Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling - Compression Ignition , USEPA, April 2004 - Tier 2 Engines
Load Factors from Appendix A of *EPA 420_P-04-005, Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling* , USEPA, April 2004

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C. Reiss
Port of Superior, Infrastructure Improvements Project

Appendix A

Table 1-3 Construction Equipment Engine Emissions

	Total Hours	Loaded	Criteria Emission Factors (g/hp-hr)						GHG Emission Factors (g/hp-hr)			Criteria Emissions (tons)						GHG Emissions (tons)			
Equipment	**Equipment Usage**	**Power (HP)**	**VOC**	**CO**	**NOx**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**CO_2**	**Methane**	**N_2O**	**VOC**	**CO**	**NOx**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**CO_2**	**Methane**	**N_2O**	**CO_{2e}**
Air Compressor	1,920	174	0.1669	0.8425	4.34	0.132	0.128	0.002	194	0.011	0.005	0.06	0.31	1.59	0.05	0.05	0.00	71	0.00	0.00	72
Backhoe	3,840	16	0.3672	2.3655	4.70	0.240	0.233	0.002	194	0.011	0.005	0.02	0.16	0.31	0.02	0.02	0.00	13	0.00	0.00	13
Bobcat	960	32	0.3384	0.8667	4.10	0.132	0.128	0.002	194	0.011	0.005	0.01	0.03	0.14	0.00	0.00	0.00	6	0.00	0.00	7
Digger Derrick	480	177	0.1669	0.8425	4.00	0.132	0.128	0.002	194	0.011	0.005	0.02	0.08	0.37	0.01	0.01	0.00	18	0.00	0.00	18
Dozers	4,800	242	0.1669	0.8425	4.34	0.132	0.128	0.002	194	0.011	0.005	0.21	1.08	5.55	0.17	0.16	0.00	248	0.01	0.01	250
Dump Truck	9,600	192	0.1669	0.8425	4.34	0.132	0.128	0.002	194	0.011	0.005	0.34	1.71	8.80	0.27	0.26	0.00	393	0.02	0.01	396
Excavator	960	81	0.3384	0.8667	4.10	0.132	0.128	0.002	194	0.011	0.005	0.03	0.07	0.35	0.01	0.01	0.00	17	0.00	0.00	17
Front End Loaders	960	116	0.3085	0.7475	4.00	0.132	0.128	0.002	194	0.011	0.005	0.04	0.09	0.49	0.02	0.02	0.00	24	0.00	0.00	24
Generators	3,840	292	0.3085	0.8425	4.34	0.132	0.128	0.002	194	0.011	0.005	0.38	1.04	5.37	0.16	0.16	0.00	240	0.01	0.01	242
Grader	1,920	90	0.3384	0.8667	4.10	0.132	0.128	0.002	194	0.011	0.005	0.06	0.16	0.78	0.02	0.02	0.00	37	0.00	0.00	37
Pickup Trucks	28,800	148	0.3085	0.7475	4.00	0.132	0.128	0.002	194	0.011	0.005	1.44	3.50	18.73	0.62	0.60	0.01	906	0.05	0.02	915
Scrapper	1,920	288	0.1669	0.8425	4.34	0.132	0.128	0.002	194	0.011	0.005	0.10	0.51	2.64	0.08	0.08	0.00	118	0.01	0.00	119
SideBoom	7,680	142	0.3085	0.7475	4.00	0.132	0.128	0.002	194	0.011	0.005	0.37	0.90	4.79	0.16	0.15	0.00	232	0.01	0.01	234
Trackhoe	7,680	67	0.1669	0.8425	4.34	0.132	0.128	0.002	194	0.011	0.005	0.09	0.48	2.47	0.07	0.07	0.00	110	0.01	0.00	111
Water / Fuel Truck	1,920	148	0.3085	0.7475	4.00	0.132	0.128	0.002	194	0.011	0.005	0.10	0.23	1.25	0.04	0.04	0.00	60	0.00	0.00	61
									TOTALS			3.3	10.4	53.6	1.7	1.7	0.02	2,492	0.142	0.064	2,515

EPA 420-P-04-009, *Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling - Compression Ignition* , USEPA, April 2004 - Tier 2 Engines
Load Factors from Appendix A of EPA 420_P-04-005, *Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling* , USEPA, April 2004

HAP Pollutant Emissions - Construction Equipment

Air Toxic	Fraction of VOC	Emissions (ton/yr)
Benzene	0.020	0.1
Formaldehyde	0.118	0.4
Acetaldehyde	0.053	0.2
1,3-Butadiene	0.002	0.0
Acrolein	0.003	0.0
	TOTAL HAPS	0.6

Appendix A

Table 1 - Fugitive Dust Emissions from Earthmoving Activities

Construction Activity	Daily Material Handling Rate (ton/day)	Construction Days	Average Exposed Area (acres)	Emission Factors (lb/ton)		Emissions (tons)	
				PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Topsoil removal by Scraper	6	96		0.058	0.0061	0.02	0.00
Topsoil replacement	5	96		0.012	0.0013	0.00	0.00
Wind Erosion Exposed Areas			1	0.38	0.0399	0.14	0.01
				TOTALS		0.2	0.02

Assumptions:

Construction schedule of 6 month, 4 weeks per month, six days per week.
Topsoil removal by Scraper emission factor: AP-42 Section 11.9 Western Surface Coal Mining, Table 11.9-4, July 1998, topsoil removal by scrapper
Topsoil replacement emission factor: AP-42 Section 11.9 Western Surface Coal Mining, Table 11.9-4, July 1998, overburden replacement
As worst case, PM_{10} is set equal to Total Particulate Matter. $PM_{2.5}$ is set to 0.105 times PM_{10} per Table 11.9-1
Wind Erosion Exposed Areas emission factor: AP-42 Section 11.9 Western Surface Coal Mining, Table 11.9-4, July 1998, wind erosion of exposed areas (ton/yr/acre)

Environmental Assessment
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Table 2 - Operational Emissions for Ships

27	ships/yr - Number of ships expected at proposed facility
2.5	miles - Distance saved at new location
2	ships - Number of ships reduced annually
490.0	miles/trip - Distance between source and port by ship

Equipment	Ship Miles Reduced per Year	Criteria Emission Factors (g/ship-mi)							Criteria Emissions (tons)						
		VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SO_2	CO_2	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SO_2	CO_2
Freight Ships	1,048	1,493	6,869	39,626	1,173	1,173	19,559	1,464,151	1.72	7.93	45.76	1.35	1.35	22.58	1690.62
								TOTALS (tons)	1.7	7.9	45.8	1.4	1.4	22.58	1,691

**Emissions Analysis of Freight Transport Comparing Land-Side and Water-Side Short-Sea Routes, Table 11, Corbett et al., 2007*

	Ship Designations		
Pollutant	*grams/ship-mi*	*TEU/ship*	*g/TEU-mi*
VOC	1,493	5,000.0	0.30
CO	6,869	5,000.0	1.37
NO_x	39,626	5,000.0	7.93
PM_{10}	1,173	5,000.0	0.23
SO_x	19,559	5,000.0	3.91
CO_2	1,464,151	5,000.0	292.83

Environmental Assessment
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Port of Superior, Infrastructure Improvements Project

Table 3 - Operational Emissions for Trains

185 locomotives/yr - Number of locomotives expected at proposed facility
3.0 miles - Distance saved at new location

Equipment	Average Locomotive Horsepower (ea)	Criteria Emission Factors (g/hp-hr)*							Criteria Emissions (tons)**						
		VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SO_2	CO_2	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SO_2	CO_2
Freight Ships	11,000	0.26	1.28	4.95	0.18	0.18	0.10	561.4	0.58	2.87	11.10	0.40	0.40	0.22	1259.27
								TOTALS (tons)	0.6	2.9	11.1	0.4	0.4	0.2	1,259

**Emission Factors for Locomotives, EPA Office of Transportation and Air Quality, EPA-420-F-09-025, April 2009 (Tier 2, Line-Haul)*
***Ton per year emissions assume 3-mi reduction equates to 1-hr runtime reduction*

APPENDIX B

Wetland Delineation Report

Assured Wetland Delineation Report

Reiss Superior Dock
The C. Reiss Coal Company, LLC
City of Superior
Douglas County, Wisconsin
Stantec Project #:193707141
Assured Delineator: Matt Knickelbine

October 28, 2019

Prepared for:

Christian Zuidmulder, General Manager
C. Reiss Coal Company, LLC
111 West Mason Street, Green Bay, WI 54303

Prepared by:

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1165 Scheuring Road
De Pere, Wisconsin 54115-1001
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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) performed a wetland determination and delineation of the Reiss Superior Dock (the "Study Area") on behalf of the C. Reiss Coal Company, LLC (the Client). The wetland delineation was completed on October 1 and 2, 2019 by Matt Knickelbine of Stantec, an assured delineator qualified via the Wisconsin Department of Natural Resources (WDNR) Wetland Delineation Assurance Program, on May 30, 2019 (see Appendix A for Delineator Qualifications).

The Study Area is approximately 53 acres in size and located in Sections 9 and 16, Township 49 North, Range 14 West, City of Superior, Douglas County, Wisconsin. Specifically, the Study Area is located north of Winter Street (Appendix B, Figure 1). The purpose and objective of the wetland determination and delineation was to identify the extent and spatial arrangement of wetlands, as well as to identify potentially jurisdictional waterways, within the Study Area.

Wetland and waterways may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the Wisconsin Department of Natural Resources (WDNR), and local regulation under jurisdiction of the local county, town, city, or village. Stantec recommends this report be submitted to local authorities, the WDNR, and USACE for final jurisdictional review and concurrence. Delineations completed by a WDNR Assured Delineator do not need to obtain WDNR concurrence.

2.0 METHODS

2.1 WETLANDS

Wetland determinations were based on the criteria and methods outlined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1 (1987) and subsequent guidance documents, and applicable Regional Supplements to the *Corps of Engineers Wetland Delineation Manual*.

The wetland determination involved the use of available resources to assist in the assessment such as U.S. Geological Survey (USGS) topographic maps, U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey, WDNR Wisconsin Wetland Inventory (WWI) mapping, and aerial photography.

On-site wetland determinations were made using the three criteria (vegetation, soil, and hydrology) and technical approach defined in the USACE 1987 Manual and applicable Regional Supplement. According to procedures described in the 1987 Manual and applicable Regional Supplement, areas that under normal circumstances reflect a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology (e.g., inundated or saturated soils) are considered wetlands.

As recent weather patterns influence the visibility and presence of some wetland hydrology indicators, the antecedent precipitation in the three months leading up to the field investigation was reviewed. The current year's precipitation data were compared to long-term (30-year) precipitation averages and standard deviation to determine if precipitation was normal, wet, or dry for the area using a WETS analysis as developed by the NRCS (Appendix C).

The wetland boundary and sampling points were identified and surveyed with a Global Positioning System (GPS) capable of sub-meter accuracy, mapped using Geographical Information System (GIS) software and flagged.

2.2 WATERWAYS

Review of waterway characteristics and determination of navigability and jurisdiction was beyond the scope of the investigation. However, if observed, waterways, waterbodies, culverts, and/or other connections to off-site wetland or aquatic features that may be under federal or state authority were surveyed using a GPS and mapped using GIS software.

3.0 RESULTS

3.1 SITE DESCRIPTION

The Study Area is comprised of fallow field, hardwood forest, hardwood swamp, shrub-carr, sedge meadow, and wet meadow communities. The landscape slopes generally to from south to north from topographic highs of approximately 632 feet mean sea level (msl) to topographic lows of approximately 602 feet msl. The Study Area is bordered by railroad right of way to the south, Lake Superior to the north, and unnamed access roads and Lake Superior to the east and west.

Soils present within the Study Area and their hydric status are summarized in Table 1. Wetlands identified during the field investigation do not appear to follow the soil mapping (Appendix B, Figures 2 and 3).

Table 1. Summary of Soils Identified within the Study Area

Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
262B: Amnicon-Cuttre complex, 0 to 4 percent slopes	Amnicon	40-60	Till plains	No
	Cuttre	30-50	Till plains	No
	Miskoaki	0-10	Not available	No
	Bergland	0-5	Depressions, drainageways	Yes
	Sedgewick	0-5	Not available	No
2030: Udorthents and Udipsamments, cut or fill	Udorthents-Cut or fill	0-100	Not available	No
	Udipsamments-Cut or fill	0-100	Not available	No

The WWI map identifies five wetland-too-small-to-delineate points within the Study Area (Appendix B, Figure 4). The WWI points fall within field delineated wetlands W1, W2, W3, and W4 (Appendix B, Figure 5).

3.2 CLIMATIC CONDITIONS

Average precipitation for the investigation area was obtained from the Superior, WI WETS weather station (478349) and used for the WETS analysis. A total of 11.46 inches of precipitation occurred in the three-month time period prior to the field investigation in 2019 compared to the long-term average of 11.82 inches. Based on the WETS analysis, conditions were normal (Appendix C). However, since the month prior had nearly double the normal amount of rainfall (7.34 inches in September), including 1.7 inches the day before the surveys, the conditions observed at the site were determined to be wetter than normal, despite the outcome of the WETS analysis.

3.3 WETLANDS

Seven wetlands were identified and delineated within the Study Area. Wetland determination data forms were completed for sixteen sample points along transects through the wetlands and adjacent uplands and are included in Appendix D. Photographs of the wetlands and adjacent lands are included in Appendix E. The wetland boundary and sample point locations are shown on Figure 5 (Appendix B). The wetlands are summarized in Table 2 below and described in detail in the following sections.

Table 2. Summary of Wetlands Identified within the Study Area

Wetland ID	Wetland Type* (Mapped WWI)	Adjacent Surface Waters	Acreage (within Study Area)
Wetland W1	Wet Meadow/Hardwood Swamp	N/A	2.65
Wetland W2	Hardwood Swamp	N/A	0.33
Wetland W3	Sedge Meadow	N/A	0.49
Wetland W4	Shrub-carr/Wet Meadow	Lake Superior	5.31
Wetland W5	Shrub-carr/Wet Meadow	Lake Superior	12.19
Wetland W6	Hardwood Swamp	N/A	0.01
Wetland W7	Shrub-carr	N/A	0.26
		TOTAL	**21.24**

*Wetland type based on Eggers & Reed, 2014; mapped WWI wetland may or may not correspond to field observed wetland type.

3.3.1 Wetland W1

Wetland W1 is a wet meadow/hardwood swamp complex. Vegetation, hydrology, and soil characteristics of the wetland are summarized below and described on the data forms contained in Appendix D.

Vegetation

Dominant plant species identified within wetland W1 consist of bluejoint (*Calamagrostis canadensis*, OBL), giant goldenrod (*Solidago gigantea*, FACW), tussock sedge (*Carex stricta*, OBL), and quaking aspen (*Populus tremuloides*, FAC). Other common species identified in the wetland are listed on the data forms included in Appendix D. The dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

Hydrology

The wetland appears to have a seasonally inundated hydroperiod. Primary indicators of wetland hydrology observed included A2-High Water Table, A3-Saturation, and B9-Water Stained Leaves. Secondary indicators of wetland hydrology observed included D2-Geomorphic Position, D3-Shallow Aquitard and D5-FAC-Neutral Test. Therefore, the wetland hydrology criterion was met.

Soils

Soils within the wetland are mapped by the NRCS as Amnicon-Cuttre complex, 0 to 4 percent slopes (262B) (Appendix B, Figures 2 and 3). Field indicators of hydric soil identified consisted of NRCS field Indicators A11-Depleted Below Dark Surface, F1-Loamy Mucky Mineral, F3-Depleted Matrix, and F6-Redox Dark Surface. Therefore, the hydric soil criterion was met.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, soils, and topography consisting of the following: 1) Transition from a wet meadow or hardwood swamp community dominated by bluejoint and quaking aspen to a fallow field or hardwood forest upland community dominated by smooth brome (*Bromus inermis*, UPL) and tansy (*Tanacetum vulgare*, FACU); 2) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; and 3) Transition from soils exhibiting hydric soil indicators to soils lacking indicators of hydric soil conditions. The transition from wetland to upland characteristics generally correlated with a well-defined topographic break.

3.3.2 Wetland W2

Wetland W2 is a hardwood swamp community. Vegetation, hydrology, and soil characteristics of the wetland are summarized below and described on the data forms contained in Appendix D.

Vegetation

Dominant plant species identified within wetland W2 consist of bluejoint and quaking aspen. Other common species identified in the wetland are listed on the data forms included in Appendix D. The dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

Hydrology

The wetland appears to have a seasonally saturated hydroperiod. Primary Indicators of wetland hydrology observed included A2-High Water Table, A3-Saturation, and B9-Water-Stained Leaves. Secondary indicators of wetland hydrology observed included D2-Geomorphic Position D3-Shallow Aquitard, and D5-FAC-Neutral Test. Therefore, the wetland hydrology criterion was met.

Soils

Soils within the wetland are mapped by the NRCS as Amnicon-Cuttre complex, 0 to 4 percent slopes (262B) (Appendix B, Figures 2 and 3). Field indicators of hydric soil identified consisted of NRCS field Indicators F1-Loamy Mucky Mineral. Therefore, the hydric soil criterion was met.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, soils, and topography consisting of the following: 1) Transition from a hardwood swamp community dominated by bluejoint and quaking aspen to a hardwood forest dominated by smooth brome and quaking aspen; 2) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; and 3) Transition from soils exhibiting hydric soil indicators to soils lacking indicators of hydric soil conditions. The transition from wetland to upland characteristics generally correlated with a well-defined topographic break.

3.3.3 Wetland W3

Wetland W3 is a sedge meadow community. Vegetation, hydrology, and soil characteristics of the wetland are summarized below and described on the data forms contained in Appendix D.

Vegetation

Dominant plant species identified within wetland W3 consist of bluejoint, lake sedge (*Carex lacustris*, OBL), reed canary grass (*Phalaris arundinacea*, FACW), and tussock sedge. Other common species identified in the wetland are listed on the data forms included in Appendix D. The dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

Hydrology

The wetland appears to have a permanently saturated hydroperiod. Primary indicators of wetland hydrology observed included A2-High Water Table and A3-Saturation. Secondary indicators of wetland hydrology observed included D2-Geomorphic Position, D3-Shallow Aquitard and D5-FAC-Neutral Test. Therefore, the wetland hydrology criterion was met.

Soils

Soils within the wetland are mapped by the NRCS as Amnicon-Cuttre complex, 0 to 4 percent slopes (262B) (Appendix B, Figures 2 and 3). Field indicators of hydric soil identified consisted of NRCS field Indicators A1-Histosol, A2-Histic Epipedon, A3-Black Histic, and A12-Thick Dark Surface. Therefore, the hydric soil criterion was met.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, soils, and topography consisting of the following: 1) Transition from a sedge meadow community dominated by lake sedge and tussock sedge to a fallow field or hardwood forest upland community dominated by smooth brome and tansy; 2) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; and 3) Transition from soils exhibiting hydric soil indicators to soils lacking indicators of hydric soil conditions. The transition from wetland to upland characteristics generally correlated with a well-defined topographic break.

3.3.4 Wetland W4

Wetland W4 is a shrub-carr/wet meadow complex on an old dock. Soils are considered disturbed within wetland W4 because they consist of an impervious concrete surface, in some cases at the surface. Vegetation, hydrology, and soil characteristics of the wetland are summarized below and described on the data forms contained in Appendix D.

Vegetation

Dominant plant species identified within wetland W4 consist of bluejoint, common rush (*Juncus effusus*, OBL), narrow-leaved cattail (*Typha angustifolia*, OBL), tussock sedge, and sandbar willow (*Salix interior*, FACW). Other common species identified in the wetland are listed on the data forms included in Appendix D. The dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

Hydrology

The wetland appears to have a seasonally inundated hydroperiod. Primary indicators of wetland hydrology observed included A1-Surface Water, A2-High Water Table, and A3-Saturation. Secondary indicators of wetland hydrology observed included D2-Geomorphic Position, D3-Shallow Aquitard and D5-FAC-Neutral Test. Therefore, the wetland hydrology criterion was met.

Soils

Soils within the wetland are mapped by the NRCS as Udorthents and Udipsamments, cut or fill (2030) (Appendix B, Figures 2 and 3). Field indicators of hydric soil identified consisted of NRCS field Indicators S1-Sandy Mucky Mineral and S7-Dark Surface. Therefore, the hydric soil criterion was met.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, soils, and topography consisting of the following: 1) Transition from a wet meadow or shrub-carr community dominated by bluejoint and sandbar willow to a fallow field upland community dominated by kentucky bluegrass (*Poa pratensis*, FACU); 2) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; and 3) Transition from soils exhibiting hydric soil indicators to soils lacking indicators of hydric soil conditions. The transition from wetland to upland characteristics generally correlated with a well-defined topographic break.

3.3.5 Wetland W5

Wetland W5 is a shrub-carr/wet meadow complex on an old dock. Soils are considered disturbed within wetland W4 because they consist of an impervious concrete surface, in some cases at the surface. Vegetation, hydrology, and soil characteristics of the wetland are summarized below and described on the data forms contained in Appendix D.

Vegetation

Dominant plant species identified within wetland W5 consist of common rush, scouringrush horsetail (*Equisetum hyemale*, FAC), and sandbar willow. Other common species identified in the wetland are listed on the data forms included in Appendix D. The dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

Hydrology

The wetland appears to have a seasonally inundated hydroperiod. Primary indicators of wetland hydrology observed included A1-Surface Water, A2-High Water Table, and A3-Saturation. Secondary indicators of wetland hydrology observed included D2-Geomorphic Position, D3-Shallow Aquitard and D5-FAC-Neutral Test. Therefore, the wetland hydrology criterion was met.

Soils

Soils within the wetland are mapped by the NRCS as Udorthents and Udipsamments, cut or fill (2030) (Appendix B, Figures 2 and 3). Field indicators of hydric soil identified consisted of NRCS field Indicators S1-Sandy Mucky Mineral and S7-Dark Surface. Therefore, the hydric soil criterion was met.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, soils, and topography consisting of the following: 1) Transition from a wet meadow or shrub-carr community dominated by scouringrush horsetail and sandbar willow to a fallow field upland community dominated by kentucky bluegrass; 2) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; and 3) Transition from soils exhibiting hydric soil indicators to soils lacking indicators of hydric soil conditions. The transition from wetland to upland characteristics generally correlated with a well-defined topographic break.

3.3.6 Wetland W6

Wetland W6 is a hardwood swamp community located in a small depression. Vegetation, hydrology, and soil characteristics of the wetland are summarized below and described on the data forms contained in Appendix D.

Vegetation

Dominant plant species identified within wetland W6 consist of Kentucky bluegrass, dark-green bulrush (*Scirpus atrovirens*, OBL), and quaking aspen. Other common species identified in the wetland are listed on the data forms included in Appendix D. The dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

Hydrology

The wetland appears to have a seasonally saturated hydroperiod. Hydrology appears to be provided for Wetland W6 by the presence of a road that has no culvert and appears to hold up surface water during rain events, disrupting the natural flow of surface water and ponding it in Wetland 6. No primary indicators of wetland hydrology were observed. Secondary indicators of wetland hydrology observed included D2-Geomorphic Position, and D5-FAC-Neutral Test. Therefore, the wetland hydrology criterion was met.

Soils

Soils within the wetland are mapped by the NRCS as Amnicon-Cuttre complex, 0 to 4 percent slopes (262B) (Appendix B, Figures 2 and 3). Soils were disturbed and consisted of coal or loamy coal. Due to the disturbed nature of the soils, soils were considered to be hydric due to the presence of wetland hydrology and hydrophytic vegetation despite the fact that they lacked hydric indicators.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, soils, and topography consisting of the following: 1) Transition from a hardwood swamp community dominated by green bulrush and quaking aspen to a hardwood forest dominated by smooth brome and quaking aspen; 2) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; and 3) Transition from soils exhibiting hydric soil indicators to soils lacking indicators of hydric soil conditions. The transition from wetland to upland characteristics generally correlated with a well-defined topographic break.

3.3.7 Wetland W7

Wetland W7 is a shrub-carr community. Vegetation, hydrology, and soil characteristics of the wetland are summarized below and described on the data forms contained in Appendix D.

Vegetation

Dominant plant species identified within wetland W7 consist of Kentucky bluegrass, redtop (*Agrostis gigantea*, FACW), speckled alder (*Alnus incana*, FACW), quaking aspen, and white birch (*Betula papyrifera*, FACU). Other common species identified in the wetland are listed on the data forms included in Appendix D. The dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

Hydrology

The wetland appears to have a seasonally saturated hydroperiod. No primary indicators of wetland hydrology were observed. Secondary indicators of wetland hydrology observed included C2-Dry Season Water Table and D2-Geomorphic Position. Therefore, the wetland hydrology criterion was met.

Soils

Soils within the wetland are mapped by the NRCS as Amnicon-Cuttre complex, 0 to 4 percent slopes (262B) (Appendix B, Figures 2 and 3). Soils were disturbed and consisted of coal or loamy coal. Due to the disturbed nature of the soils, soils were considered to be hydric due to the presence of wetland hydrology and hydrophytic vegetation despite the fact that they lacked hydric indicators.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, soils, and topography consisting of the following: 1) Transition from a shrub-carr community dominated by speckled alder to a hardwood forest upland community dominated by smooth brome and quaking aspen; 2) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; and 3) Transition from soils exhibiting hydric soil indicators to soils lacking indicators of hydric soil conditions. The transition from wetland to upland characteristics generally correlated with a well-defined topographic break.

3.4 UPLANDS

Upland within the Study Area consisted of fallow field and hardwood forest. Dominant vegetation within the uplands included common milkweed (*Asclepias syriaca*, UPL), Kentucky bluegrass, smooth brome, spotted knapweed (*Centaurea stoebe*, UPL), tall goldenrod (*Solidago altissima*, FACU), tansy, quaking aspen, and white spruce (*Picea glauca*, FACU). The uplands lacked wetland hydrology, hydric soil, and hydrophytic vegetation. Therefore, they were not identified as wetland.

3.5 WATERWAYS

No waterways were observed within the Study Area. One waterbody, Lake Superior, is contiguous with the north boundary of the Study Area.

3.6 OTHER ENVIRONMENTAL CONSIDERATIONS

This report is limited to the identification of state and/or federally regulated wetlands and waterways within the Study Area. However, there may be other regulated features within the Study Area, including, but not limited to, historical or archeological features, endangered or threatened species, navigable waters, shoreland zones, and/or floodplains, etc. Federal, state, and local units of government and regional planning organizations may have regulatory authority to control or restrict land uses within or in close proximity to these features.

Specifically, in the state of Wisconsin, Wis. Adm. Code NR 151.12 requires that a “protective area” or buffer be determined from the top of the channel of lakes, streams and rivers, or at the delineated boundary of wetlands. In accordance with NR 151.12, the width of the “protective area” for less susceptible wetlands is determined by using 10% of the average wetland width, no less than 10 feet or more than 30 feet. Moderately susceptible wetlands, lakes, and perennial and intermittent streams identified on USGS topographic maps or NRCS county soil survey maps (whichever is more current) require a protective buffer of 50 feet, and outstanding or exceptional resource waters, highly susceptible wetlands, and wetlands in areas of special natural resource interest require protective buffers of 75 feet. The jurisdictional authority on wetland buffers rests with the WDNR. Local zoning authorities and/or a regional planning organization may have more restrictive buffers from wetlands than that imposed under NR 151.

4.0 CONCLUSION

Stantec performed a wetland determination and delineation on behalf of the C. Reiss Coal Company, LLC within an approximate 53-acre Study Area located in Sections 9 and 16, Township 49 North, Range 14 West, City of Superior, Douglas County, Wisconsin. The purpose and objective of the wetland delineation was to identify wetlands and potentially jurisdictional waterways within the Study Area.

Seven wetlands were identified and delineated within the Study Area in accordance with state and federal guidelines and were subsequently flagged, surveyed with GPS, and mapped using GIS software. There was a combined total of 21.24 acres of wetland within the Study Area. Wetlands were mostly composed of wet meadow, sedge meadow, shrub-carr and hardwood swamp. Adjacent uplands were composed of hardwood forest and fallow field.

The wetlands and waterways identified for this report may be subject to federal regulation under the jurisdiction of USACE, state regulation under the jurisdiction of the WDNR, and local regulation under jurisdiction of the local county, town, city, or village. Stantec recommends this report be submitted to local authorities, the WDNR, and USACE for final jurisdictional review and concurrence.

Prior to beginning work at this site or disturbing or altering wetlands, waterways, or adjacent lands in any way, Stantec recommends that the owner obtain the necessary permits or other agency regulatory review and concurrence with regard to the proposed work to comply with applicable regulations.

The information provided by Stantec regarding wetland boundaries is a scientific-based analysis of the wetland and upland conditions present within the Study Area at the time of the fieldwork. The delineation was performed by experienced and qualified professionals using standard practices and sound professional judgment. The ultimate decision on wetland boundaries rests with the USACE and, in some cases, the WDNR or a local unit of government. As a result, there may be adjustments to boundaries based upon review by a regulatory agency. An agency determination can vary from time to time depending on various factors including, but not limited to recent precipitation patterns and the season of the year. In addition, the physical characteristics of the Study Area can change over time, depending on the weather, vegetation patterns, drainage activities on adjacent parcels, or other events. Any of these factors can change the nature and extent of wetlands within the Study Area.

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Appendix A DELINEATOR QUALIFICATIONS

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
1300 W Clairemont Avenue
Eau Claire, WI 54701

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

March 4, 2019

Matt Knickelbine
Stantec
1165 Scheuring Road
DePere, WI 54115-1001

Subject: 2019 Assured Wetland Delineator Confirmation

Dear Mr. Knickelbine:

This letter provides Wisconsin Department of Natural Resources (WDNR) confirmation for the wetland delineations you conduct during the 2019 growing season. You and your clients will not need to wait for the WDNR to review your wetland delineations before moving forward with project planning. This will help expedite the review process for WDNR's wetland regulatory program. Your name and contact information will continue to be listed on our website at: http://dnr.wi.gov/topic/wetlands/assurance.html.

In the instance where a municipality may require a letter of confirmation for your work prior to moving forward in the local regulatory process, this letter shall serve as that confirmation. Although your wetland delineations do not require WDNR field review, inclusion of a Wetland Delineation Report is required for projects needing State authorized wetland, waterway and/or storm water permit approvals.

If you or any client has a question regarding your status in the Wetland Delineation Professional Assurance Program, contact me by email at travis.holte@wisconsin.gov or phone at 715-839-1638. Thank you for all your hard work and best wishes for the upcoming field season.

Sincerely,

Travis Holte
Interim Wetland Identification Program Coordinator
Bureau of Watershed Management

Matt Knickelbine Assured Wetland

Delineator

Environmental Scientist

Matthew is an environmental scientist in Wisconsin specializing in botany and wetland delineation. He has 5 years of professional consulting experience working with a variety of projects. Matthew is an assured wetland delineator with the Wisconsin DNR Wetland Assurance Program. Matthew's experience includes: Wetland determination and delineation; Botanical surveys; Floristic quality Index, FSA slide review, Ecological restoration; Environmental monitoring; Eagle and raptor survey; Bat habitat, telemetry and emergence surveys; Wildlife survey; and Fish and mussel relocation projects.

EDUCATION

Continuing Education: Hydric Soils, University of Wisconsin - La Crosse, La Crosse, Wisconsin, 2018

Continuing Education: Sedges, Grasses, and Rushes, University of Wisconsin-La Crosse, La Crosse, WI, 2017

Continuing Education: Basic Wetland Delineation, University of Wisconsin - La Crosse, La Crosse, Wisconsin, 2016

Bachelor of Science, Natural Resources (Restoration Ecology), Northland College, Ashland, Wisconsin, 2014

CERTIFICATIONS & TRAINING

Assured Delineator, Wisconsin Department of Natural Resources Wetland Assurance Program, Madison, Wisconsin, 2019

Appendix B FIGURES

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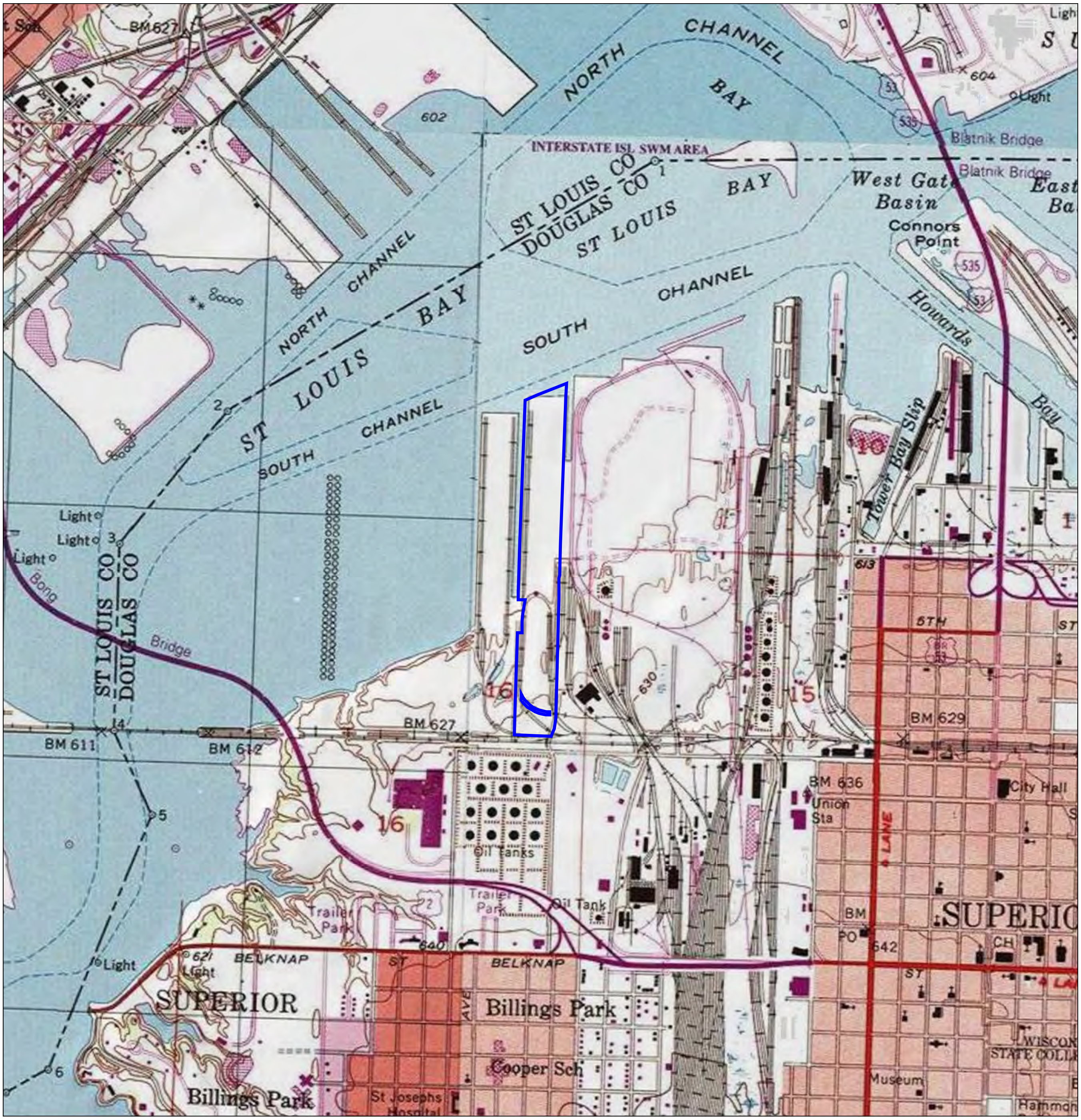


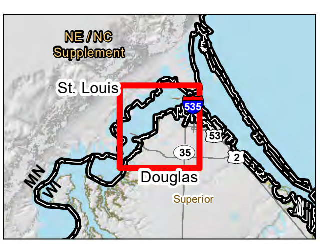
Figure No.
1

Title
Project Location and Topography

Client/Project
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Wetland Delineation

Project Location
T49N, R14W, S09 & S16,
C. of Superior,
Douglas Co., WI

193707141
Prepared by AJS on 2019-09-26
Technical Review by JH on 2019-09-27
Independent Review by MK on 2019-10-28



Legend
Project Boundary

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Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WisDOT, WDNR
3. Background: USGS 7.5' Topographic Quadrangles

Stantec

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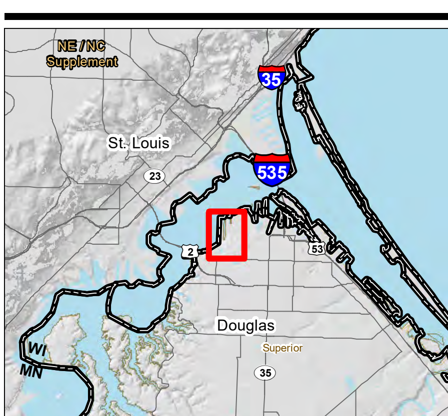

Legend

Project Boundary

NRCS Soil Survey Data Hydric Ratings

- Predominantly Hydric Soil
- Partially Hydric Soil
- Non-Hydric Soil

DNR 24k Hydrography

- Perennial Stream
- Intermittent Stream
- Waterbody

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources Include: Stantec, WisDOT, WDNR, NRCS
3. Orthophotography: 2017 NAIP

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Figure No.
2

Title
NRCS Soil Survey Data Hydric Ratings

Client/Project
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Wetland Delineation

Project Location
T49N, R14W, S09 & S16,
C. of Superior,
Douglas Co., WI

193707141
Prepared by AJS on 2019-09-26
Technical Review by JH on 2019-09-27
Independent Review by MK on 2019-10-28

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Stantec

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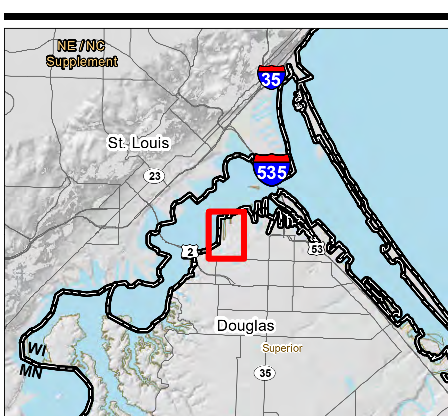

Legend

Project Boundary

NRCS Soil Survey Data*

Drainage Classification

Very Poorly Drained

Poorly Drained

Somewhat Poorly Drained

DNR 24k Hydrography

Perennial Stream

Intermittent Stream

Waterbody

*No Features Within Data Frame

Figure No.

3

Title

NRCS Soil Survey Data
Drainage Classification

Client/Project

The C. Reiss Coal Company, LLC
Reiss Superior Dock
Wetland Delineation

Project Location

193707141

T49N, R14W, S09 & S16,
C. of Superior,
Douglas Co., WI

Prepared by AJS on 2019-09-26
Technical Review by JH on 2019-09-27
Independent Review by MK on 2019-10-28

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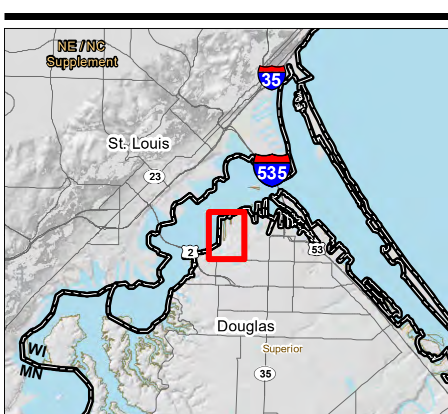
Feet
1:4,800 (At Original document size of 11x17)

Stantec

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources Include: Stantec, WisDOT, WDNR, NRCS
3. Orthophotography: 2017 NAIP



Legend

Project Boundary

WWI Wetland Class Areas

Wetland

WWI Wetland Class Points

Excavated Pond

Wetland Too Small to Delineate

DNR 24k Hydrography

Perennial Stream

Intermittent Stream

Waterbody

Figure No.
4

Title

Wisconsin Wetlands Inventory

Client/Project

The C. Reiss Coal Company, LLC
Reiss Superior Dock
Wetland Delineation

Project Location

T49N, R14W, S09 & S16,
C. of Superior,
Douglas Co., WI

193707141

Prepared by AJS on 2019-09-26
Technical Review by JH on 2019-09-27
Independent Review by MK on 2019-10-28

N

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1:4,800 (At Original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources Include: Stantec, WisDOT, WDNR
3. Orthophotography: 2017 NAIP

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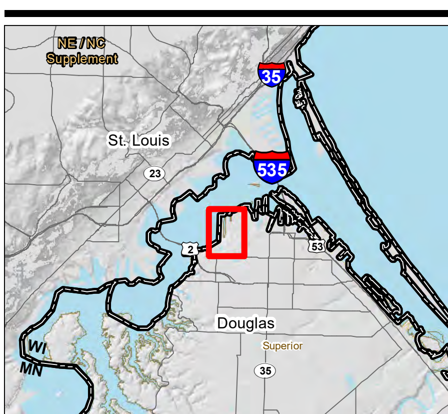


Legend

- Project Boundary
- Sample Point
- Field Delineated Wetland
- 2ft Elevation Contour

DNR 24k Hydrography

- Perennial Stream
- Intermittent Stream
- Waterbody

Figure No.
5

Title
Field Collected Data

Client/Project
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Wetland Delineation

Project Location 193707141
T49N, R14W, S09 & S16, C. of Superior, Douglas Co., WI

Prepared by AJS on 2019-09-26
Technical Review by JH on 2019-09-27
Independent Review by MK on 2019-10-28

N

0 200 400 Feet
1:4,800 (At Original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources Include: Stantec, WisDOT, WDNR
3. Orthophotography: 2017 NAIP

Stantec

Appendix C WETS ANALYSIS

WETS Analysis Worksheet

Project Name: Reiss Superior Dock
Project Number: 193707141
Period of interest: July-September
Station: SUPERIOR (478349)
County: Douglas County, WI

Long-term rainfall records (from WETS table)

	Month	3 years in 10 less than	Normal	3 years in 10 greater than
1st month prior:	September	2.68	4.11	4.94
2nd month prior:	August	2.39	3.76	4.57
3rd month prior:	July	2.6	3.95	4.85
		Sum =	**11.82**	

Site determination

Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
7.34	Wet	3	3	9
2.26	Dry	1	2	2
1.86	Dry	1	1	1
Sum = **11.46**			Sum*** =	**12**

*Normal precipitation with 30% to 70% probability of occurrence

Determination:
____ Wet
____ Dry
X Normal

**Condition value:
Dry = 1
Normal = 2
Wet = 3

***If sum is:
6 to 9 then period has been drier than normal
10 to 14 then period has been normal
15 to 18 then period has been wetter than normal

Precipitation data source: http://agacis.rcc-acis.org/?fips=55031

Reference: Donald E.Woodward, ed. 1997. *Hydrology Tools for Wetland Determination* , Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

WETS Table

WETS Station: SUPERIOR, WI								
Requested years: 1981 - 2010								
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	22.5	5.2	13.9	0.80	0.42	1.02	3	14.3
Feb	26.9	9.5	18.2	0.74	0.38	0.91	2	10.0
Mar	35.7	20.9	28.3	1.50	0.90	1.77	4	9.1
Apr	47.2	31.8	39.5	2.46	1.47	3.10	5	2.3
May	57.8	41.0	49.4	3.13	2.33	3.65	7	0.1
Jun	67.6	49.4	58.5	4.10	2.81	4.76	8	0.0
Jul	75.4	57.7	66.6	3.95	2.60	4.85	7	0.0
Aug	74.4	57.8	66.1	3.76	2.39	4.57	6	0.0
Sep	66.1	49.4	57.8	4.11	2.68	4.94	7	0.0
Oct	53.1	37.9	45.5	3.01	1.70	3.70	6	0.3
Nov	38.9	25.4	32.2	1.99	1.00	2.47	4	6.8
Dec	26.0	11.0	18.5	1.12	0.61	1.36	3	13.3
Annual:					26.10	33.31		
Average	49.3	33.1	41.2	-	-	-	-	-
Total	-	-	-	30.67			63	56.2

GROWING SEASON DATES			
Years with missing data:	24 deg = 6	28 deg = 6	32 deg = 6
Years with no occurrence:	24 deg = 0	28 deg = 0	32 deg = 0
Data years used:	24 deg = 24	28 deg = 24	32 deg = 24
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	4/14 to 10/28: 197 days	4/25 to 10/16: 174 days	5/10 to 10/2: 145 days
70 percent *	4/9 to 11/3: 208 days	4/20 to 10/21: 184 days	5/6 to 10/7: 154 days
* Percent chance of the growing season occurring between the Beginning and Ending dates.			

STATS TABLE - total precipitation (inches)												
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1909	1.08	0.54	M0.40	1.51	2.52	1.93	9.73	4.68	3.52	2.28	2.08	2.34	32.61
1910	0.31	0.36	0.34	1.23	1.06	0.33	3.37	M1.87	4.66	0.80	0.78	0.52	15.63
1911	0.55	1.00	0.96	0.90	4.67	2.75	7.19	3.32	3.25	1.70	M1.35	1.00	28.64
1912	0.14	0.22	M0.34	2.34	5.75	1.37	1.39	3.81	2.28	M0.85	0.15	1.49	20.13
1913	0.17	0.46	1.69	2.19	M7.38	2.06	6.50	1.31	3.48	3.87	0.66	0.13	29.90
1914	M1.89	0.52	1.09	3.73	4.21	6.68	3.31	4.47	2.59	1.39	0.94	0.09	30.91
1915	0.77	1.21	0.22	1.25	4.63	5.01	1.70	1.61	2.87	3.58	4.02	0.60	27.47
1916	2.39	0.36	1.79	4.52	4.62	5.03	0.99	3.26	3.45	1.08	T	0.40	27.89
1917	0.27	0.52	2.95	1.12	0.86	2.41	4.77	1.25	3.25	3.21	0.07	0.50	21.18

1918	0.92	0.22	0.29	1.99	4.02	1.63	1.49	2.12	1.49	2.73	2.32	2.27	21.49
1919	0.39	0.89	0.98	2.14	1.75	4.53	2.29	2.74	M1.31	3.40	M3.68	M0.12	24.22
1920	1.06	0.23	1.99	2.03	4.73	6.08	3.52	1.12	1.60	5.15	1.64	1.07	30.22
1921	0.41	0.50	2.14	2.26	3.00	4.94	4.01	M2.17	3.54	0.63	0.66	0.61	24.87
1922	0.34	2.71	1.92	2.87	4.03	2.99	4.12	2.13	2.87	0.59	2.62	1.07	28.26
1923	1.43	0.12	1.13	1.02	2.10	4.00	4.57	1.29	2.09	0.30	0.34	0.65	19.04
1924	0.12	0.42	0.34	3.25	3.40	3.25	4.64	5.50	5.79	1.19	0.69	0.75	29.34
1925	0.14	0.40	0.86	1.13	1.64	3.24	M3.26	2.85	3.57	1.19	0.42	0.65	19.35
1926	M0.21	0.91	1.91	0.58	1.55	4.08	1.90	4.13	6.95	M2.70	2.16	2.11	29.19
1927	0.38	1.07	1.42	3.25	4.39	4.52	5.19	1.50	3.89	1.05	2.00	1.41	30.07
1928	0.40	0.20	0.60	2.32	1.29	5.77	6.81	5.20	3.90	2.77	0.17	1.04	30.47
1929	1.22	0.40	1.59	1.63	2.84	2.70	2.75	0.98	5.27	1.42	1.33	0.95	23.08
1930	0.49	1.52	0.33	1.34	4.50	3.72	1.43	0.20	4.87	1.49	2.77	0.28	22.94
1931	0.18	0.47	1.35	0.79	3.78	5.92	1.57	4.84	3.46	2.72	3.40	0.26	28.74
1932	1.11	0.36	0.42	2.45	3.99	2.04	1.95	3.41	0.52	1.91	3.90	0.52	22.58
1933	0.49	0.66	0.59	2.18	3.27	2.38	5.68	0.77	4.62	4.20	0.95	1.68	27.47
1934	0.81	0.37	0.68	1.43	2.76	3.73	1.88	2.48	4.27	5.18	2.37	1.79	27.75
1935	2.13	0.33	2.85	1.96	2.86	3.55	5.86	6.72	2.08	2.32	1.99	0.96	33.61
1936	1.44	0.82	2.56	1.16	5.80	1.22	0.58	3.17	1.87	1.74	2.07	2.31	24.74
1937	1.45	1.11	0.30	4.55	6.25	3.25	3.54	5.46	5.23	1.64	1.32	M0.69	34.79
1938	1.25	0.86	3.20	6.66	7.42	3.46	2.73	1.27	4.06	0.79	2.33	0.93	34.96
1939	1.83	M1.59	1.10	M1.42	2.07	4.90	1.70	6.81	0.63	2.17	0.19	0.17	24.58
1940	0.29	1.03	1.78	3.45	5.31	2.74	3.38	2.40	1.82	2.73	3.10	0.62	28.65
1941	1.35	1.03	0.93	3.72	3.34	6.00	2.42	5.25	6.42	1.83	0.47	M0.51	33.27
1942	0.31	0.29	M2.81	2.09	6.43	3.58	4.14	4.22	M2.00	1.23	0.86	1.17	29.13
1943	1.08	0.58	1.40	1.95	4.00	7.43	2.32	5.33	1.70	2.16	1.62	0.14	29.71
1944	0.79	1.25	1.75	1.84	6.93	7.13	2.88	5.50	2.84	0.46	2.69	0.32	34.38
1945	0.89	1.44	3.79	3.86	1.33	5.12	5.40	4.80	3.95	0.66	1.46	1.11	33.81
1946	1.61	1.00	1.28	1.69	4.15	3.37	0.86	0.84	5.46	5.60	1.54	M1.41	28.81
1947	0.12	M0.28	M0.20	4.24	M1.47	3.10	1.12	3.05	M1.74	1.24	M1.68	0.22	18.46
1948	M0.63	0.92	1.92	M4.44	0.60	4.26	2.79	1.76	0.39	0.51	2.75	0.97	21.94
1949	1.97	0.37	1.94	0.70	4.51	2.89	8.57	2.49	1.70	5.80	1.14	2.10	34.18
1950	1.51	0.75	1.72	M1.97	6.96	2.30	3.42	1.43	1.59	4.80	1.57		28.02
1951	0.48	1.51	1.28	2.29	4.37	6.08	5.26	3.58	7.00	3.72	1.04	M0.73	37.34

1952	0.73	0.18	M1.16	M0.50	M1.37	2.15	M9.99	6.53	0.46	0.28	1.46	0.10	24.91
1953	1.55	0.77	1.91		4.80	6.43	M4.20	M4.35	0.40	T	2.20		26.61
1954	M1.05	0.75	M0.45	4.38	M3.62	M3.60	M2.65	2.86	3.43	1.13	0.54	0.30	24.76
1955	1.25		2.35	1.00	1.97	4.95	M9.13	3.58	2.50	1.94	1.52	1.59	31.78
1956	0.67	0.55	0.82	1.67	2.98	1.99	1.41	5.66	2.02	2.40	0.83		21.00
1957	0.13	1.43	0.65	1.77	3.10	4.71	6.07	1.35	3.90	1.18	1.88	0.45	26.62
1958	0.94	0.20	0.90	1.05	3.19	3.05	9.43	5.37	4.44	1.61	2.25	0.57	33.00
1959	0.31	0.19	0.30	0.52	4.36	2.73	2.19	4.54	4.96	2.00	0.70	1.58	24.38
1960	1.52	0.82	0.17	5.13	3.63	2.77	1.82	5.85	2.17	1.55	3.42	0.77	29.62
1961	0.20	1.20	2.92	6.37	5.69	0.58	2.45	1.82	3.89	0.98	1.53	1.02	28.65
1962	0.88	1.77	0.30	1.11	4.58	2.34	2.22	3.87	2.06	0.84	0.31	0.17	20.45
1963	0.06	1.48	1.41	1.99	2.32	3.45	2.20	2.76	1.58	0.51	1.12	1.13	20.01
1964	0.95	0.68	0.93	2.63	5.00	2.21	0.86	7.04		0.23	1.48	1.80	23.81
1965	0.54	0.92	2.89	2.58	3.00	2.63	3.20	2.84	5.87	1.89	3.43	1.70	31.49
1966	0.60		2.35	1.84	1.20	2.83	5.43	7.29	1.26	2.32	0.95	0.56	26.63
1967	1.07		M0.08	M0.42				M1.12	0.87	1.52	0.26	M0.73	6.07
1968	0.50	0.05	2.39	4.27	3.73	6.83	4.67		3.49	4.85	1.24	1.74	33.76
1969	3.14	0.12	0.29	1.88	2.09	2.18	1.80	2.22	3.33	2.68	0.90	1.57	22.20
1970	0.28	0.18		2.33	3.85	2.58	3.61	1.02	1.92	4.66	3.06	1.18	24.67
1971	0.91	1.70	1.57	0.47	3.77	2.99	3.35	4.18	3.30	5.91	2.46	0.88	31.49
1972	1.07	0.54	1.24	2.33	3.31	4.30	5.92	8.63	5.17	1.33	1.30	0.82	35.96
1973	0.68	0.12	1.91	1.23	3.00	2.98	2.11	7.45	3.73	3.92	2.03	0.68	29.84
1974	0.72	M0.25	0.47	1.53	3.73	4.55	3.40	3.99	0.85	1.03	2.34	0.88	23.74
1975	3.03	0.50	2.95	2.48	1.23	6.51	2.13	2.34	2.95	1.08	3.45	0.66	29.31
1976	1.33	0.65		0.47	0.29	4.82	2.49	2.58	1.43	0.34	0.16	0.33	14.89
1977	0.34	1.36	8.38	1.91	3.95	3.14	4.97	3.70	6.16	2.73	1.97	1.25	39.86
1978	0.69	0.32	1.00	2.50	3.74	2.87	6.92	5.72	2.61	0.55	1.51	1.03	29.46
1979	1.05	1.59	4.51	1.03	6.01	3.69	6.21	1.61	4.55	3.29	M0.17	0.08	33.79
1980	1.60	0.45	0.69	0.40	0.84	3.46	2.96	5.10	4.99	1.42	0.81	0.71	23.43
1981	0.11	2.20	1.74	5.03	1.32	5.94	4.11	3.44	3.66	3.54	0.66	1.15	32.90
1982	1.27	0.39	1.98	1.59	4.07	2.35	8.37	1.07	4.24	6.38	2.56	2.82	37.09
1983	0.70	0.17	2.56	2.66	M1.78	1.76	3.03	4.28	4.75	3.04	4.81	1.69	31.23
1984	M0.40	1.16	0.37	2.52	2.11	6.58	1.06	1.56	6.05	M4.96	0.74	M1.91	29.42
1985	0.46	0.58	1.71	3.17	4.88	3.00	4.25	4.82	8.14	2.06	2.91	1.00	36.98

1986	0.41	1.81	1.19	4.64	3.65	7.92	4.76	6.60	6.72	0.98	1.53	0.47	40.68
1987	0.64	0.21	1.00	0.25	4.79	0.98	4.80	1.59	1.95	0.63	M2.04	M0.66	19.54
1988	M1.48	0.09	M1.20	0.57	2.70	3.61	0.72	6.96	6.43	0.66	1.76	1.17	27.35
1989	2.32	0.13	1.26	1.49	3.01	2.39	1.23	4.62	3.04	0.88	0.78	0.49	21.64
1990	0.31	0.36	2.98	M3.63	1.85	3.51		6.36	6.36	3.42	0.57	0.57	29.92
1991	0.83	0.82	M1.70	3.71	6.74	5.21	8.98	2.98	8.46	M1.71	4.50	0.88	46.52
1992	0.26	M0.48	1.68	3.20	1.93	4.75	4.84	4.15	3.44	2.46	3.55	M1.67	32.41
1993	2.42	0.74	M0.44	2.92	5.97	6.71	4.90	4.61	2.37	0.32	4.43	1.23	37.06
1994	0.98	0.53	1.85	4.96	2.78	3.01	1.87	2.65	5.24	1.36	2.34	0.51	28.08
1995	M1.01	0.80	2.24	M2.33	3.87	1.97	5.06	6.64	3.02	4.87	1.38	1.11	34.30
1996	2.26	1.09	0.47	1.91	1.73		6.95	2.19	5.67	4.03	4.55	1.19	32.04
1997	0.98	0.33	0.67	0.86	1.51	3.29	4.73	2.23	1.89	1.22	0.36	0.08	18.15
1998	0.90	2.07	2.51	0.99	2.83	4.95	1.87	2.73	2.87	2.93	2.73	1.20	28.58
1999	0.50	0.35	0.40	2.49	2.48	5.09	8.53	4.67	4.89	3.09	0.72	0.03	33.24
2000	0.63	1.50	1.93	0.84	2.67	3.96	2.62	3.94	1.37	1.15	3.99	M0.57	25.17
2001	M0.82	1.08	0.52	7.71	3.70	2.93	1.92	2.98	1.31	2.59	1.54	0.70	27.80
2002	0.33	0.70	0.78	2.93	2.14	4.56	4.99	5.47	4.33	2.59	0.07	0.47	29.36
2003	0.06	0.08	0.80	1.15	2.91	3.40	3.86	1.50	2.81	1.43	0.90	0.41	19.31
2004	0.58	1.10	1.61	1.61	4.32	1.60	4.73	3.62	4.14	3.89	0.38	1.74	29.32
2005	1.86	0.67	0.48	M1.76	3.30	6.83	1.87	M0.64	3.41	7.98	3.67	0.93	33.40
2006	0.39	0.61	1.53	1.47	3.22	2.37	4.32	0.64	2.82	1.91	1.56	1.79	22.63
2007	0.11	0.54	2.81		3.25	2.24	2.05		6.55	7.76	0.47	1.84	27.62
2008		MT	0.73	4.27	3.97	5.75	3.55	2.81	M0.07	3.26	1.69	1.16	27.26
2009	0.29	0.77	4.04	0.77	1.07	2.18	M2.50	5.23	0.34	5.82	1.14	1.86	26.01
2010	0.92	0.28	0.75	M0.36	3.00	7.35	2.96	8.89	2.94	4.13	M2.25	M2.14	35.97
2011	0.83	0.11	0.73	2.64	2.44	4.64	5.89	5.68	0.95	1.18	0.59	0.48	26.16
2012	M0.22	0.92	1.77	4.64	8.22	12.24	2.27	1.91	0.83	2.55	2.72	0.85	39.14
2013	1.10	1.58	1.66	M3.03	4.37	5.56	1.20	2.81	1.08	4.53	2.84	2.15	31.91
2014	0.35	0.96	M2.27	5.00	4.76	5.11	2.38	6.90	M2.20	M1.87	M0.69	1.08	33.57
2015	0.57	M0.90	1.45	1.44	4.08	3.03	2.92	M5.40	M6.73	M2.51	3.41	2.99	35.43
2016	0.72	M0.45	4.24	M3.41	1.97	4.58	M4.84	3.53	M3.42	1.58	2.40	1.86	33.00
2017	1.16	1.58	0.86	3.00	M3.98	M2.35	3.38	8.69	3.23	4.36	0.54	M0.24	33.37
2018	1.11	2.29	M0.17	M1.36	M2.76	8.46	2.75	4.01	3.45	5.92	3.54	1.87	37.69
2019	0.62	2.11	1.32	2.35	4.00	4.46	1.86	2.26	M7.34	M1.47			27.79

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.
Data missing for all days in a month or year is blank.
Creation date: 2016-07-22

Appendix D WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W1-1u

Investigator(s): Matt Knickelbine Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Side slope Local relief (concave, convex, none): Convex Slope %: 2-6

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 262B: Amnicon-Cuttre complex, 0 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation ___, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ___

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located on a fallow road shoulder. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in september, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of wetland hydrology was observed at the sample plot.

VEGETATION – Use scientific names of plants.

Sampling Point: W1-1u

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size:)			
1. *Poa pratensis*	50	Yes	FACU
2. *Tanacetum vulgare*	40	Yes	FACU
3. *Solidago altissima*	30	No	FACU
4. *Bromus inermis*	30	No	UPL
5. *Asclepias syriaca*	10	No	UPL
6. *Cirsium canescens*	5	No	UPL
7. *Lotus corniculatus*	5	No	FACU
8.			
9.			
10.			
11.			
12.			
	170	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	125	x 4 =	500
UPL species	45	x 5 =	225
Column Totals:	170 (A)		725 (B)

Prevalence Index = B/A = 4.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the 50/20 rule. Vegetation at the sample plot is not hydrophytic.

SOIL

Sampling Point W1-1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	5YR 3/2	100					Loamy/Clayey	
2-16	5YR 3/3	90					Sandy	Sand with gravel and black clay loam
	10YR 2/1	10						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. Refusal at 16 inches due to rocks. Soil appears to be fill from the nearby railroad/road and is mixed. The soil at the sample plot does not have any field indicators of hydric soil, nor does it appear to be inundated or saturated to the surface for long periods of time during the growing season in most years.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W1-1w

Investigator(s): Matt Knickelbine Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 262B: Amnicon-Cuttre complex, 0 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area**	
Hydric Soil Present?	Yes X No ___	**within a Wetland?**	**Yes** X **No** ___
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a wet meadow. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in september, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
X High Water Table (A2)	___ Aquatic Fauna (B13)
X Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The presence of 2 primary and 2 secondary indicators at the sample plot provides evidence of wetland hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: W1-1w

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	2	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	2	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size:)			
1. *Calamagrostis canadensis*	70	Yes	OBL
2. *Carex stricta*	40	Yes	OBL
3. *Symphyotrichum puniceum*	10	No	OBL
4. *Solidago gigantea*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	125	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	120	x 1 =	120
FACW species	5	x 2 =	10
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	127 (A)		136 (B)

Prevalence Index = B/A = 1.07

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** __

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the rapid test. Vegetation at the sample plot is hydrophytic.

SOIL

Sampling Point W1-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR 2/1	88	10YR 4/6	2	C	M	Mucky Loam/Clay	Mucky loam
	5YR 3/3	10						clay, mixed in

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)

___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L**)
X Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. The soil at the sample plot meets the F1 and F6 Indicators.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock   City/County: Douglas   Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC   State: WI   Sampling Point: W1-2w

Investigator(s): Matt Knickelbine   Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Depression   Local relief (concave, convex, none): Concave   Slope %: 0-2

Subregion (LRR or MLRA): LRR K   Lat: N/A   Long: N/A   Datum: N/A

Soil Map Unit Name: 262B: Amnicon-Cuttre complex, 0 to 4 percent slopes   NWI classification: Wetland too small to delineate

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a hardwood swamp. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in september, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 9
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 9

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The water table appears to be perched over a clay loam layer of soil at 9 inches. The presence of 2 primary and 3 secondary indicators at the sample plot provides evidence of wetland hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: W1-2w

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	80	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Populus tremuloides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size:)			
1. *Calamagrostis canadensis*	20	Yes	OBL
2. *Solidago gigantea*	20	Yes	FACW
3. *Equisetum arvense*	5	No	FAC
4. *Viola sororia*	5	No	FAC
5. *Poa pratensis*	5	No	FACU
6. *Lycopus uniflorus*	5	No	OBL
7. *Acer negundo*	2	No	FAC
8.			
9.			
10.			
11.			
12.			
	62	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	20	x 2 =	40
FAC species	97	x 3 =	291
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	147 (A)		376 (B)

Prevalence Index = B/A = 2.56

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the 50/20 rule. Vegetation at the sample plot is hydrophytic.

SOIL

Sampling Point W1-2w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/1	100					Mucky Loam/Clay	Mucky loam
9-18	10YR 4/2	90	10YR 4/6	10	C	M	Loamy/Clayey	clay loam
18-24	7.5YR 3/4	100					Loamy/Clayey	clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
X Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
X Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Clay loam

Depth (inches): 9

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. The soil at the sample plot meets the A11, F1 and F3 Indicators.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W2-1u

Investigator(s): Matt Knickelbine Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Side slope Local relief (concave, convex, none): Concave Slope %: 2-6

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 262B: Amnicon-Cuttre complex, 0 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation ___, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	If yes, optional Wetland Site ID: ___

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a hardwood forest. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in september, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 8

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of wetland hydrology was observed at the sample plot.

VEGETATION – Use scientific names of plants. Sampling Point: W2-1u

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Populus tremuloides*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size:)			
1. *Poa pratensis*	30	Yes	FACU
2. *Bromus inermis*	15	Yes	UPL
3. *Calamagrostis canadensis*	7	No	OBL
4. *Equisetum arvense*	5	No	FAC
5. *Fragaria virginiana*	5	No	FACU
6. *Daucus carota*	2	No	UPL
7. *Symphyotrichum puniceum*	2	No	OBL
8.			
9.			
10.			
11.			
12.			
	66	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	9	x 1 =	9
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	35	x 4 =	140
UPL species	17	x 5 =	85
Column Totals:	116 (A)		399 (B)

Prevalence Index = B/A = 3.44

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the 50/20 rule. Vegetation at the sample plot is not hydrophytic.

SOIL

Sampling Point W2-1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Loamy/Clayey	loam
3-24	10YR 2/1	100					Loamy/Clayey	Coal and Rocks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. Soil are disturbed and apper to consist mostly of coal. The soil at the sample plot does not have any field indicators of hydric soil, nor does it appear to be inundated or saturated to the surface for long periods of time during the growing season in most years. Due to the disturbed nature of the black soil color, thick dark surface is not considered to be met.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W2-1w

Investigator(s): Matt Knickelbine Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 262B: Amnicon-Cuttre complex, 0 to 4 percent slopes NWI classification: Wetland too small to delineate

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?**	**Yes** X **No** ___
Hydric Soil Present?	Yes X No ___	If yes, optional Wetland Site ID:	
Wetland Hydrology Present?	Yes X No ___		

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a hardwood swamp. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in September, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	X Water-Stained Leaves (B9)
X High Water Table (A2)	___ Aquatic Fauna (B13)
X Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The presence of 3 primary and 3 secondary indicators at the sample plot provides evidence of wetland hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: W2-1w

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	50	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Populus tremuloides*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size:)			
1. *Calamagrostis canadensis*	70	Yes	OBL
2. *Solidago gigantea*	10	No	FACW
3. *Rubus idaeus*	5	No	FAC
4. *Doellingeria umbellata*	5	No	FACW
5. *Scirpus atrovirens*	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	75	x 1 =	75
FACW species	15	x 2 =	30
FAC species	65	x 3 =	195
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	155 (A)		300 (B)

Prevalence Index = B/A = 1.94

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the 50/20 rule. Vegetation at the sample plot is hydrophytic.

SOIL

Sampling Point W2-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/1	100					Mucky Loam/Clay	Mucky loam
9-20	10YR 4/3	95	10YR 4/6	5	C	M	Loamy/Clayey	silt loam
20-24	5YR 3/4	100					Loamy/Clayey	clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)

___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
X Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Clay loam

Depth (inches): 20

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. The soil at the sample plot meets the F1 Indicator.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W3-1u

Investigator(s): Matt Knickelbine Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Side slope Local relief (concave, convex, none): Concave Slope %: 2-6

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 262B: Amnicon-Cuttre complex, 0 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____ No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a fallow field. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in september, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of wetland hydrology was observed at the sample plot.

VEGETATION – Use scientific names of plants. Sampling Point: W3-1u

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	2	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	2	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Populus tremuloides*	2	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	2	=Total Cover	
Herb Stratum (Plot size:)			
1. *Tanacetum vulgare*	70	Yes	FACU
2. *Bromus inermis*	30	Yes	UPL
3. *Asclepias syriaca*	30	Yes	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	130	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	4	x 3 =	12
FACU species	70	x 4 =	280
UPL species	60	x 5 =	300
Column Totals:	134 (A)		592 (B)

Prevalence Index = B/A = 4.42

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the 50/20 rule. Vegetation at the sample plot is not hydrophytic.

SOIL

Sampling Point W3-1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	100					Loamy/Clayey	loamy coal
12-20	7.5YR 4/4	100					Loamy/Clayey	clay loam with rocks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L**)
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): ____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. Soil are disturbed and apper to contain coal in the top 12 inches. The soil at the sample plot does not have any field indicators of hydric soil, nor does it appear to be inundated or saturated to the surface for long periods of time during the growing season in most years.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W3-1w

Investigator(s): Matt Knickelbine Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Toeslope Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 262B: Amnicon-Cuttre complex, 0 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a sedge meadow. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in September, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
X High Water Table (A2)	___ Aquatic Fauna (B13)
X Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
X Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The presence of 2 primary and 3 secondary indicators at the sample plot provides evidence of wetland hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: W3-1w

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size:)			
1. *Carex lacustris*	40	Yes	OBL
2. *Carex stricta*	40	Yes	OBL
3. *Calamagrostis canadensis*	40	Yes	OBL
4. *Phalaris arundinacea*	30	Yes	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	150	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	120	x 1 =	120
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	150 (A)		180 (B)

Prevalence Index = B/A = 1.20

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the Rapid Test. Vegetation at the sample plot is hydrophytic.

SOIL

Sampling Point W3-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/1	100					Mucky Peat	
18-24	10YR 4/2	90	10YR 4/6	10	C	M	Loamy/Clayey	clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

X Histosol (A1)
X Histic Epipedon (A2)
X Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
X Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L**)
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: clay

Depth (inches): 18

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. The soil at the sample plot meets the A1, A2, A3, and A12 Indicators.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W4-1u

Investigator(s): Matt Knickelbine Section, Township, Range: S9, T49N, R14W

Landform (hillside, terrace, etc.): side slope Local relief (concave, convex, none): linear Slope %: 1-2

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 262B: Amnicon-Cuttre complex, 0 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ___ No X
Hydric Soil Present? Yes ___ No X
Wetland Hydrology Present? Yes ___ No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X
If yes, optional Wetland Site ID: ___

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a fallow field on a concrete dock. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in september, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___
Water Table Present? Yes ___ No X Depth (inches): ___
Saturation Present? Yes ___ No X Depth (inches): ___
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of wetland hydrology was observed at the sample plot.

VEGETATION – Use scientific names of plants.

Sampling Point: W4-1u

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Populus tremuloides*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size:)			
1. *Poa pratensis*	80	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	90 (A)		350 (B)

Prevalence Index = B/A = 3.89

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the 50/20 rule. Vegetation at the sample plot is not hydrophytic.

SOIL

Sampling Point W4-1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: concrete

Depth (inches): 0

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. No soils could be collected because of refusal due to concrete at the surface. The soil is assumed to be non-hydric because the impervious surface does not support wetland hydrology and hydrophytic vegetation.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W4-1w

Investigator(s): Matt Knickelbine Section, Township, Range: S9, T49N, R14W

Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): none Slope %: 0-2

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 2030: Udorthents and Udipsamments, cut or fill NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present?	Yes X No ___	If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes X No ___	

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a shrub-carr on a concrete dock with standing water and hydrophytic vegetation. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in September, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

X Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
X Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 4
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The presence of 1 primary and 3 secondary indicators at the sample plot provides evidence of wetland hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: W4-1w

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Salix interior*	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size:)			
1. *Calamagrostis canadensis*	30	Yes	OBL
2. *Carex stricta*	10	Yes	OBL
3. *Equisetum hyemale*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	40	x 2 =	80
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		135 (B)

Prevalence Index = B/A = 1.59

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the Rapid Test. Vegetation at the sample plot is hydrophytic.

SOIL

Sampling Point W4-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: concrete

Depth (inches): 0

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. No soils could be collected because of refusal at the surface due to concrete. Hydric soils are considered to be met because the impervious surface supports hydrophytic vegetation and wetland hydrology.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W4-2w

Investigator(s): Matt Knickelbine Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Toeslope Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 2030: Udorthents and Udipsamments, cut or fill NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a wet meadow. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in September, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

X Surface Water (A1)	___ Water-Stained Leaves (B9)	
X High Water Table (A2)	___ Aquatic Fauna (B13)	
X Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 1
Water Table Present?	Yes X	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The presence of 3 primary and 3 secondary indicators at the sample plot provides evidence of wetland hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: W4-2w

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Sapling/Shrub Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Herb Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juncus effusus*	40	Yes	OBL
2. *Typha angustifolia*	30	Yes	OBL
3. *Persicaria amphibia*	20	No	OBL
4. *Equisetum hyemale*	15	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	=Total Cover	

Woody Vine Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	90	x 1 =	90	
FACW species	0	x 2 =	0	
FAC species	15	x 3 =	45	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	105	(A)	135	(B)

Prevalence Index = B/A = 1.29

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** __

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the Rapid Test. Vegetation at the sample plot is hydrophytic.

SOIL

Sampling Point W4-2w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10YR 2/1	100					Mucky Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- X Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: concrete

Depth (inches): 6

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. Refusal due to concrete at 6 inches. The soil at the sample plot meets the S1 and S7 Indicators.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W5-1u

Investigator(s): Matt Knickelbine Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Shoulder Local relief (concave, convex, none): Convex Slope %: 2-6

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 2030: Udorthents and Udipsamments, cut or fill NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation ___, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes** ___ **No** X
Hydric Soil Present?	Yes	No X		
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a fallow field. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in september, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of wetland hydrology was observed at the sample plot.

VEGETATION – Use scientific names of plants.

Sampling Point: W5-1u

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Sapling/Shrub Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	30	Yes	FAC
2. *Picea glauca*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	

Herb Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Solidago altissima*	30	Yes	FACU
2. *Poa pratensis*	20	Yes	FACU
3. *Solidago gigantea*	10	No	FACW
4. *Fragaria virginiana*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	=Total Cover	

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	30	x 3 =	90
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals:	110 (A)		390 (B)

Prevalence Index = B/A = 3.55

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the 50/20 rule. Vegetation at the sample plot is not hydrophytic.

SOIL

Sampling Point W5-1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Loamy/Clayey	sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: N/A
Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. Refusal at 4 inches due to gravel. The soil at the sample plot does not have any field indicators of hydric soil, nor does it appear to be inundated or saturated to the surface for long periods of time during the growing season in most years.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W5-1w

Investigator(s): Matt Knickelbine Section, Township, Range: S9, T49N, R14W

Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): none Slope %: 0-2

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 2030: Udorthents and Udipsamments, cut or fill NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID: ___

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a shrub-carr on a concrete dock with standing water and hydrophytic vegetation. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in September, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

X Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 2
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The presence of 1 primary and 3 secondary indicators at the sample plot provides evidence of wetland hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: W5-1w

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Salix interior*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size:)			
1. *Equisetum hyemale*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		240 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the 50/20 rule. Vegetation at the sample plot is hydrophytic.

SOIL

Sampling Point W5-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L**)
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: concrete

Depth (inches): 0

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. No soils could be collected because of refusal at the surface due to concrete. Hydric soils are considered to be met because the impervious surface supports hydrophytic vegetation and wetland hydrology.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W5-2w

Investigator(s): Matt Knickelbine Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 2030: Udorthents and Udipsamments, cut or fill NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation ___, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___		**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present? Yes X No ___		If yes, optional Wetland Site ID: ___
Wetland Hydrology Present? Yes X No ___		

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a wet meadow. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in September, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 2
Water Table Present?	Yes X	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The presence of 3 primary and 3 secondary indicators at the sample plot provides evidence of wetland hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: W5-2w

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Juncus effusus*	70	Yes	OBL
2. *Carex scoparia*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		90 (B)

Prevalence Index = B/A = 1.13

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the Rapid Test. Vegetation at the sample plot is hydrophytic.

SOIL

Sampling Point W5-2w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Mucky Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
X Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
X Dark Surface (S7)

___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: concrete

Depth (inches): 4

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. Refusal due to concrete at 4 inches. The soil at the sample plot meets the S1 and S7 Indicators.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W6-1u

Investigator(s): Matt Knickelbine Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Side slope Local relief (concave, convex, none): Convex Slope %: 2-6

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 262B: Amnicon-Cuttre complex, 0 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation ___, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

If yes, optional Wetland Site ID: ___

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a fallow field. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in september, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of wetland hydrology was observed at the sample plot.

VEGETATION – Use scientific names of plants.

Sampling Point: W6-1u

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size:)			
1. *Poa pratensis*	80	Yes	FACU
2. *Centaurea stoebe*	30	Yes	UPL
3. *Securigera varia*	25	No	UPL
4. *Melilotus officinalis*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	140	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	85	x 4 =	340	
UPL species	55	x 5 =	275	
Column Totals:	140	(A)	615	(B)

Prevalence Index = B/A = 4.39

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the 50/20 rule. Vegetation at the sample plot is not hydrophytic.

SOIL

Sampling Point W6-1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Loamy/Clayey	sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. Refusal due to gravel at 3 inches. The soil at the sample plot does not have any field indicators of hydric soil, nor does it appear to be inundated or saturated to the surface for long periods of time during the growing season in most years.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock   City/County: Douglas   Sampling Date: 10/1/19

Applicant/Owner: The C. Reiss Coal Company, LLC   State: WI   Sampling Point: W6-1w

Investigator(s): Matt Knickelbine   Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Depression   Local relief (concave, convex, none): Concave   Slope %: 0-2

Subregion (LRR or MLRA): LRR K   Lat: N/A   Long: N/A   Datum: N/A

Soil Map Unit Name: 262B: Amnicon-Cuttre complex, 0 to 4 percent slopes   NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil X, or Hydrology X significantly disturbed?   Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic?   (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X No ____	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes X No ____	

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a small hardwood swamp depression. The soil is disturbed and consists of coal. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in September, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- X Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 20
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 19

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The presence of 3 secondary indicators at the sample plot provides evidence of wetland hydrology. Hydrology appears to be present due to the presence of a nearby road with no culvert interrupting the natural surfacewater flow pattern.

VEGETATION – Use scientific names of plants.

Sampling Point: W6-1w

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	60	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size:)			
1. *Scirpus atrovirens*	25	Yes	OBL
2. *Poa pratensis*	25	Yes	FACU
3. *Calamagrostis canadensis*	10	No	OBL
4. *Solidago canadensis*	10	No	FACU
5. *Equisetum arvense*	5	No	FAC
6. *Lycopus uniflorus*	2	No	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	77	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	37	x 1 =	37
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	137 (A)		372 (B)

Prevalence Index = B/A = 2.72

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the 50/20 rule. Vegetation at the sample plot is hydrophytic.

SOIL

Sampling Point W6-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR 2/1	100						Coal

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L**)
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. The soil is disturbed and made of coal material and it is difficult to determine if it meets an indicator or not. Hydric soils are assumed due to the presence of wetland hydrology and hydrophytic vegetation.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Reiss Superior Dock City/County: Douglas Sampling Date: 10/2/19

Applicant/Owner: The C. Reiss Coal Company, LLC State: WI Sampling Point: W7-1w

Investigator(s): Matt Knickelbine Section, Township, Range: S16, T49N, R14W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K Lat: N/A Long: N/A Datum: N/A

Soil Map Unit Name: 262B: Amnicon-Cuttre complex, 0 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation ___, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?**	**Yes** X **No** ___
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)
The sample plot is located in a shrub carr. The soil is disturbed and consists of coal. WETS analysis determined that the antecedent precipitation conditions were normal, however, more than 7 inches of rain was recorded in September, and 1.7 inches fell last night, so current site conditions are abnormally wet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- X Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):
Water Table Present?	Yes X	No ___	Depth (inches): 24
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 20

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The presence of 2 secondary indicators at the sample plot provides evidence of wetland hydrology. Hydrology appears to be present due to the presence of a nearby road interrupting the natural surfacewater flow pattern.

VEGETATION – Use scientific names of plants.

Sampling Point: W7-1w

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	60	Yes	FAC
2. *Betula papyrifera*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Alnus incana*	70	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	70	=Total Cover	
Herb Stratum (Plot size:)			
1. *Agrostis gigantea*	30	Yes	FACW
2. *Poa pratensis*	15	Yes	FACU
3. *Equisetum arvense*	5	No	FAC
4. *Solidago gigantea*	5	No	FACW
5. *Fragaria virginiana*	2	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	57	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	105	x 2 =	210
FAC species	65	x 3 =	195
FACU species	37	x 4 =	148
UPL species	0	x 5 =	0
Column Totals:	207 (A)		553 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant vegetation was determined through use of the 50/20 rule. Vegetation at the sample plot is hydrophytic.

SOIL

Sampling Point W7-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR 2/1	100						Coal

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soils were cross referenced with Field Indicators of Hydric Soils in the United States, Version 8.2. The soil is disturbed and made of coal material and it is difficult to determine if it meets an indicator or not. Hydric soils are assumed due to the presence of wetland hydrology and hydrophytic vegetation.

Appendix E SITE PHOTOGRAPHS

Photo 1. Lake Superior high-water mark, view southeast.

Photo 2. Sample Point W1-1u, view east.

Photo 3. Sample Point W1-1w, view north.

Photo 4. Sample Point W1-2w, view south.

Photo 5. Sample Point W2-1u, view east.

Photo 6. Sample Point W2-1w, view north.

Photo 7. Sample Point W3-1u, view north.

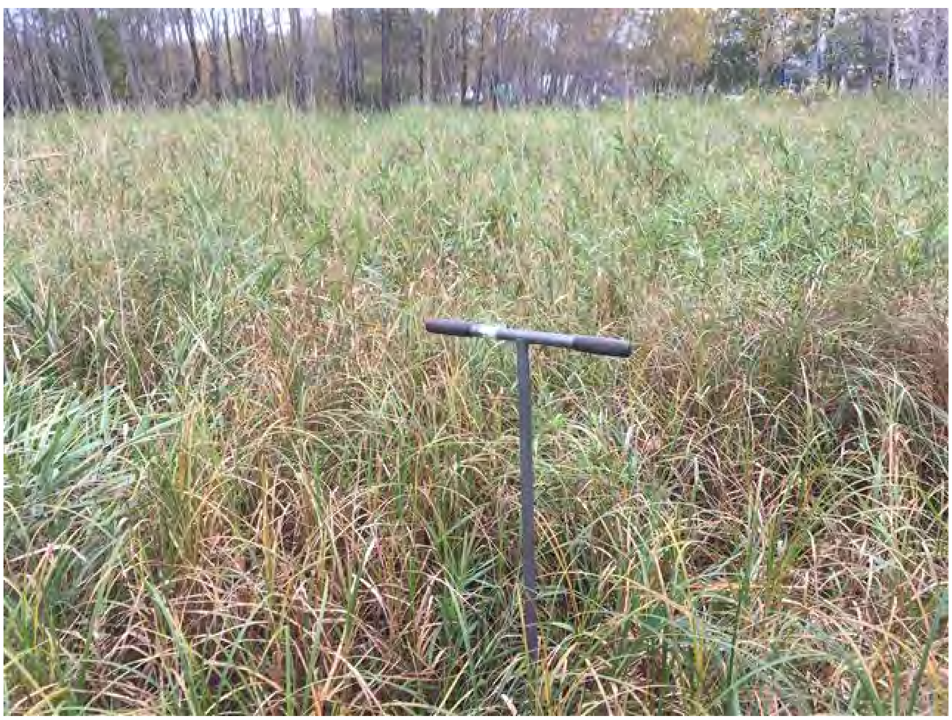


Photo 8. Sample Point W3-1w, view northeast.

Photo 9. Sample Point W4-1u, view north.

Photo 10. Sample Point W4-1w, view southeast.

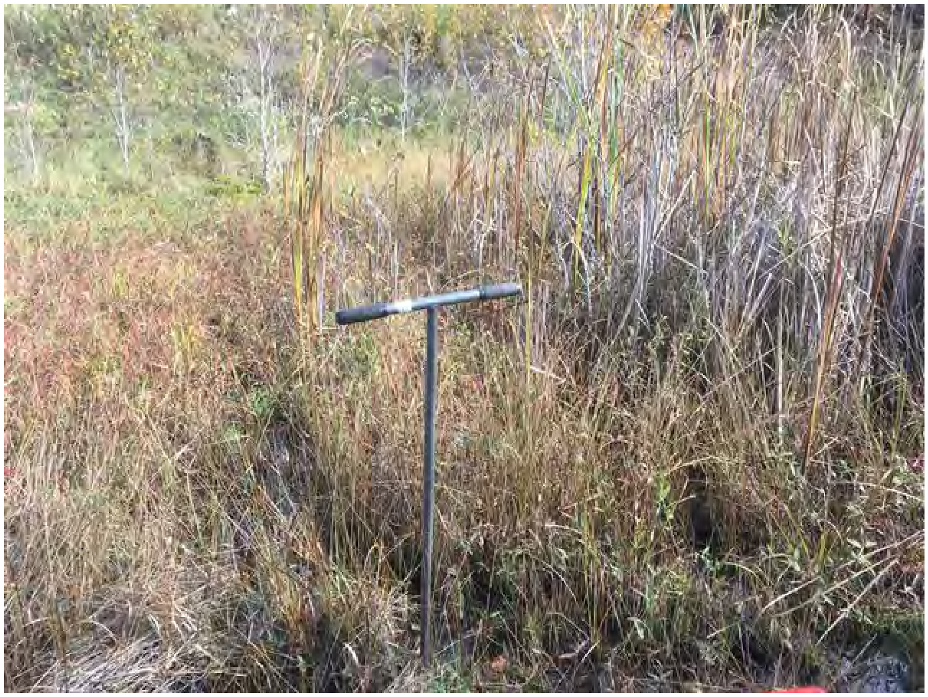


Photo 11. Sample Point W4-2w, view east.

Photo 12. Sample Point W5-1u, view southeast

Photo 13. Sample Point W5-1w, view southwest.

Photo 14. Sample Point W5-2w, view northwest.

Photo 15. Sample Point W6-1u, view northwest.

Photo 16. Sample Point W6-1w, view east.

Photo 17. Sample Point W7-1w, view north.

APPENDIX C

WDNR Artificial Wetland Exemption Determination

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
1701 N 4th Street
Superior, WI 54880

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

November 20, 2019

WIC-NO-2019-16-04026

C. Reiss Coal Company, LLC
Christian Zuidmulder
PO Box 188
Green Bay, WI 54305

RE: Artificial Wetland Exemption Determination for an area described as Wetland W4 and W5 , located in the NE1/4 of the NE1/4 of Section 16, Township 49 North, Range 14 West, City of , Douglas County

Dear Mr. Zuidmulder:

This letter is in response to your request for an artificial wetland exemption determination for the above mentioned wetlands.

According to 281.36 (4n), State Statutes, a landscape feature where hydrophytic vegetation may be present as a result of human modification to the landscape or hydrology and for which no definitive evidence exists showing a prior wetland or stream history before August 1, 1991, may be exempt from state wetland regulations. The following types of artificial wetlands cannot be exempted from state wetland regulation: 1) a wetland that serves as a fish spawning area or that is
passage to a fish spawning area and 2) a wetland created as a result of a wetland mitigation requirement. In addition, DNR must also consider whether the artificial wetland is providing significant flood protection to adjacent or downstream properties and infrastructure, and/or significant water quality functions to adjacent or downstream water bodies.

The Department reviewed the following materials to aid in our exemption determination:

- The request narrative
- Historic Maps, including the Original Land Survey Plat, the USGS topographic Quad map from 1915, 1954,1974 and soil mapping.
- Aerial photographs, including the 1938 photograph, a pre-construction photograph, and a post-construction photograph.

Below is a summary of our findings:

<u>Request Narrative</u>
According to the request narrative the wetlands formed on a concrete foundation.

<u>Historic Map Review</u>
- Original Land Survey Plat. The original land survey indicates that the area with the wetlands W4 and W5 were part of the St. Louis River.
- Bordner Survey. The Bordner survey indicates the area had been filled by the survey.

- Superior USGS Topographic Quad map: The USGS Quad map indicates by 1915 the dock had been constructed by that time..

Aerial Photograph Review
Aerial photographs indicate the site had been used for coal storage and other industrial uses but became inactive.

Conclusion:
- Based upon the information provided above, the wetland identified as Wetland W4 and W%5 are not wetlands wetland vegetation has grown on to of a concrete apron. The site is filled river bed. Wetland W4 and W5 lack wetland soils and are not regulated as wetlands by the state.

This letter describes DNR's decision regarding the jurisdictional status of Wetland W4 and W5 and is only valid for state jurisdictional purposes. For decisions regarding the federal jurisdictional status of Wetlands W4 and W5x, you will need to contact the U.S. Army Corps of Engineers. The U.S. Army Corps of Engineers contact for Douglas County is Bill Sande. Bill Sande can be reached at (651) 290-5882.

If you have any questions about this determination, please contact me at (715) 392-0803 or email Steven.LaValley@wisconsin.gov.

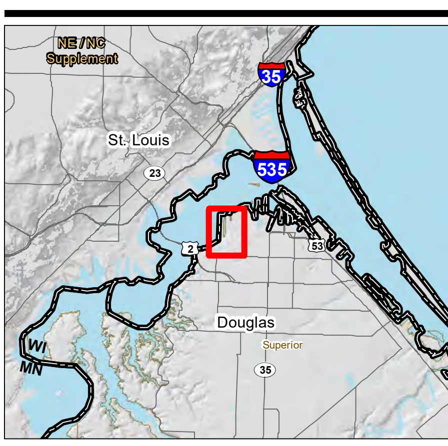
Sincerely,

Steven LaValley

Steven LaValley
Wetland Exemption Specialist

cc: Bill Sande, U.S. Army Corps of Engineers
Christian Zuidmulder, C. Reiss Coal Company, LLC, Consultant

V:\1937\Active\193707141\03_data\gis_cad\gis\mxds\fig5_fcd_193707141.mxd Revised: 2019-10-28 By: aswain



Legend

- Project Boundary
- Sample Point
- Field Delineated Wetland
- 2ft Elevation Contour

DNR 24k Hydrography

- Perennial Stream
- Intermittent Stream
- Waterbody

Figure No.
5

Title
Field Collected Data

Client/Project
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Wetland Delineation

Project Location
T49N, R14W, S09 & S16,
C. of Superior,
Douglas Co., WI

193707141
Prepared by AJS on 2019-09-26
Technical Review by JH on 2019-09-27
Independent Review by MK on 2019-10-28

N

0 200 400
Feet
1:4,800 (At Original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources Include: Stantec, WisDOT, WDNR
3. Orthophotography: 2017 NAIP

Stantec

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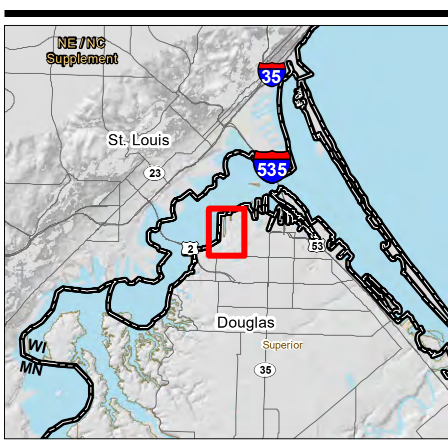

Legend

- Project Boundary
- Sample Point
- Field Delineated Wetland
- 2ft Elevation Contour

DNR 24k Hydrography

- Perennial Stream
- Intermittent Stream
- Waterbody

Figure No.
5

Title
Field Collected Data - Revised 12/5/2019

Client/Project
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Wetland Delineation

Project Location
T49N, R14W, S09 & S16,
C. of Superior,
Douglas Co., WI

193707141
Prepared by AJS on 2019-09-26
Technical Review by JH on 2019-09-27
Independent Review by MK on 2019-10-28

0 200 400 Feet
1:4,800 (At Original document size of 11x17)

N

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources Include: Stantec, WisDOT, WDNR
3. Orthophotography: 2017 NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

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APPENDIX D

Wetland Fill Permit

CITY OF SUPERIOR
Community Development Division
Douglas County, WI
1316 North 14th Street, Superior WI 54880
715-395-7506

SAMP III Wetland Permit

THIS SAMP III WETLAND PERMIT IS ISSUED
PROVIDED ALL INFORMATION SUBMITTED BY THE APPLICANT IS TRUE AND ACCURATE.

SAMP III Permit Number 2020-04

OWNER:	C. Reiss Terminals LLC
CONTRACTOR:	TBD
PARCEL NO.	04-804-01014-00
SAMP WETLAND NO:	S1-16-16 A & B
TOTAL PROJECT ACREAGE:	53.0 acres
TOTAL PERMANENT WETLAND IMPACT:	0.05 acres
TOTAL TEMPORARY WETLAND IMPACT:	0.00 acres
TOTAL PERMITTED WETLAND IMPACTS:	**0.05 acres**
PERMIT DATE:	10 August 2020
EXPIRATION DATE:	10 August 2025

PROJECT: Construct new airplane hangar at Bong Memorial Airport in Superior, WI.

Permit Fee	$ 1,000.00	
Wetland Mitigation Credit Fee	$ 900.00	(0.05 acres x 1.2 credits/acre x $15,000/credit)
TOTAL AMOUNT DUE	**$ 1,900.00**	

APPROVED BY:

Darienne McNamara
Environmental Regulatory Manager
City of Superior

8/10/2020
Date

SAMP III Permit Conditions

A. SAMP III development permits are valid for 5 years from the date of issuance.

B. All SAMP III permits are valid only while permitted projects operate under the COE General Permit conditions attached herein.

C. The permittee is responsible for ensuring that whomever performs, supervises, or oversees any portion of the physical work associated with the construction of the project has a copy of, is familiar with, and complies with all the terms and conditions of this permit.

D. A copy of the approved permit, plans, and drawings shall remain onsite and made available to the COE, DNR, City or County staff, or their authorized representatives during inspections at the project site.

E. At least one week (7 calendar days) prior to the commencement of any work authorized by this permit, the permittee shall contact the Environmental Regulatory Manager at the City of Superior by email (mcnamarad@ci.superior.wi.us) or phone with the field contact name, address, and telephone number for all companies contracted to work on the project.

F. This is not a Building Permit or Stormwater Permit. Additional permits may be required, as applicable to local, county, state, and/or federal regulatory standards and laws. Contact the City of Superior Building Inspection Division of Public Works and the Wisconsin Department of Natural Resources to determine if additional permits are required.

G. SAMP Permits will only be issued in accordance with NR 216 and NR 151, and any other applicable local ordinances, for peak flow and water quality protection. Additional measures to mitigate stormwater functions will be required to ensure that the provisions of NR 216 and NR 151 are met.

H. The permittee shall not operate or stage equipment on wetlands not authorized for destruction by this permit to prevent damage to vegetation, soil, or water resources in adjacent wetlands or surface water adjacent to SAMP permitted areas.

I. The permittee shall ensure the stabilization of fill sediment to prevent erosion or sedimentation into adjacent wetlands or surface water.

J. The permittee shall remove all temporary fills and restore the area to its original elevation.

K. For projects that do not result in wetland losses, the permittee shall limit the establishment of invasive species by applying a standard MNDOT or WISDOT approved native wetland seed mix.

L. The permittee shall ensure that the discharge of excess material shall not be made in a wetland not authorized for fill by the SAMP permit.

M. The permittee shall ensure that none of the work performed to construct, operate, or maintain this project (including preparatory work, staging, and site clean-up work) causes impacts (including non-jurisdictional impacts such as drainage or non-point source sedimentation) to other waters or wetlands as well as those impacts expressly allowed by this (or a subsequent) SAMP permit.

N. Prior to initiating any physical work on the project sites, adjacent wetlands or wetland areas that are to remain undisturbed shall be clearly marked in the field so that the boundaries are visible to equipment operators using appropriate signage, orange construction fencing, silt fencing, and/or continuous strands of flagging.

O. To minimize the potential for future violations of Federal Law, the permittee shall provide the purchasers of any lot within the permitted project area with a copy of the wetland delineation map depicting the wetlands not authorized to be filled under this authorization. The permittee shall advise purchasers of these lots that all remaining wetlands are subject to Clean Water Act jurisdiction and Department of the Army authorization is required for filling and earthmoving activities within the boundaries. Remaining wetlands shall be shown on the subdivision plat recorded by the local zoning authority.

P. Low-lying wetland areas not specifically authorized for fill by this permit may be maintained (mowed), but not filled with any "fill" material, or otherwise disturbed in any manner that affects the soil surface, or which may require a local SAMP or other state and/or federal wetland impact permit. This includes, but is not limited to, the disturbance or discharge of any soil or organic materials within the wetland area, removal of below-ground roots, stumps, or other matter. A copy of the approved site plan will be retained on file at the City with all building permits. A record of wetlands on site will be recorded with all building records. Any work in this area of avoidance shall remain subject to City of Superior SAMP Ordinance and/or any other applicable state or federal wetland permit.

Special Permit Conditions

1. As compensation for impacts to state-listed rare plants, permittee shall perform the following mitigation measures before initiating construction:

   Petasites sagittatus: move plants to a nearby area with similar habitat on protected land (ex. permanent conservation easement or comparable).

   Prior to moving plants, permittee must provide a plan detailing the coordinates (lat/long) for all receiving sites, schedule and sequence of events, and methodology. This plan must be approved in writing by the City of Superior prior to commencing activities.

Enclosures: U.S. Army Corps of Engineers Federal General Permit No. 96-06788-GP-SDE/96-06789-GP-SDE/96-06790-GP-SDE/9606791-GP-SDE/96-06792-GP-SDE (as applicable) and Wisconsin Department of Natural Resources Water Quality Certification IP-NO-2007-16060LS/IP-NO-2008-71546LS/IP-NO-2008-71547LS/IP-NO-2008-71548LS.

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
1701 N 4th Street
Superior, WI 54880

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

July 7, 2020 GP-NO-2020-16-02266

C. Reiss Terminals LLC
Christian Zuidmulder
PO Box 188
Green Bay, WI 54305

RE: Coverage under the wetland general permit for development in the SAMP, located in the City of Superior, Douglas County, also described as in the SE1/4 of the SE1/4 of Section 09, Township 49 North, Range 14 West.

Dear Mr. or Ms. Zuidmulder:

Thank you for submitting a pre-discharge notification for coverage under the SAMP wetland general permit WDNR-GP8-2018.

You have certified that your project meets the eligibility criteria and conditions for this activity. Based upon your submittal, you may proceed with your project. Please take this time to re-read the eligibility standards and conditions of the general permit. The eligibility standards and permit conditions can be found in the statewide general permit WDNR-GP8-2013, which is attached. <u>You are responsible for meeting all general permit eligibility standards and permit conditions</u>. This includes notifying the Department before starting the project, and submitting photographs within one week of project completion. Please note your coverage is valid for 5 years from the date of the department's determination or until the activity is completed, whichever occurs first. This permit coverage constitutes the state of Wisconsin's wetland water quality certification under USCS s. 1341 (Clean Water Act s. 401).

The Department conducts routine and annual compliance monitoring inspections. Our staff may follow up and inspect your project to verify compliance with state statutes and codes. If you need to modify your project please contact your local Water Management Specialist, Steven LaValley at (715) 392-0803 or email Steven.LaValley@wisconsin.gov to discuss your proposed modifications.

The Department of Natural Resources appreciates your willingness to comply with wetland regulations, which help to protect the water quality, fish and wildlife habitat, natural scenic beauty and recreational value of Wisconsin's wetland resources for future generations. Please be sure to obtain any other local, state or federal permits that are required before starting your project.

If you have any questions, please call me at (715) 392-0803 or email Steven.LaValley@wisconsin.gov.

Sincerely,

Steven LaValley
Water Management Specialist

cc: Bill Sande, Project Manager, U.S. Army Corps of Engineers

You agree to comply with the following conditions:

1. **Pre-Discharge Notification**. You shall submit a complete pre-discharge notification to the Department as outlined in section 2 of this permit. If requested, you shall furnish the Department, within a reasonable timeframe, any information the department needs to verify compliance with the terms and conditions of this permit.

2. **Certification**. Acceptance of general permit WDNR-GP8-2018 and efforts to begin work on the activities authorized by this general permit signifies that you have certified the project meets all eligibility standards outlined in Section 1 of this permit and that you have read, understood and have agreed to follow all terms and conditions of this general permit.

3. **Reliance on Applicant's Data.** The determination by this office that a confirmation of authorization is not contrary to wetland water quality standards will be based upon the information provided by the applicant and any other information required by the DNR.

4. **Project Plans**. This permit does not authorize any work other than what is specifically described in the pre-discharge notification package and plans submitted to the Department and you certified is in compliance with the terms and conditions of WDNR-GP8-2013

5. **Expiration**. This general permit WDNR-GP8-2018 expires on August 22, 2023 or until the U.S. Army Corps of Engineers General Permits 96-06788-GP-SDE, 96-06789/06790-GP-SDE, 96-06791-GP-SDE, 96-06792-GP-SDE, expire, whichever is earlier.

6. The time limit for completing work authorized by the provisions of WDNR-GP8-2018 ends 5 years after the date on which the discharge is considered to be authorized under WDNR-GP8-2018 or until the discharge is completed, whichever occurs first.

7. **Other Permit Requirements**. You are responsible for obtaining any other permit or approval that may be required for your project by local zoning ordinances, other local authority, other state permits and by the U.S. Army Corps of Engineers before starting your project.

8. **Authorization Distribution**. You must supply a copy of this general permit to every contractor working on the project.

9. **Project Start**. You shall notify the Department before starting construction.

10. **Permit Posting**. You must post a copy of this general permit coverage letter at a conspicuous location on the project site prior to the execution of the permitted activity and remaining at least five days after stabilization of the area of permitted activity. You must also have a copy of the permit coverage letter and approved plan available at the project site at all times until the project is complete.

11. **Permit Compliance**. The department may modify or revoke coverage of this permit if it is not constructed in compliance with the terms and conditions of this permit, or if the Department determines the project will be detrimental to wetland water quality standards. Any act of noncompliance with this permit constitutes a permit violation and is grounds for enforcement action. Additionally, if any applicable conditions of this permit are found to be invalid or unenforceable, authorization for all activities to which that condition applies is denied.

12. **Construction Timing**. Once wetland work commences, all wetland construction activities must be continuous until the permitted activity is completed, and the site is stabilized.

13. **Construction**. No other portion of the wetland may be disturbed beyond the area designated in the submitted plans. The project applicant shall not operate or stage equipment on wetlands not authorized for impacts by this general permit to prevent damage to vegetation, soil, or water resources in adjacent wetlands or surface water adjacent to the impact area that falls within the coverage of this general permit. Prior to initiating work, any adjacent wetlands that are to remain undisturbed shall be clearly marked so that the boundaries are visible to equipment operators using appropriate signage, orange construction fencing, silt fence or other approved method.

14. **Temporary Impacts**. For temporary impacts all fill shall be removed, and the area restored to its original elevation and the applicant shall limit the establishment of invasive species by applying an approved native wetland seed mix.

15. **Project Completion**. Within one week of completion of the regulated activity, you shall submit to the Department a statement certifying the project is in compliance with all the terms and conditions of this permit, and photographs of the activities authorized by this permit. This statement must reference the Department-issued docket number and be submitted to the Department staff member that authorized coverage.

16. **Proper Maintenance**. You must maintain the activity authorized by WDNR-GP8-2018 in good condition and in conformance with the terms and conditions of this permit utilizing best management practices. Any structure or fill authorized shall be properly maintained to ensure no additional impacts to the remaining wetlands.

17. **Site Access**. Upon reasonable notice, you shall allow access to the site to any Department employee who is investigating the project's construction, operation, maintenance or permit compliance with the terms and conditions of WDNR-GP8-2013 and applicable laws.

18. **Erosion and siltation controls**. The project site shall implement erosion and sediment control measures that adequately control or prevent erosion and prevent damage to wetlands as outlined in NR 151.11(6m), Wis. Adm. Code.

19. **Equipment used**. The equipment used in the wetlands must be low ground weight equipment as specified by the manufacturer specifications.

20. **Invasive Species**. All project equipment shall be decontaminated for removal of invasive species prior to and after each use on the project site by utilizing other best management practices to avoid the spread of invasive species as outlined in NR 40, Wis. Adm. Code. For more information, refer to http://dnr.wi.gov/topic/Invasives/bmp.html.

21. **Federal and State Threatened and Endangered Species**. WDNR-GP8-2018 does not affect the DNR's responsibility to ensure that all authorizations comply with Section 7 of the Federal Endangered Species Act, s. 29.604, Wis. Stats and applicable State Laws. No DNR authorization under this permit will be granted for projects found not to comply with these Acts/laws. No activity is authorized which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act and/or State law or which is likely to destroy or adversely modify the critical habitat of a species as identified under the Federal Endangered Species Act.

22. **Special Concern Species**. If the Wisconsin National Heritage Inventory lists a known special concern species to be present in the project area you will take reasonable action to prevent significant adverse impacts or to enhance the habitat for the species of concern.

23. **Historic Properties and Cultural Resources**. WDNR-GP8-2018 does not affect the DNR's responsibility to ensure that all authorizations comply with Section 106 of the National Historic Preservation Act and s. 44.40, Wis. Stats. No DNR authorization under this permit will be granted for projects found not to comply with these Acts/laws. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places. If cultural, archaeological, or historical resources are unearthed during activities authorized by this permit, work must be stopped immediately, and the State Historic Preservation Officer must be contacted for further instruction.

24. **Preventive Measures**. Measures must be adopted to prevent potential pollutants from entering a wetland or waterbody. Construction materials and debris, including fuels, oil, and other liquid substances, will not be stored in the construction area in a manner that would allow them to enter a wetland or waterbody as a result of spillage, natural runoff, or flooding. If a spill of any potential pollutant should occur, it is the responsibility of the permittee to remove such material, to minimize any contamination resulting from this spill, and to immediately notify the State Duty Officer at **1-800-943-0003**.

25. **Suitable fill material.** All fill authorized under this permit must consist of clean suitable soil material, as defined by s. NR 500.03(214), Wis. Admin. Code, free from hazardous substances as defined by s. 289.01(11), Wis. Stats., and free from solid waste as defined by s. 289.01(11) and (33), Wis. Stats.

26. **Standard for Coverage**. Wetland impacts from the project will cause only minimal adverse environmental impacts as determined by the Department.

27. **Transfers**. Coverage under this permit is transferable to any person upon prior written approval of the transfer by the Department.

28. **Limits of State Liability**. In authorizing work, the State Government does not assume any liability, including for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the State in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this WDNR-GP8-2013.

29. **Reevaluation of Decision**. The Department may suspend, modify or revoke authorization of any previously authorized activity and may take enforcement action if the following occur:

a. The applicant fails to comply with the terms and conditions of WDNR-GP8-2013.

b. The information provided by the applicant in support of the permit application proves to have been false, incomplete, or inaccurate.

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. PAUL DISTRICT
180 FIFTH STREET EAST, SUITE 700
ST. PAUL, MN 55101-1678

July 29, 2020

Regulatory File No. 2019-02784-WMS

Christian Zuidmulder
C. Reiss Terminals, LLC
PO Box 188
Green Bay, Wisconsin 54305

Dear Mr. Zuidmulder:

This correspondence is in regard to your pre-construction notification (PCN) requesting Department of the Army authorization to discharge fill material into 0.05-acre of wetlands (SAMP Wetlands S1-16-16A & S1-16-16B) for the construction of a new entrance road and a new railway spur at the C. Reiss Coal Dock Wisconsin facility. Compensation for the permanent loss of 0.05-acre of wetlands is provided by debiting 0.06 wetland credits from the City of Superior's Wetland Mitigation Bank. The project site is in Sections 9 & 16, Township 49 North, Range 14 West, Douglas County, Wisconsin.

Your project as shown on the enclosed figure labeled 2019-02784-WMS, is authorized by the City of Superior Special Area Management Plan (SAMP III) General Permit for Commercial/Industrial Development (1996-06788-SDE). In order for this verification to be valid, you must ensure the work is performed in accordance with the SAMP III General Conditions and the Wisconsin Department of Natural Resources' 401 Water Quality Certification Conditions.

You are also required to complete and return the enclosed Compliance Certification form within 30 days upon completion of your project in accordance with your permit conditions. Please mail the completed form to the Corps contact identified in the last paragraph.

This verification is valid until July 29, 2024, unless the general permit is modified, suspended, or revoked. If the work has not been completed by that time, you should contact this office to verify that the permit is still valid. Furthermore, if you commence or are under contract to commence this activity before the date of general permit expiration, modification, or revocation, you will have 12 months from the date of expiration, modification or revocation to complete the activity under the present terms and conditions of the general permit.

Our verification of this permit is based on the project description and construction methods provided in your PCN. You are cautioned that a change in the location or plans may invalidate this verification. Proposed changes should be coordinated with this office prior to construction. Failure to comply with all terms and conditions of this permit verification invalidates this verification and could result in a violation of Section 301 of the Clean Water Act or Section 10 of the Rivers and Harbors Act. <u>You must also obtain all local, State, and other Federal permits that apply to this project.</u>

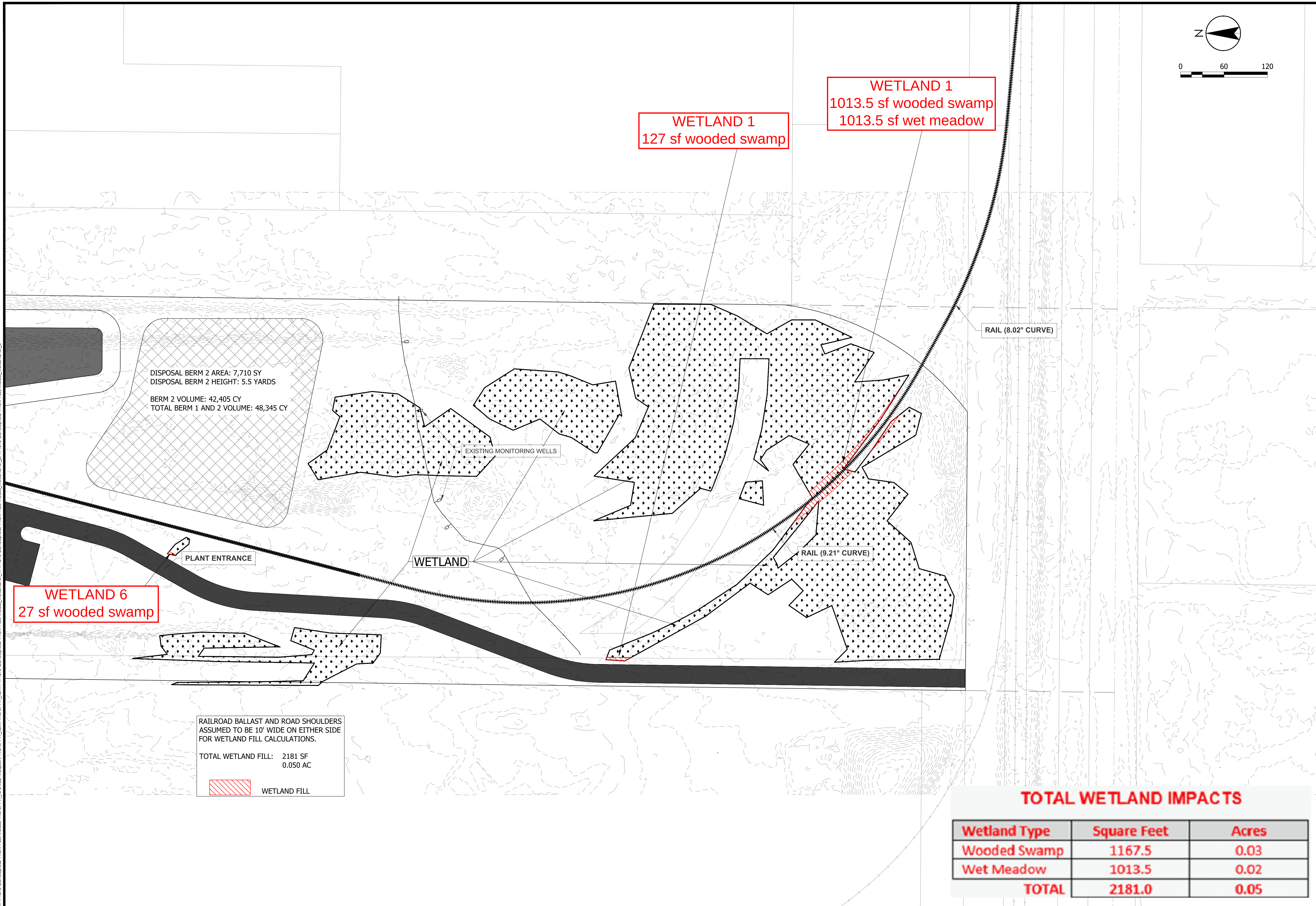
No jurisdictional determination was requested or prepared for this project. While not required, you may request a jurisdictional determination from the Corps contact indicated below.

If you have any questions, please contact me in our Hayward office at (651) 290-5882 or william.m.sande@usace.army.mil. In any correspondence or inquiries, please refer to the Regulatory file number shown above.

Sincerely,

William Sande
Senior Project Manager

cc: Steve LaValley, WDNR (Steven.LaValley@wisconsin.gov)
Darienne McNamara, City of Superior (mcnamarad@ci.superior.wi.us)



TOTAL WETLAND IMPACTS

Wetland Type	Square Feet	Acres
Wooded Swamp	1167.5	0.03
Wet Meadow	1013.5	0.02
TOTAL	2181.0	0.05

Stantec
12075 N. Corporate Parkway, Suite 200
Mequon, WI 53092
www.stantec.com

PRELIMINARY CONCEPT

C. REISS COAL DOCK
C. REISS COAL COMPANY, LLC
ST. LOUIS BAY, SUPERIOR, WI

DATE OF ISSUANCE
ISSUE DATE

NO	REVISION	DATE

SURVEY
DRAWN
DESIGNED
CHECKED
APPROVED
PROJ. NO. 193707141
SHEET NUMBER
3

US Army Corps of Engineers®
St. Paul District

COMPLIANCE CERTIFICATION

Regulatory File Number:	2019-02787-WMS
Name of Permittee:	C. Reiss Terminals, LLC
County/State:	Douglas County/Wisconsin
Date of Issuance:	July 29, 2020

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the Corps contact identified in your verification letter within 30 days.

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

By signing below, the permittee is certifying that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the permit, and any required mitigation was completed in accordance with the permit conditions.

______________________________ ______________________________
Signature of Permittee Date

APPENDIX E

Threatened and Endangered Species

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
4101 American Blvd E
Bloomington, MN 55425-1665
Phone: (952) 252-0092 Fax: (952) 646-2873
http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html

In Reply Refer To: April 25, 2022
Project Code: 2022-0035464
Project Name: C. Reiss Superior Dock

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq*.).

Threatened and Endangered Species
The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance
Please refer to refer to our Section 7 website for guidance and technical assistance, including step-by-step instructions for making effects determinations for each species that might be present and for specific guidance on the following types of projects: projects in developed areas, HUD, CDBG, EDA, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **no effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see below) – then project proponents must determine if proposed activities will have **no effect** on or **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species on our office website. If no impacts will occur to a species on the IPaC species list (e.g., there is no habitat present in the project area), the appropriate determination is **no effect**. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
3. Should you determine that project activities **may affect** any federally listed, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

Northern Long-Eared Bats
Northern long-eared bats occur throughout Minnesota and Wisconsin and the information below may help in determining if your project may affect these species.

This species hibernates in caves or mines only during the winter. In Minnesota and Wisconsin, the hibernation season is considered to be November 1 to March 31. During the active season (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh for northern long-eared bat that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas,
- Trees found in highly developed urban areas (e.g., street trees, downtown areas),

- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees, and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

If IPaC returns a result that northern long-eared bats are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** this species **IF** one or more of the following activities are proposed:

- Clearing or disturbing suitable roosting habitat, as defined above, at any time of year,
- Any activity in or near the entrance to a cave or mine,
- Mining, deep excavation, or underground work within 0.25 miles of a cave or mine,
- Construction of one or more wind turbines, or
- Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on the northern long-eared bat. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

If any of the above activities are proposed, please use the northern long-eared bat determination key in IPaC. This tool streamlines consultation under the 2016 rangewide programmatic biological opinion for the 4(d) rule. The key helps to determine if prohibited take might occur and, if not, will generate an automated verification letter. No further review by us is necessary.

Please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the bat by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of northern long-eared bats after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

Whooping Crane

Whooping crane is designated as a non-essential experimental population in Wisconsin and consultation under Section 7(a)(2) of the Endangered Species Act is only required if project activities will occur within a National Wildlife Refuge or National Park. If project activities are proposed on lands outside of a National Wildlife Refuge or National Park, then you are not required to consult. For additional information on this designation and consultation requirements, please review "Establishment of a Nonessential Experimental Population of

Whooping Cranes in the Eastern United States."

Other Trust Resources and Activities

Bald and Golden Eagles **-** Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds **-** The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers **-** Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines **-** Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy **-** To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

State Department of Natural Resources Coordination

While it is not required for your Federal section 7 consultation, please note that additional state endangered or threatened species may also have the potential to be impacted. Please contact the Minnesota or Wisconsin Department of Natural Resources for information on state listed species that may be present in your proposed project area.

Minnesota
Minnesota Department of Natural Resources - Endangered Resources Review Homepage
Email: Review.NHIS@state.mn.us

Wisconsin
Wisconsin Department of Natural Resources - Endangered Resources Review Homepage
Email: DNRERReview@wi.gov

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office
4101 American Blvd E
Bloomington, MN 55425-1665
(952) 252-0092

Project Summary

Project Code: 2022-0035464
Event Code: None
Project Name: C. Reiss Superior Dock
Project Type: Boatlift/Boathouse/Dock/Pier/Piles - Maintenance/Modificaton
Project Description: Revitalize existing dock and associated infrastructure for use. Project is tentatively scheduled to start in the summer of 2022.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@46.734386246306,-92.12172460650305,14z

Counties: Douglas County, Wisconsin

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Canada Lynx *Lynx canadensis* Population: Wherever Found in Contiguous U.S. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3652	Threatened
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Endangered
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Flowering Plants

NAME	STATUS
Fassett's Locoweed *Oxytropis campestris var. chartacea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/209	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Common Tern *Sterna hirundo hirundo* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Aug 31
Connecticut Warbler *Oporornis agilis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 15 to Aug 10
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Golden-winged Warbler *Vermivora chrysoptera* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Le Conte's Sparrow *Ammodramus leconteii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 15
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

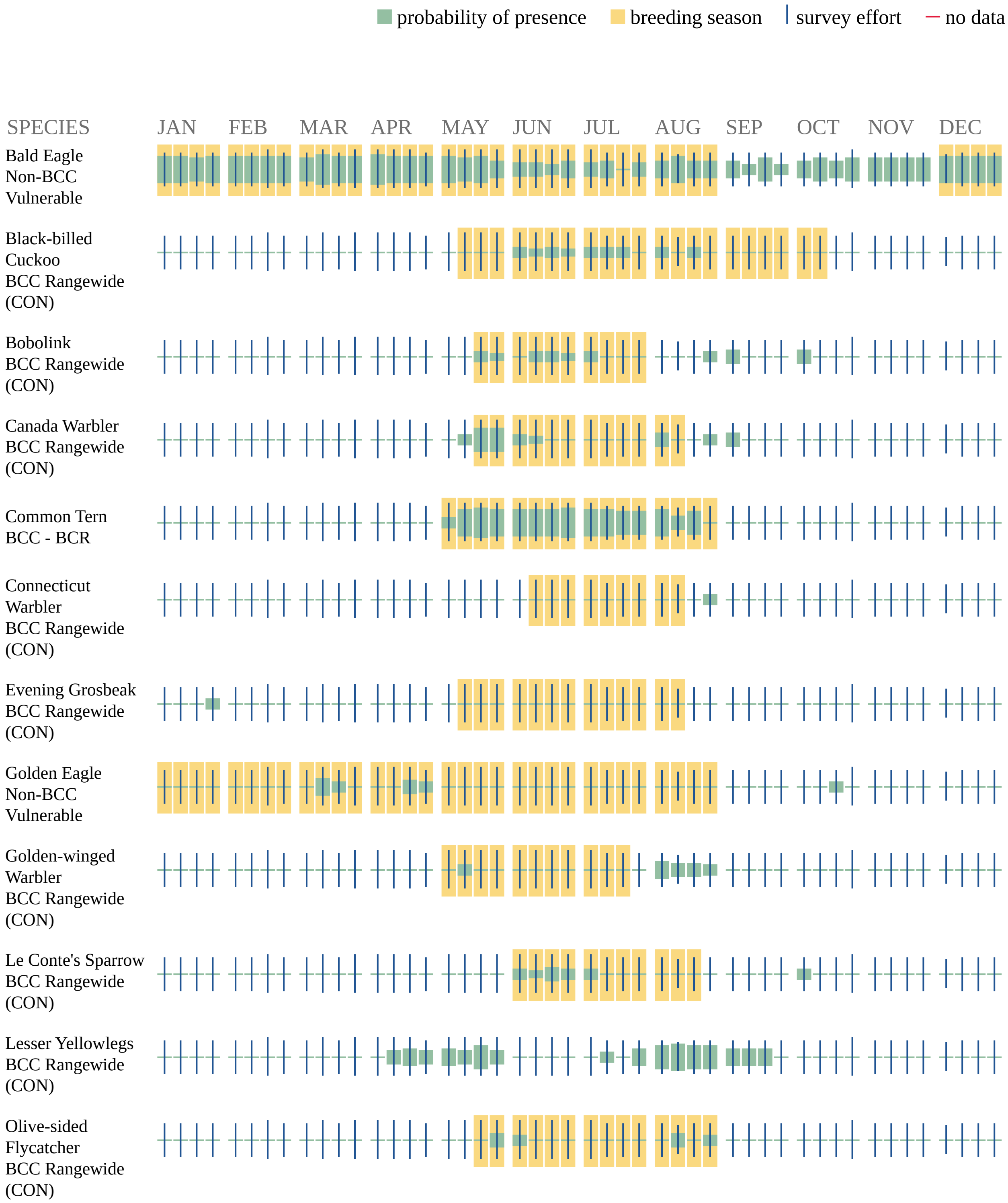
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

LAKE

- L1UBH

FRESHWATER EMERGENT WETLAND

- PEM1C

IPaC User Contact Information

Agency: Stantec Consulting Services Inc.
Name: Kurt Rubsam
Address: 12075 Corporate Parkway, Suite 200
City: Mequon
State: WI
Zip: 53092
Email kurt.rubsam@stantec.com
Phone: 2626439162

Lead Agency Contact Information

Lead Agency: Army Corps of Engineers

From:	Graham, Joseph R - DNR
To:	Lennie, Brian; christian.z
Cc:	Meyer, Kevin A CIV USARMY CELRE (USA); LaValley, Steven A - DNR; Piszczek, Paul P - DNR
Subject:	FW: Fish Window - C Reiss Coal Slip Dredging
Date:	Monday, February 28, 2022 12:45:59 PM

Brian and Christian,

DNR is granting a waiver from the environmental window for the St Louis River for dredging activity within the C Reiss slip in Superior, WI. Per the email below, DNR fisheries biologist Paul Piszczek has conditionally waived the June 1 fish window and is allowing a start date of May 1. The conditions for the waiver are below and predicated on working from the south end of the slip to the north and that you install and maintain BMPs to contain and control suspended sediment and oil sheen.

Please let us know if you have any questions.

Thank you,

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Joe Graham
Cell: (715) 292-4925
joseph.graham@wisconsin.gov

From: Piszczek, Paul P - DNR <Paul.Piszczek@wisconsin.gov>
Sent: Monday, February 28, 2022 9:24 AM
To: Graham, Joseph R - DNR <Joseph.Graham@wisconsin.gov>
Subject: RE: Fish Window - C Reiss Coal Slip Dredging

Joe,

Thank you for the information in your 2/25/2022 email to me, below. Understanding the need to complete the proposed dredging, while balancing the needs of St. Louis River's fisheries resources, I conditionally waive the June 1 fish window and allow a start date of May 1.

This conditional waiver requires work to begin at the head of slip (i.e., southern-most end), which is intended to maximize containment of oil sheen and sediment mobilized during dredging. Work can then proceed northward, while relocating and maintaining the containment BMPs you noted in your 2/25/2022 email to Steve LaValley (see attached). This sequence will minimize oil sheen and sediment emigration to the mainstem river and therefore minimize any impacts to fishes such as the recreationally and ecologically important walleye, muskellunge, lake sturgeon, and various sucker species during their spring season migration.

Paul

[click here to sign up to be informed on Lake Superior fishing issues](#)

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Paul Piszczek
Fisheries Biologist – Lake Superior Tributaries
Phone: (715) 392-7990
paul.piszczek@wisconsin.gov

From: Graham, Joseph R - DNR <Joseph.Graham@wisconsin.gov>
Sent: Friday, February 25, 2022 4:01 PM
To: Piszczek, Paul P - DNR <Paul.Piszczek@wisconsin.gov>
Subject: Fish Window - C Reiss Coal Slip Dredging

Paul,

DNR is working with C Reiss Company on a contaminated sediment dredging project. They will be working on the east side of the slip they share with Hallet Dock No 8. All dredging and material offloading will occur in the slip. EPA and USACE may also be participating to get the work done. Based on the contamination present, they will need to implement additional BMPs to contain sediment and control oil sheen.

Would you consider granting a waiver for fish windows for in water work contained within the slip? Given that this is an industrial slip, and that al activity could be contained within it, would you consider a start date of May 1st or soon after ice out?

Attached is a document with some maps of the site and background, along with a bunch of sediment quality and AOC information that may be of interest, or not.

Thanks,

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Joe Graham
Contaminated Sediment Expert
Remediation & Redevelopment
Wisconsin Department of Natural Resources

Cell: (715) 292-4925
joseph.graham@wisconsin.gov

dnr.wi.gov

APPENDIX F

Seaside Crowfoot Survey

Stantec

Memo

To:	Brian Lennie Mequon Office	From:	Kurt Rubsam Mequon Office
File:	193707141	Date:	June 24, 2020

Reference: Seaside Crowfoot Survey - C. Reiss Superior Dock Project Area Superior, Wisconsin

Stantec completed a survey for the Seaside Crowfoot (*Ranunculus cymbalaria*), a State of Wisconsin threatened plant species, at the C. Reiss Superior Dock Project Area on behalf of the C. Reiss Coal Company. The survey was completed on June 15, 2020 by Kurt Rubsam of Stantec. The purpose and objective of the survey was to confirm if Seaside Crowfoot is present in the wetland areas on-site that may be affected by the overall redevelopment of the C. Reiss Superior Dock. The location of the Project Area is shown on Figure 1 included in Attachment A. Wetland areas on-site were previously delineated and are shown on Figure 5 included in Attachment A

Background Information

Seaside Crowfoot is found in sandy or muddy shores and marshes, ditches and harbors along Lake Michigan, and salted roadsides near the City of Superior. Blooming occurs early June through late August; fruiting occurs late July through late August. The optimal identification period for this species is early June through late August. Background information on the Seaside Crowfoot is included in Attachment B.

Survey Results

The survey was completed on the C. Reiss Superior Dock site on June 15, 2020. Wetland areas included in the survey are show on the Preliminary Concept (Sheet 3) figure included in Attachment A. Wetland areas were surveyed using the meander survey method. The Seaside Crowfoot was not found in any of the wetland areas that may be affected by the redevelopment of the C. Reiss Superior Dock. Only one Ranunculus species was observed growing in the wetland areas, that species was Tall Buttercup (*Ranunculus acris*).

If you have any questions regarding the survey, please give me a call at (262) 402-8153.

Stantec Consulting Services Inc.

Kurt Rubsam
Senior Biologist
Direct: 262-643-9162
Cell: 262-402-8153
Kurt.Rubsam@stantec.com

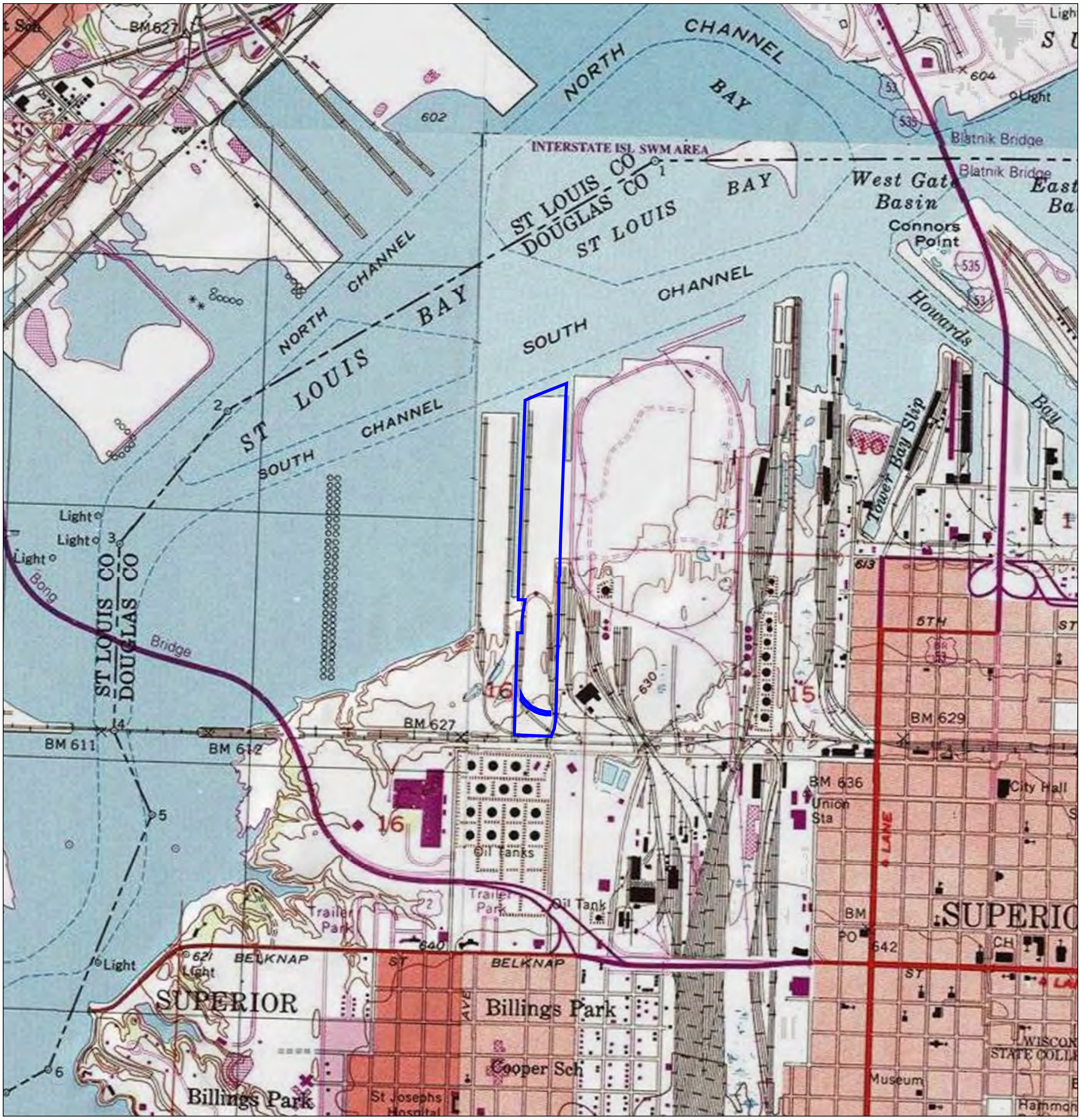
Attachment: As Noted

Reference: Seaside Crowfoot Survey - C. Reiss Superior Dock Project Area
Superior, Wisconsin

ATTACHMENT A

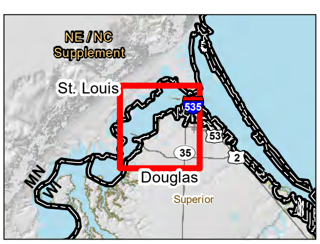
Project Figures

V:\1937\Active\193707141\03_data\gis_cad\gis\mxds\fig1_topo_193707141.mxd Revised: 2019-10-28 By: aswaim



Legend

Project Boundary



Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WisDOT, WDNR
3. Background: USGS 7.5' Topographic Quadrangles

Figure No.
1

Title
Project Location and Topography

Client/Project
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Wetland Delineation

Project Location
T49N, R14W, S09 & S16,
C. of Superior,
Douglas Co., WI

193707141
Prepared by AJS on 2019-09-26
Technical Review by JH on 2019-09-27
Independent Review by MK on 2019-10-28

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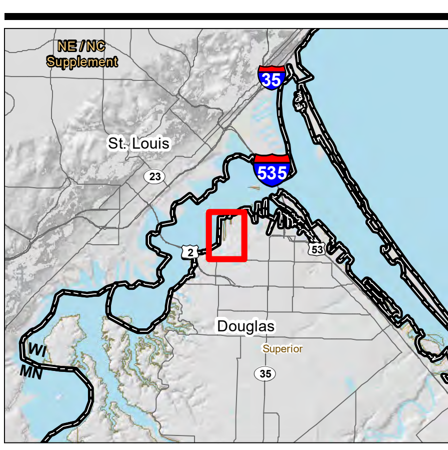
Stantec



Legend

- Project Boundary
- Sample Point
- Field Delineated Wetland
- 2ft Elevation Contour

DNR 24k Hydrography

- Perennial Stream
- Intermittent Stream
- Waterbody

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources Include: Stantec, WisDOT, WDNR
3. Orthophotography: 2017 NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
5

Title
Field Collected Data - Revised 12/5/2019

Client/Project
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Wetland Delineation

Project Location
T49N, R14W, S09 & S16,
C. of Superior,
Douglas Co., WI

193707141
Prepared by AJS on 2019-09-26
Technical Review by JH on 2019-09-27
Independent Review by MK on 2019-10-28

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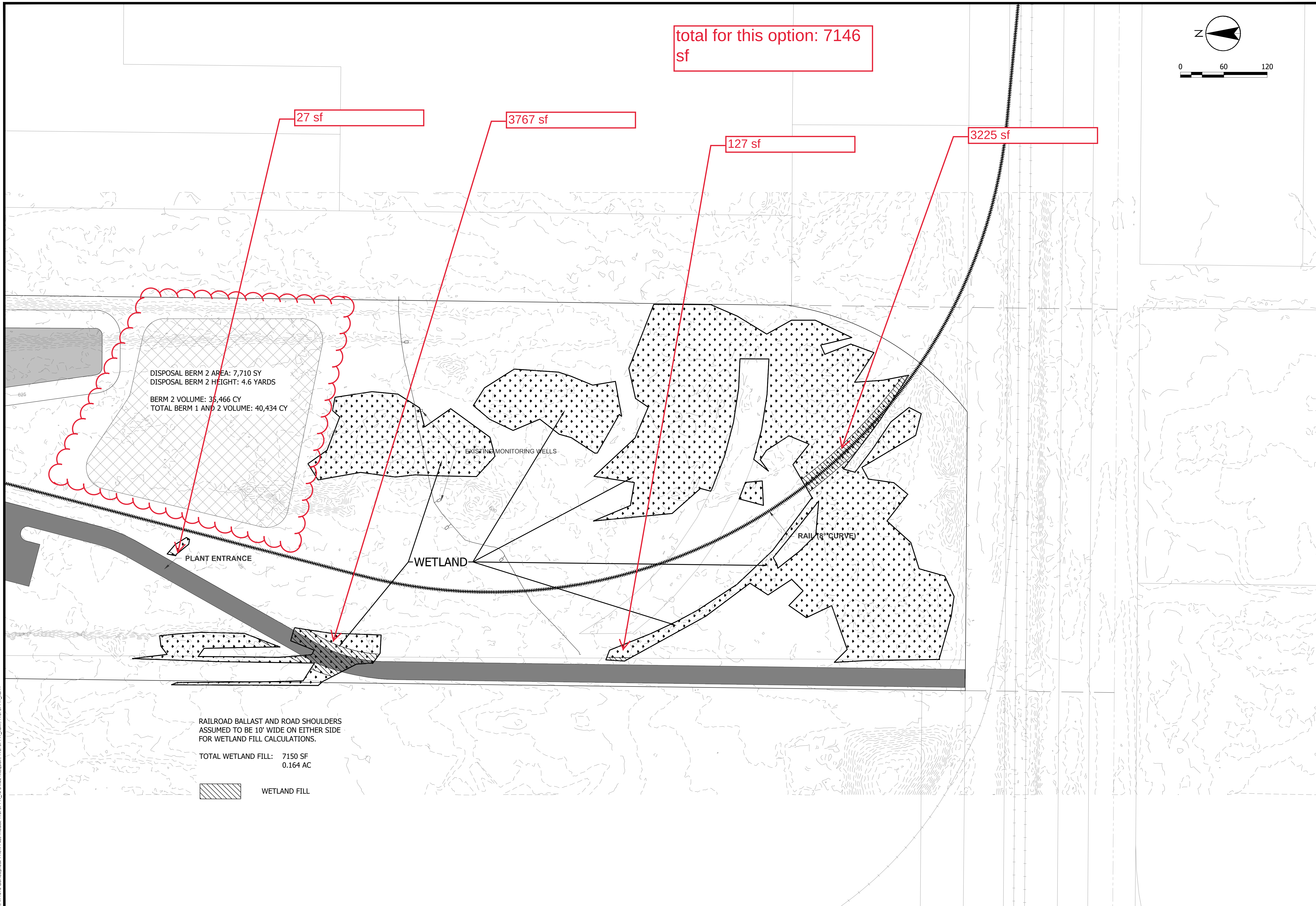


Stantec
12075 N. Corporate Parkway, Suite 200
Mequon, WI 53092
www.stantec.com

PRELIMINARY CONCEPT

C. REISS COAL DOCK
C. REISS COAL COMPANY, LLC
ST. LOUIS BAY, SUPERIOR, WI

DATE OF ISSUANCE		
ISSUE DATE		
NO	REVISION	DATE

SURVEY
DRAWN
DESIGNED
CHECKED
APPROVED
PROJ. NO. 193707141

SHEET NUMBER
3

Reference: Seaside Crowfoot Survey - C. Reiss Superior Dock Project Area
Superior, Wisconsin

ATTACHMENT B

Seaside Crowfoot Information

Share your observations

Share your observations of plants or non-game animals with the Natural Heritage Inventory

- Get started here [exit DNR]

Biodiversity

Rare animals
Find rare and non-game animals.

Rare plants
Learn about plants on the Natural Heritage Working List.

Rare lichens
Discover Wisconsin's lichens.

Natural communities
Explore Wisconsin's natural communities.

Other features
Discover unique resources.

Catch up with the latest news in rare plant monitoring efforts throughout Wisconsin.

Help care for rare plants and animals by ordering an Endangered Resources plate.

Related links

- Wisconsin's endangered and threatened species list
- Endangered species laws
- Natural Heritage Inventory
- Wildlife Action Plan
- Report a rare species [exit DNR]
- Wisconsin's endangered resources

Contact information

For information on Wisconsin's rare plants, contact:
Kevin Doyle
608-416-3377

Seaside Crowfoot (*Ranunculus cymbalaria*)

Photo © Kitty Kohout

- Life history
- State status
- Habitats and landscapes
- Species guidance
- Other resources
- Photos

Life history

Species overview

Seaside Crowfoot (*Ranunculus cymbalaria*), a Wisconsin Threatened plant, is found in sandy or muddy shores and marshes, ditches and harbors along Lake Michigan, and salted roadsides near the city of Superior. Blooming occurs early June through late August; fruiting occurs late July through late August. The optimal identification period for this species is early June through late August.

Synonyms: Cyrtorrhyncha cymbalaria ssp. alpina, Halerpestes cymbalaria

Identification

- **Distinguishing characteristics**: Principal leaves cordate-ovate to ovate or kidney-shaped.
- **Flower characteristics**: Flowers few; petals 3 to 5 mm, scarcely surpassing the sepals; sepals usually 5 rarely more.
- **Fruit characteristics**: Achenes longitudinally nerved, 1.5 to 2 mm, numerous in a short-cylindric head to 12 mm.
- **Leaf characteristics**: Mostly basal; blades cordate-ovate to ovate or kidney-shaped, 5 to 25 mm, rounded above, usually cordate below; petioles 2 to 5 cm.

Phenology

- **Blooming phenology**: early June through late August
- **Fruiting phenology**: late July through late August
- **Optimum time to identify**: The optimal identification period for this species is early June through late August

Other

- **Growth form**: Forb-prostrate
- **Vegetative reproduction**: Stoloniferous
- **Life cycle**: Perennial

- **Comments**: Associated Species: Poa pratensis and many other exotics at the naturalized sites; at possible native sites, some calciphiles such as Lobelia kalmii.

State status

Status and Natural Heritage Inventory documented occurrences in Wisconsin

The table below provides information about the protected status - state and federal - and the rank (S and G Ranks) for Seaside Crowfoot (*Ranunculus cymbalaria*). See the Working List Key for more information about abbreviations. Counties shaded blue have documented occurrences for this species in the Wisconsin Natural Heritage Inventory database. The map is provided as a general reference of where this species has been found to date and is not meant as a range map.

Summary Information	
State Status	THR
Federal Status in Wisconsin	none
State Rank	S2
Global Rank	G5
Tracked by NHI	Y

Habitats and landscapes

The Natural Heritage Inventory has developed scores indicating the degree to which each of Wisconsin's rare plant species is associated with a particular natural community or ecological landscape. This information is similar to that found in the Wildlife Action Plan for animals. As this is a work in progress, we welcome your suggestions and feedback.

General habitat information

- **Habitat description**: Found in sandy or muddy shores and marshes, ditches and harbors along Lake Michigan, and salted roadsides near the city of Superior.
- **Soils**: Wet, sometimes sandy, sometimes calcareous soils.

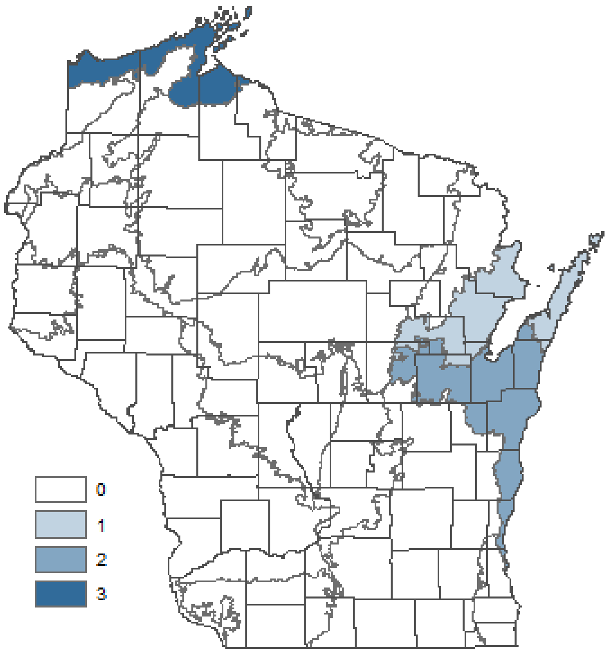
Natural communities

This table lists the natural communities that are associated with Seaside Crowfoot. Scores for natural community associations are: "significant" association (score=3), "moderate association" (score=2) or the species can be present but is only weakly associated with the community (score=1).

Natural communities	score
Transportation-Utility Corridor	2
Emergent Marsh	2
Northern Sedge Meadow	2

Ecological landscapes

This table lists the ecological landscape association scores for Seaside Crowfoot. The scores (3=High, 2=Moderate, 1=Low, 0=None) also correspond to the map.



Ecological landscape	score
Central Lake Michigan Coastal	2
Northern Lake Michigan Coastal	1
Superior Coastal Plain	3

Species guidance

The Endangered Resources Program has developed avoidance measures and management guidelines for plants on the Natural Heritage Working List. These are a work in progress, and we welcome your suggestions and feedback. Sources used in developing this information can be found here.

Avoidance measures

These are specific actions designed to avoid "take" (mortality) of this species.

- Avoid broadcast spraying of herbicides; use care with spot spraying.
- Avoid known individual plant locations and conduct operations elsewhere when they are least likely to cause damage. Ideally, this would involve frozen, snow-covered ground. However, in areas of the state where frozen conditions are unreliable, very dry soils late in the growing season might be the best available alternative. Consult with a biologist, if needed.

Management guidance

Management guidelines are additional considerations that may help maintain or enhance habitat for this species

- Maintain and restore open habitat through selective clearing and brushing.
- Avoid disturbance to shorelines and the forest-beach interface.
- Minimize disturbance to hydrology, including soil disturbance from rutting.
- This species is likely sensitive to water quality. Following BMPs around streams and buffering associated drainages will reduce eutrophication and prevent water quality degradation.

Other resources

Links to additional Seaside Crowfoot information

Other links related to vascular plants (all exit the DNR website)

- Wisconsin Flora
- NatureServe Explorer
- Atlas of Wisconsin Prairie and Savanna Flora - Wisconsin State Herbarium
- USDA - NRCS Plants Database
- USGS Midwestern Wetland Flora - field office guide to plant species
- eFloras
- Cofrin Center for Biodiversity Herbarium
- Intermountain Herbarium Grasses of North America
- Orchids of Wisconsin

Photos

Click to view a larger version. Please considering donating a photo to the Natural Heritage Conservation Program for educational uses. Photo use

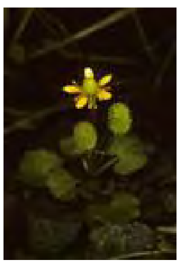


Photo by Thomas Meyer, Wisconsin DNR.

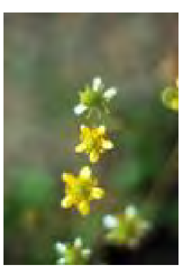


Photo © William S. Alverson.

Photo © June Dobberpuhl.

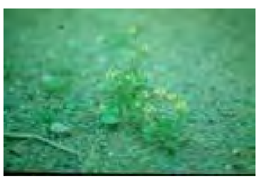


Photo © William S. Alverson.

Photo © Kitty Kohout.

Support for Wisconsin's rare plant information has been provided by the Division of Forestry, the Endangered Resources Fund and the Wisconsin Rare Plant Preservation Fund. To donate, visit the Natural Resources Foundation of Wisconsin [exit DNR].

Last revised: Tuesday, May 19, 2020

APPENDIX G

Cultural Resources Literature Review (Privileged and Confidential)

Stantec Consulting Services Inc.
322 East Michigan Street, Suite 200 Milwaukee, WI 53202-5005

August 5, 2022
File: 193707141

Attention: Leslie Eisenberg
State Historic Preservation Office
Wisconsin Historical Society
816 State Street
Madison, Wisconsin 53706

Via Email: leslie.eisenberg@wisconsinhistory.org

Dear Ms. Eisenberg

Reference: Cultural Resources Literature Review for the C. Reiss Port of Superior Infrastructure Improvement Project, Superior, Douglas County, Wisconsin

WHS # 22-0991

CONFIDENTIAL – NOT FOR PUBLIC DISCLOSURE

C. Reiss Company, LLC (C. Reiss) and the City of Superior propose the C. Reiss, Port of Superior, Infrastructure Improvements Project (the Project) in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin (Figure 1). The Project seeks to reactivate the existing C. Reiss Dock on Saint Louis Bay of Lake Superior. The Project consists of approximately 53 acres of private land (Project Area) located north of Winter Street and situated on the second dock east of US Highway 2 on Saint Louis Bay. Rehabilitation will consist of reconstruction of a dockwall, dredging along the dock's exterior, construction of a shop/office building, repair and extension of 7,060 linear feet of rail track that includes five switches, and the installation of various loading and weighing equipment.

As the Project plans to utilize federal funds from the US Department of Transportation (DOT) Maritime Administration (MARAD), it constitutes an undertaking under Section 106 of the National Historic Preservation Act, as amended (54 U.S.C. § 300101 et seq.). To satisfy the requirements of Section 106, MARAD initiated consultation with the Wisconsin State Historic Preservation Office (SHPO) on June 10, 2022. An email request for additional information was provided to the Project from the SHPO on June 13, 2022. This email requested the following:

1. Project plans and elevations.
2. An archaeological survey report for the area of direct effects (area appears disturbed but we do not know to what depth).
3. Information on how much, if any, of the old structure will be retained and whether any of what remains is eligible.

At C. Reiss' request, Stantec Consulting Services Inc. (Stantec) has prepared the following information to provide the information requested. To that end, we have included 1.) additional project descriptive text which describes the portions of the original dock structure that will be retained and references attached plans and elevations prepared for the Project, 2.) additional information regarding the soil and fill characteristics within the Project Area and the results of a visual investigation conducted by an archaeologist, and 3.) an assessment of whether any of the old dock structure is eligible for listing in the National Register of Historic Places (NRHP). A formal Phase I archaeological survey was not conducted for the Project at this time because hand excavation of contaminated surface soils poses an adverse health risk to archaeologists if a Phase I archaeological survey using shovel test methods was attempted.

Project Description

The Proposed Project would redevelop and modernize the existing 53-acre C. Reiss dock in Superior, Wisconsin. C. Reiss owns docks in both the Port of Duluth, Minnesota and Port of Superior, Wisconsin. They currently only operate out of the Duluth Port. However, due to increasing water levels that cause annual flooding at the Duluth Port, C. Reiss needs to relocate its operations from their dock in the Port of Duluth to their dock in the Port of Superior which has had industrial facilities within the Proposed Project Area for over 130-years. Since the C. Reiss facility in Superior has been unused for the last 30 years; the dock wall is stable but in poor condition and needs to be rehabilitated and repaired.

The Proposed Project would redevelop and modernize the existing C. Reiss dock with:

- 2,525 feet of dock wall repair consisting of driven steel sheet piles outboard of the existing cap, tremie concrete behind the upper section of sheet piles, resurfacing of the concrete cap and 3,500 square feet of fill behind the dock wall sections,
- Dredge of 50,000 cubic yards (yds^3) of contaminated sediment from the slip,
- Construction of a 5,000 square foot shop/office building,
- Installation of truck scale, rail scale, stacking conveyor and telescoping loading conveyor,
- Stormwater, utilities, and road improvements, and
- Repair and extension of track for a total of 7,060 lineal feet and the installation of five switches.

The proposed Project intends to retain much of the existing dock infrastructure and function as it had before it was abandoned 30 years ago, keeping with its historic usage. Concrete panels on the north portion of the Project will remain and accumulated organic material and sediment will be removed from the concrete panel pavement that makes up the dock surface. Similarly, an existing access road will be rehabilitated into the Project's main road. Concrete walls on the dock will remain except for portions that will be removed for the construction of a dock road. The concrete crane rails will also remain, as well as the original existing dock wall. However, a new dock wall will be built on the outside of the existing dock wall.

While design work for the Project is still underway, current plans are attached with information about the existing conditions within the Project Area (including portions of the structure that remain extant and will be retained), erosion control plan, and the proposed site plan and grading plan. The site plan begins on page 16 of the attached plan set and describes the location of new proposed infrastructure that will primarily be located within the southern section of the Project Area. The extant concrete panel pavement, concrete crane rails, and concrete walls present within the dock structure will be retained.

Environmental Setting/Soils

The Project lies within the Lake Superior lowland, an expanse of post glacial, lacustrine sands and red clays. The Project is adjacent to the natural harbor formed near the terminus of the St. Louis River with Lake

Superior known as St. Louis Bay. The harbor consists of an inner lagoon (St. Louis Bay) and outer lagoon (Superior-Allouez Bays) prior to merging with Lake Superior. The harbor is protected from open water via multiple spits which prevent shoreline degradation from wave erosion (Mengel, 1973). The natural harbor forms the industrial backbone of Superior, Wisconsin and Duluth, Minnesota by providing the deep-water passages and docks which support the historic Great Lakes shipping industry.

As described in the attached plan set, existing conditions section, numerous wetlands are present within the southern portion of the Project Area. These wetlands total approximately 21.24-acres of the 53-acre Project Area. Wetlands primarily consist of wet meadows, sedge meadows, shrub-carr, and hardwood swamps. A wetland delineation conducted for the Project suggests that none of the wetlands appear to have a surface hydraulic connection with the adjoining St. Louis River (Stantec, 2019). Following the wetland delineation, an artificial wetland exemption request was presented to the Wisconsin Department of Natural Resources (WDNR) to exempt wetlands W4 and W5 (17.5-acres) atop the former shipping dock from state regulation. As a result of the request, the WDNR determined that delineated wetlands W4 and W5 were not considered wetlands and therefore not subject to State of Wisconsin regulation.

According to the US Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), surficial soil in the Project Area consists of cut or fill (2030) representing the northern portion of the Project Area which has been altered for historic industrial operations; and Amnicon-Cuttre complex 0-4% (262B) on the southern portion of the Project Area typically related to clays and silt loams (NRCS, 2022).

Previous environmental investigation has confirmed soils have been historically altered in the Project Area as evidenced by extensive fill which is present up to at least 4 feet below grade (Antea Group, 2019). The fill often contains coal and wood debris among primarily silty sand and silt. Where fill materials are present the material overlies native lacustrine red clay. Stantec's Soil Investigation conducted approximately 25 soil borings and generated bore logs describing the depth of fill throughout the Project Area. Additionally, a geotechnical investigation was conducted for the Project which conducted an additional 10 borings within the Project Area. These bore logs suggest that fill is present within the southern portion of the Project Area to a depth between 3 and 4 feet, well below the depth of standard shovel testing methods. Fill increases in depth to the northern portion of the Project Area as described in the attached Generalized Geologic Cross Sections drawing and bore logs.

Soil Investigation

Former dock operations included petroleum product and open-air coal storage and transloading, and coal briquet manufacturing from the late 19th Century through the late 20th Century. Soil contamination resulting from past petroleum release(s) and the presence of industrial fill in surficial soils is documented at an existing, open WDNR Bureau for Remediation and Redevelopment Tracking System (BRRTS) case on the Proposed Project area (BRRTS# 03-16-000320 MURPHY MARINE TERMINAL), with multiple BRRTS cases present at the east-adjoining property that have documented migration of petroleum contamination impacting soil and/or groundwater at the Proposed Property (WDNR, 2022). These include:

- BRRTS# 02-16-297977 AMOCO OIL BARGE DOCK - FMR BARGE DOCK (closed),
- BRRTS# 02-16-297979 AMOCO BARGE DOCK - OW SEPARATOR & LOAD RACK (open), and
- BRRTS# 02-16-117873 AMOCO BARGE DOCK - MANIFOLD & AST AREA (open).

On December 9, 2021, Stantec geologists performed a limited soil investigation at the Project Area to evaluate soil quality in the area of a planned onsite stormwater retention pond (Stantec, 2021). The results of the soil sampling indicated that fill materials present in shallow soils (zero to three feet below grade) contained Resource Conservation and Recovery Act (RCRA) metals and polycyclic aromatic hydrocarbons (PAHs) constituents at concentrations above Chapter NR 720 WAC residual contaminant levels (RCLs). WDNR requested that Stantec prepare a formal Notification for Hazardous Substance Discharge (Form 4400-225). The BRRTS number for this case is 02-16-589248.

Based on a review of historical case files associated with the property and soil sampling results from recently completed soil sampling activities, identified contamination appears to be associated with the presence of historical fill observed in surficial soils across much of the property, petroleum contamination that has migrated onto the property, or from past uses within the Project Area. Therefore, additional environmental investigation was completed to further evaluate the lateral and vertical extent and environmental quality of identified fill and the environmental quality of underlying clay soils. The results of these activities are being used to develop a materials management plan related to upcoming Project redevelopment and, ultimately, to obtain case closure. Remediation and ultimate capping of contaminated material on the property will reduce direct contact hazards and be beneficial to those that work/live (>4,700 feet from the Property) in the area.

In May 2022, Stantec conducted additional soil sampling to assess surficial/fill and underlying native soil quality across the Property, as well as to determine future options for onsite soil management of excavated/displaced soils in areas of proposed development (Stantec, 2022d). The results of the assessment indicate that RCRA metals, PAHs, and petroleum volatile organic compound concentrations above NR 720 soil standards are present in the Project Area and are associated with the presence of property wide black granular fill and historic petroleum releases currently being investigated in association with open east- and south-adjoining Amoco BRRTS cases (02-16-297979, 02-16-117873 and 02-16-000331).

Due to PAHs and RCRA metals present in fill at concentrations greater than direct contact standards in surficial soils across the Property, hand excavation of surface soils poses an adverse health risk to archaeologists who would conduct a Phase I archaeological survey using shovel test methods. Proposed engineered barriers preventing direct contact with residual fill/impacted soils will allow existing fill and soil to be managed onsite for beneficial reuse.

Wisconsin Historic Preservation Database Review

On April 1, 2022, Stantec reviewed the Wisconsin Historic Preservation Database (WHPD) for previously recorded historic structures, archaeological sites, cemeteries, burial sites, and other cultural resources within the Project Area and 0.5-mile buffer. The following subsections describe the results of Stantec's WHPD review.

Previous Archaeological Surveys

No archaeological surveys have been conducted within the Project Area, while three previous archaeological surveys have been conducted within the 0.5-mile buffer (Table 1; Figure 2). The surveys were undertaken for projects concerning construction of the Arrowhead Bridge (Penman 1978), improvements to US Highway 2 (Shillinglaw 2012), and the extension of a railroad line (Hendrickson 1994). All these previous surveys yielded negative results for cultural resources.

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

Table 1. Previous Archaeological Surveys within the 0.5-Mile Buffer.

Survey Number	Year	Distance from Project Area	Results/Sites Found
12-0908	1978	1,800 feet South	No sites found within the Project Area; no further investigations recommended
79-0577	2012	1,900 feet South	No sites found within the Project Area; no further investigations recommended
94-0121	1994	2,100 feet East	No sites found within the Project Area; no further investigations recommended

Archaeological Sites

No archaeological sites have been recorded within the Project Area, while one site is recorded within the 0.5-mile buffer (Figure 2). Site DG-0111, also known as Clarence (1930), is the wreck of a small gas screw vessel that exploded in 1938. The site is located approximately 1,000 feet east of the Project Area at the Standard Oil dock, Superior Harbor, but its actual location and condition have not been confirmed by field investigation.

Cemeteries and Burial Sites

No recorded cemeteries or burial sites are located within the Project Area or the 0.5-mile buffer (Figure 2).

Historic Structures

While no previously recorded historic structures lie within the Project Area, twelve historic structures are recorded within the 0.5-mile buffer (Table 2; Figure 2). These structures consist of three railroad-related repair shops/roundhouses, three warehouses, two industrial buildings, a water utility structure, a privy, a grain elevator, and a dock/pier. Six of the structures are associated with the Great Northern Railroad Yards (Architecture and History Inventory Numbers [AHI Nos.] 17590-17596), two with Galena Signal Oil Company (AHI Nos.17892-17893), one with Ajax Forge Company (AHI No. 17895), one with Stott Briquet (AHI No. 17896), and one with Great Northern Grain Elevators (AHI No. 17783). When the date of construction is known, these structures date between 1899 and 1975. The Wisconsin State Historic Preservation Office (SHPO) has determined that four of these structures, AHI Nos. 17590, 17594, 17595, and 17783 are potentially eligible for listing in the National Register of Historic Places (NRHP). However, review of available aerial imagery indicates that all these structures have been demolished, except for AHI No. 17783. The WHPD notes that the remaining eight structures within the 0.5-mile buffer are likely ineligible for listing in the NRHP.

Table 2. Recorded historic structures within the 0.5-Mile Buffer.

AHI Structure Number	Type of Structure	Year Built	Distance from APE	NRHP Status
17590	Repair shop/roundhouse--Demolished	1899	0.46 mile	Potentially Eligible
17591	Repair shop/roundhouse	1899	0.40 mile	Not Eligible
17593	Repair shop/roundhouse	1914	0.48 mile	Not Eligible
17594	Warehouse--Demolished	1899	0.48 mile	Potentially Eligible
17595	Water utility--Demolished	1899	0.41 mile	Potentially Eligible
17596	Privy--Demolished	1899	0.48 mile	Not Eligible
17783	Grain elevator	1900	0.50 mile	Potentially Eligible
17883	Dock/pier	1975	0.45 mile	Not Eligible
17892	Warehouse	1916	0.45 mile	Not Eligible
17893	Warehouse	1916	0.45 mile	Not Eligible
17895	Industrial building	1917	0.08 mile	Not Eligible
17896	Industrial building	1909	0.09 mile	Not Eligible

Note: Shaded cells denote structures within Project Area.

Historic Map and Atlas Review

The Atlas of Great Lakes Indian History (Tanner 1987) was reviewed for maps and land use of the Project Area prior to the historic period. Tanner (1987) notes that Native American groups hunted deer and moose along the shoreline of Lake Superior during the pre-contact era. During the Woodland Period, which occurred between 1400 and 1700 AD, the area was associated with Algonquian people, while it was occupied by the Cree during the Iroquois Wars between 1641 and 1701 AD (Tanner 1987). By 1768 the Ojibwa occupied the area and by 1810 two villages, Ford du Lac and Fort St. Louis, were located at the edge of Lake Superior near the Project Area (Tanner 1987). Between 1842 and 1872 the Project Area and the land surrounding Lake Superior was ceded to the United States. Lands ceded by the Ojibwa in 1863 were some of the last major cessions in the area (Tanner 1987). The Project Area does not retain any tribal lands today.

Stantec archaeologists reviewed historic plat and atlas maps to provide greater detail on the nature of the Project Area. Upon its construction, maps depict the Project Area as used for commercial docking and shipping, while the original Lake Superior shoreline is depicted in a southwest to northeast orientation on the

1871 plat (Mendel 1871). This shoreline was intact until circa 1907, at which time it was altered by the construction of docks that extended into Lake Superior (Sigma 2019).

The first docks in this area of Superior were built in the mid-to-late nineteenth century and were first depicted on the 1889 map (Largo 1889). The Standard Oil Company built a narrow wharf along the eastern edge of the Project Area circa 1891 (Klovdahl 1891). The end of this wharf consisted of a 200-foot by 300-foot platform (Sigma 2019). The Posen Printing House (1890) and Klovdahl (1891) maps depict railyards associated with Eastern Minnesota and St. Paul and Duluth railroads south of the Project Area and represent several coal docks east of the Project Area. Klovdahl's (1891) map also shows the Northwestern Distribution Depot within the Project Area.

Doenitz' (1906) map continues to show the shipping docks. In 1907, the Berwind Fuel Company filled the area west of the Standard Oil Company wharf to form the present-day C. Reiss Coal Dock (Sigma 2019). The dock immediately west of the Project Area is initially identified as the C. Reiss Coal Dock in 1914 (Sanborn 1914). This dock is approximately half the size of its present-day proportions. In addition, the US War Department Corps of Engineers (1914) identifies the Berwind Fuel Company as the owners of the Project Area in 1914.

By 1934, the dock west of the Project Area is depicted at its modern extent and is identified as under the ownership of C. Reiss. Berwind Fuel Company continues to be identified as the owner of the Project Area at this time and a briquet plant noted as the world's largest is depicted within the Project Area (Superior Association of Commerce 1934). The Berwind briquet plant building was constructed at the base of the Project Area between 1892 and 1899. It was the site of either a charcoal plant or blast furnace for the York Company from 1893 through 1895. It was then occupied by twine manufacturers between circa 1895 and 1912. In 1912, the Berwind Fuel Company converted the building into a coal briquet plant, which at one point produced 3,300 tons of coal briquets per day (Sigma 2019). The briquet plant operated until circa 1965. The plant was demolished sometime between 1970 and 1975 (Sigma 2019). C. Reiss and the Berwind Fuel Company continued to occupy these docks until at least 1966 (Unknown 1966).

The 1954 Superior 7.5-minute United States Geological Survey (USGS) topographic quadrangle depicts the docks with various buildings and with rail lines running throughout the Project Area (USGS 1954). Aerial photography shows that the Project Area was in use in 1952, however it fell into disuse sometime between 1981 and 1991. It continued to be vacant between 1991 and the present day (NETROnline 2022).

The Project Area was used first by the Standard Oil Company and later by the Amoco Oil Company to transfer petroleum products including kerosene and lubricant from 1891 through circa 1993. Oil was stored in aboveground storage tanks (ASTs) located to the south of the dock that were connected to an oil transfer building via pipeline and then to railcars. The oil transfer building ceased operations in the late 1950s and was later demolished (Sigma 2019).

The Project Area was used for open-air storage of up to 800,000 tons of coal from 1907 through sometime in the late 1960s. Dock occupants during this period included the Berwind Fuel Company and later the C. Reiss Coal Company. The dock was then used by C. Reiss for the receipt of dry bulk goods from sometime between 1974 and 1987 through sometime after 1999 (Sigma 2019).

C. Reiss Superior Fieldwork Results

Historical Structure Survey Results

On 4 May 2022 a field reconnaissance review of all WHPD recorded historic structures occurred within 0.5-miles of the Project Area. There are a total of 12 historic structures within the 0.25-mile buffer (Figure 2 and Table 3). These structures include AHI Nos. 17590, 17591, 17593, 17594, 17595, 17596, 17783, 17883, 17892, 17893, 17895, and 17896.

A public right-of-way reconnaissance of these properties verified that AHI Nos. 17590, 17594, and 17595 have been demolished. Direct effects to the remaining historic structures will not occur based on their distance from the Project Area. Indirect effects to the extant buildings would be confined to visual effects. Properties identified as AHI Nos. 17591, 17593, 17596, 17896, 17892, and 17893 are screened from the Project Area by vegetation and modern industrial buildings, while AHI Nos. 17783 and 17883 are screened from the Project Area by the Midwest Energy Resources facilities, including a large area of coal storage. Architecture and History Inventory Number 17895 is visible from the Project Area; however, the proposed Project is in keeping with the industrial character of the surrounding area and would not create a negative visual impact to this structure (Figures 4–10). Photos of AHI Nos. 17892 and 17893 were not taken during the structure survey.

Visual Inspection Methods

Visual inspection of the Project Area by Stantec archaeologist Kathleen Bindley occurred on 22 June 2022, the purpose of which was to document conditions within the Project Area and to assess the area's potential to contain significant archaeological resources. Ms. Bindley walked portions of the Project Area and took photographs to complete this visual inspection. Data points representing photograph locations were collected using the ArcGIS Field Maps application paired to ArcGIS Online software. Information gathered during the visual inspection was also compared to reports documenting other work previously completed within the Project Area, such as the Environmental Assessment and Soils Investigation.

Visual Inspection Results

The visual inspection of the Project Area resulted in the observation of wetland conditions within its southern part and the documentation of architectural ruins and scattered historic refuse along the Project Area's west and central parts. Photographs document the results of this visual inspection (Figure 11).

Work began in the southwest corner of the Project Area, where a gravel access lane begins and extends north along the property's west side. From this location Ms. Bindley observed wetland vegetation including cattails and reed canary grass in the Project Area. Soil berms and indications for subsurface utilities including a sewer line were also noted in the Project Area's southern part. Photographs were collected at the Project Area's southwest and southeast corners and no structural remains were observed in this part of the property (Figure 11a).

After documentation in the Project Area's southern part, work continued along the property's west margin, from which a gravel access lane extends to the north and east to the property's center. A concrete structural foundation measuring approximately 60 feet north-south by 30 feet east-west was observed along the Project Area's west side, approximately 525 feet north of Winter Street (Figure 11b, photograph 3). This foundation likely coincides with a structure represented in aerial imagery as early as 1938 (Wisconsin Historic Aerial Imagery Finder 1938). Glass, metal, and brick cultural materials were noted in the foundation's vicinity (Figure 11b, photograph 4).

Visual inspection of the Project Area continued north along the gravel access lane, around which were observed a ferrous metal drum (Figure 11c, photograph 5), a gate and concrete blocks (Figure 11c, photograph 6), and several concrete piles of structural ruins and/or rubble (Figure 11d). Also observed were two east-west oriented concrete walls (Figure 11e) and the remnant of a transportation track (Figure 11f) which will be retained by the Project. These latter features are believed to correspond to the 10-foot-tall concrete walls and the railroad sidings identified on Sheet four of the Sanborn (1914) map of Superior, Wisconsin. None of these components were investigated at a subsurface level, and it is believed that all of them are associated with the Berwind Fuel Company's use of the property during the twentieth century.

Summary and Recommendations

Stantec prepared this additional information to support SHPO review of the Project. While a Phase I archaeological survey involving shovel testing was not conducted within the Project Area due to the presence of contaminated soils that would pose a health hazard to archaeologists if shovel tests were excavated, a visual inspection of the Project Area was conducted.

The results of the cultural resources database review indicate that no previously recorded archaeological sites or historic structures are present within the Project Area. One archaeological site and twelve historic structures are present within the 0.5-mile buffer. The archaeological site would not be impacted by the Project due to its distance from the Project. Three of the historic structures have been demolished. Direct impacts to the nine remaining structures would not occur based on their distance from the Project Area. Indirect (visual) impacts could occur to the nine remaining historic structures, but more modern structures situated between the Project Area and the historic structures would provide some level of visual screening to reduce potential visual impacts. Additionally, the proposed Project would be in keeping with the surrounding industrial character of the area and would not result in an increased visual impact to the historic structures in the vicinity.

Visual inspection of the Project Area resulted in the documentation of a gravel access lane, berms, wetland vegetation, concrete ruins and rubble, two concrete walls, and the remnants of a transportation track. When compared to archival documents it appears that these cultural components are associated with Berwind Fuel Company's use of the property during the twentieth century and at least three of the components appear on Sheet 4 of the Sanborn (1914) map of Superior. Archival documents also indicate that the Project Area once contained the largest coal briquet plant in the world (Superior Association of Commerce 1934). However, a comparison of archival records to the results of the Project Area's visual inspection demonstrate that the property has been significantly altered over time. For example, the Sanborn (1914) map details several structures on the Berwind Fuel Company's property, including a machine shop, manufacturing facility, briquet conveyors, and two movable steel coal handling bridges. Visual inspection indicates that none of these structures are extant in the Project Area today. Furthermore, aerial imagery from 1981 captures the aftermath of structure demolition within the Project Area and suggests that significant soil disturbance occurred during the demolition process (NETROnline 2022). In sum, while archival documents provide context and evidence of potentially significant historic structures within the Project Area, a visual inspection in June 2022 demonstrates that these structures have been demolished, resulting in the property's loss of integrity. As a location with evidence for prior disturbance, it is unlikely that the Project Area has the potential to yield significant, intact, subsurface cultural deposits.

August 5, 2022
Leslie Eisenberg

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

A review of the WHPD, historic maps, and aerial imagery provides further support for the conclusion that the Project Area has a low potential to contain cultural resources eligible for listing in the NRHP. While prehistoric Native Americans likely utilized the Project Area in the past, historic alterations have likely disturbed and/or destroyed any prehistoric sites that would have existed in the area. The major historic alteration to the Project Area occurred during the early nineteenth century, when a dock facility was construction along the Lake Superior shoreline. The construction of this dock was likely accomplished using imported fill material and analysis of modern aerial photography suggests that up to 65 percent of the APE is covered by concrete. The historic, industrial use of the Project Area may have had significance in the past, as a 1934 map locates the world's largest coal briquet plant in the area, but continued operations and upgrades likely altered this industrial facility, and its subsequent abandonment and demolition has resulted in significant impacts to the integrity of the historic materials currently within the Project Area.

Soil investigations indicate that the fill soils across the Project Area have been contaminated due to the areas past use as a petroleum and coal dock. Additional subsurface investigations would expose archaeologists to these contaminates and would pose a health and safety risk.

Therefore, Stantec recommends a finding of No Adverse Effects and further recommends that the Project be allowed to proceed as planned without additional cultural resources investigation.

Regards,

Stantec Consulting Services Inc.

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Senior Archaeologist
Phone: 316-634-6218
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Rebekah Gansemer credentials
Archaeological Technician
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Attachments: Figure 1. Project Location and Local Topography
Site Plans
Generalized Geologic Cross Sections
Soil Investigation Bore Logs
Figure 2. Wisconsin Historic Preservation Division (WHPD) Database Review Results
Figure 3. Visual Inspection Photo Location
Figures 4-10. Historic Structure Photos
Figure 11. Project Area Photographs, 22 June 2022
Historical Maps and Aerial Images

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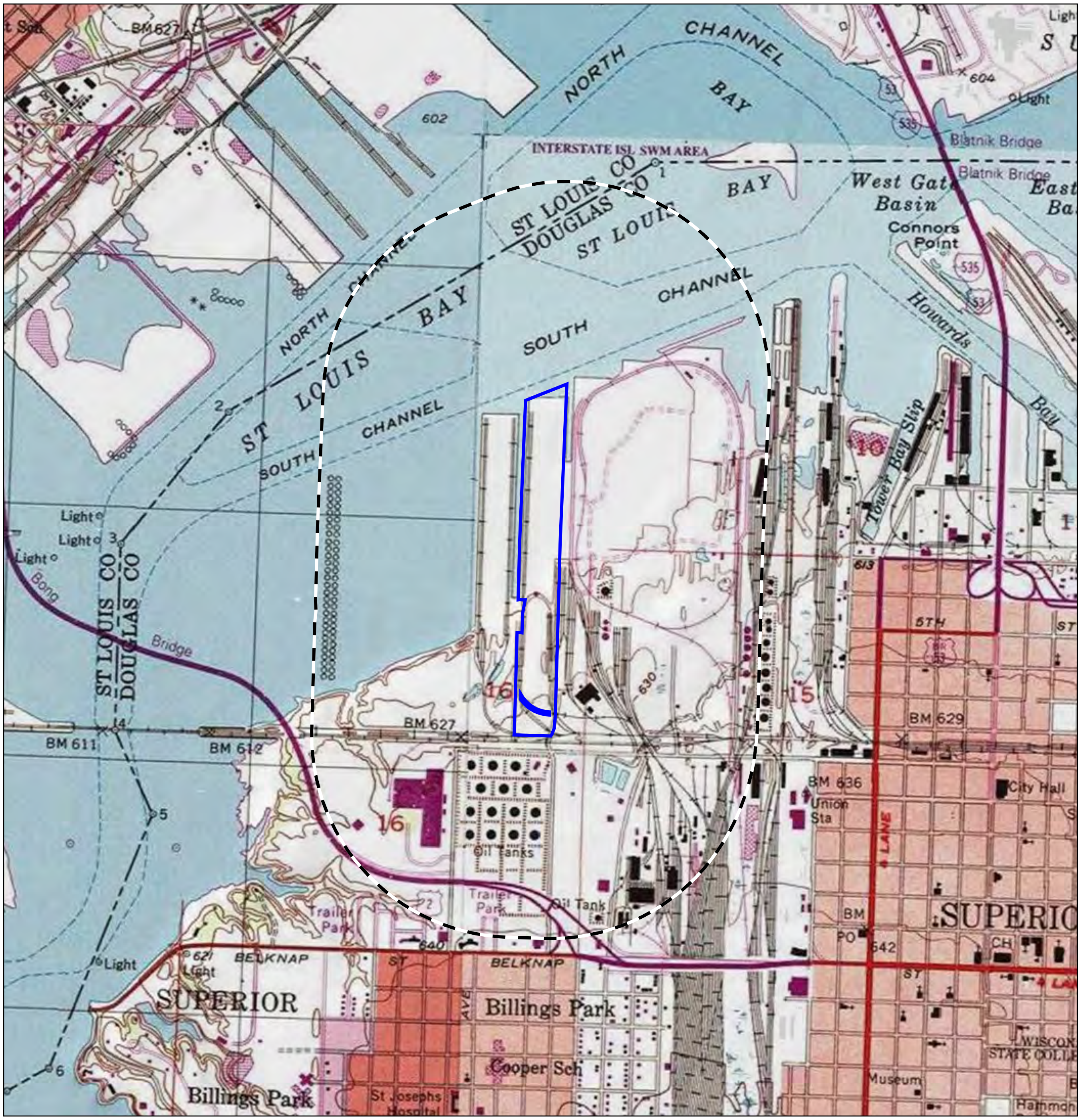
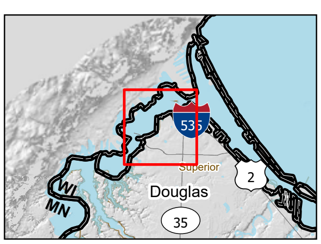
Attachments





Legend
- Project Boundary
- 1/2 Mile Project Buffer

0 1,000 2,000 Feet
(At original document size of 8.5x11)
1:24,000

N

Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

Prepared by AJS on 2022-05-09
TR by JS on 2022-05-09
IR by BB on 2022-05-19

Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Cultural Resources Report

Figure No.
1

Title
Project Topography and Location

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, WDNR, WisDOT
3. Background: USGS 7.5' Topographic Quardangles

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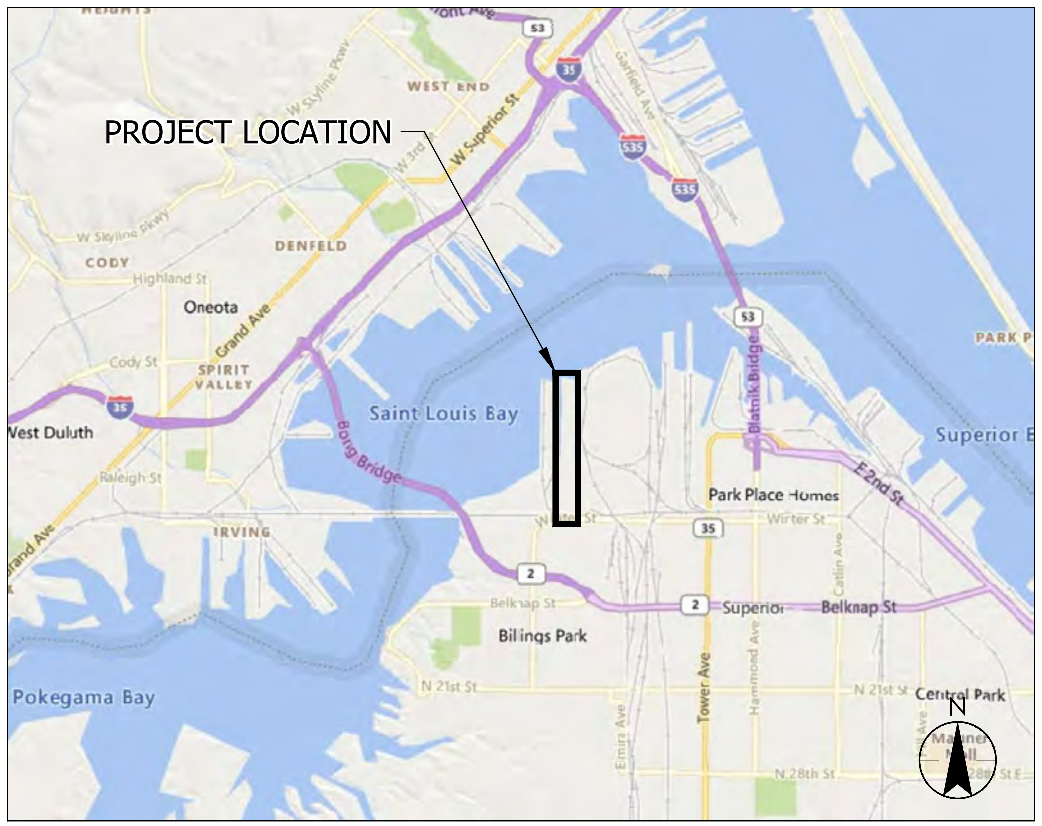
C. REISS DOCK

C. REISS COMPANY, LLC

ST. LOUIS BAY, SUPERIOR, WISCONSIN



VICINITY MAP

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LOCATION MAP

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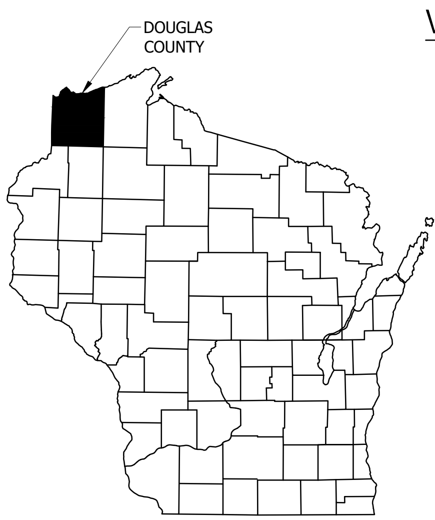

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EA201	BUILDING A LIGHTING PLAN
EA301	BUILDING A POWER PLAN
EA401	BUILDING A SYSTEMS PLAN
EB201	BUILDING B LIGHTING PLAN
EB301	BUILDING B POWER PLAN
EB401	BUILDING B SYSTEMS PLAN
E801	SCHEDULES

ENGINEER P.E.
NO. ------

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TITLE SHEET

C. REISS DOCK
C. REISS COMPANY, LLC
ST. LOUIS BAY, SUPERIOR, WI

DATE OF ISSUANCE
July 12, 2022

NO	REVISION	DATE

SURVEY	JN
DRAWN	AJR
DESIGNED	AJR
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APPROVED	###
PROJ. NO.	193707141

SHEET NUMBER
G0.01

LEGEND

INDICATES FOUND 1" IRON PIPE
INDICATES SET 1" IRON PIPE
INDICATES FOUND CHISELED CROSS
SANITARY MANHOLE
SANITARY CLEANOUT OR VENT
M.I.S. MANHOLE
UNKNOWN MANHOLE
STORM MANHOLE
INLET (ROUND)
INLET (SQUARE)
CURB INLET
STORM SEWER END SECTION
GAS VALVE
GAS METER
WATER VALVE
HYDRANT
WATER MANHOLE
WATER SERVICE CURB STOP
WELL HEAD
STAND PIPE
WALL INDICATOR VALVE
POST INDICATOR VALVE
LIGHT POLE
SPOT/YARD LIGHT
UTILITY POLE
GUY POLE
GUY WIRE
ELECTRIC MANHOLE
ELECTRIC PEDESTAL
ELECTRIC METER
TELEPHONE MANHOLE
TELEPHONE PEDESTAL
CABLE PEDESTAL
CONTROL BOX
FIBER OPTIC SIGN
TRAFFIC LIGHT
COMMUNICATION MANHOLE
BOLLARD
SOIL BORING/MONITORING WELL
WATER SURFACE
WETLANDS FLAG
MARSH
FLAGPOLE
PARKING METER
SIGN
MAILBOX
RAILROAD CROSSING SIGNAL
HANDICAP SPACE
CONIFEROUS TREE
DECIDUOUS TREE

S — SANITARY SEWER
FM — FM — FM — FORCE MAIN
STO — STORM SEWER
W — WATERLINE
G — MARKED GAS MAIN
E — MARKED ELECTRIC
OHW — OVERHEAD WIRES
T — MARKED TELEPHONE
TV — MARKED CABLE TV LINE
FO — MARKED FIBER OPTIC
X — FENCE

NEW TOPOGRAPHIC SYMBOLS

BOLLARD
SANITARY CLEANOUT
MANHOLE
SANITARY OR STORM LIFT STATION
STORM SEWER BEEHIVE CATCH BASIN
STORM SEWER CATCH BASIN
STORM SEWER FLARED END SECTION
STORM SEWER OUTLET STRUCTURE
STORM SEWER OVERFLOW STRUCTURE
CURB BOX
FIRE HYDRANT
WATER REDUCER
VALVE
RIP RAP
DRAINAGE FLOW
PEDESTRIAN RAMP

EXISTING TOPOGRAPHIC LINES

RETAINING WALL
FENCE - BARBED WIRE
FENCE - CHAIN LINK
FENCE - DECORATIVE
FENCE - STOCKADE
FENCE - WOOD
FENCE - ELECTRIC
GUARD RAIL
TREE LINE
WETLAND

SURVEY LINES

BOUNDARY
NEW CENTERLINE
EXISTING CENTERLINE
EXISTING EASEMENT LINE
NEW EASEMENT LINE
FLOOD PLAIN BOUNDARY
EXISTING LOT LINE
NEW LOT LINE
EXISTING RIGHT-OF-WAY
NEW RIGHT-OF-WAY
SETBACK LINE

NEW UTILITY LINES

FORCE MAIN
SANITARY SEWER
SANITARY SERVICE
STORM SEWER DRAINTILE
STORM SEWER
WATER MAIN
WATER SERVICE
PIPE CASING

FUTURE UTILITY LINES

FORCE MAIN
SANITARY SEWER
SANITARY SERVICE
STORM SEWER DRAINTILE
STORM SEWER
WATER MAIN
WATER SERVICE
PIPE CASING

CONCRETE CURB AND GUTTER

EXISTING
NEW
FUTURE
DEMOLITION

GRADING INFORMATION

952 / 950 — EXISTING CONTOUR MINOR
EXISTING CONTOUR MAJOR
952 / 950 — NEW CONTOUR MINOR
NEW CONTOUR MAJOR
NEW GRADING LIMITS / SLOPE LIMITS
744.40 745.47 × STA:5+67.19 980.87 — NEW SPOT ELEVATION
743.21 × 743.78 — EXISTING SPOT ELEVATION
4:1 — RUN:RISE (SLOPE)

ABBREVIATIONS

AD	ALGEBRAIC DIFFERENCE
BV	BUTTERFLY VALVE
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
℄	CENTER LINE
CL.	CLASS
CMP	CORRUGATED METAL PIPE
CO	CLEAN-OUT
DIP	DUCTILE IRON PIPE
EL/ELEV	ELEVATION
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EX	EXISTING
FES	FLARED END SECTION
F/F	FACE TO FACE
FM	FORCE MAIN
F.O.	FIELD ORDER
GV	GATE VALVE
HP	HIGH POINT
HWL	HIGH WATER LEVEL
INV	INVERT
K	CURVE COEFFICIENT
LP	LOW POINT
MH	MANHOLE (SANITARY)
NTS	NOT TO SCALE
NWL	NORMAL WATER LEVEL
PC	POINT OF CURVE
PCC	COMPOUND CURVE
PI	POINT OF INTERSECTION
⅊	PROPERTY LINE
PPVC	PERFORATED POLYVINYL CHLORIDE PIPE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT-OF-WAY
SS	STORM SEWER STRUCTURE
STA	STATION
TCE	TEMPORARY CONSTRUCTION EASEMENT
TNH	TOP NUT HYDRANT
TYP	TYPICAL
VC	VERTICAL CURVE
WM	WATER MAIN

HATCH PATTERNS

EXISTING	NEW	DEMOLITION	SECTION
CONCRETE	CONCRETE	CONCRETE DWY/WALK	EARTH
ASPHALT ROAD/DWY	ASPHALT ROAD/DWY	ASPHALT ROAD/DWY	ROCK
PAVERS	PAVERS	PAVERS	SAND
			GRAVEL

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G0.02

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0 160' 320'

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EXISTING CONDITIONS AND DEMO SHEET INDEX

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SURVEY	JN
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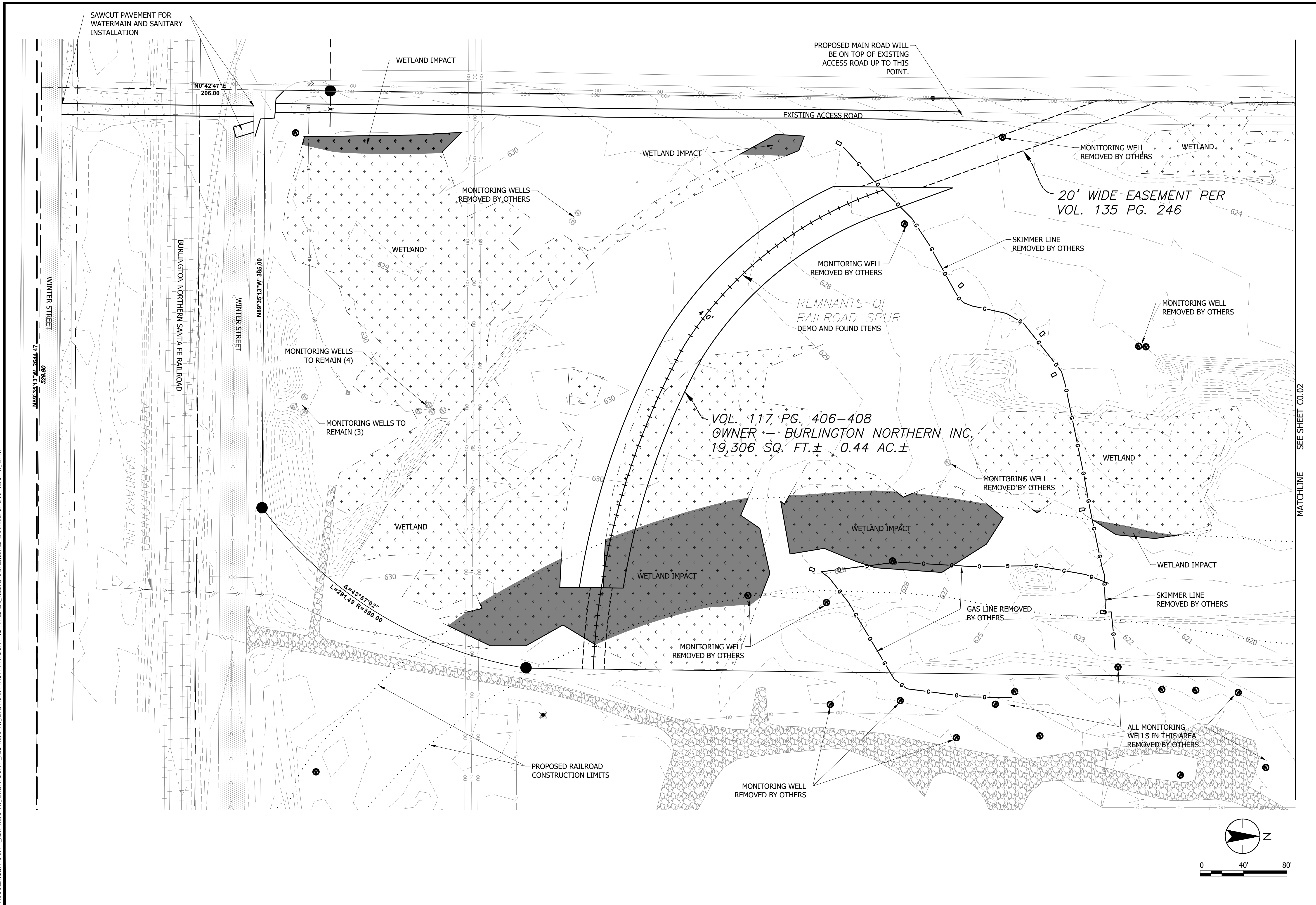

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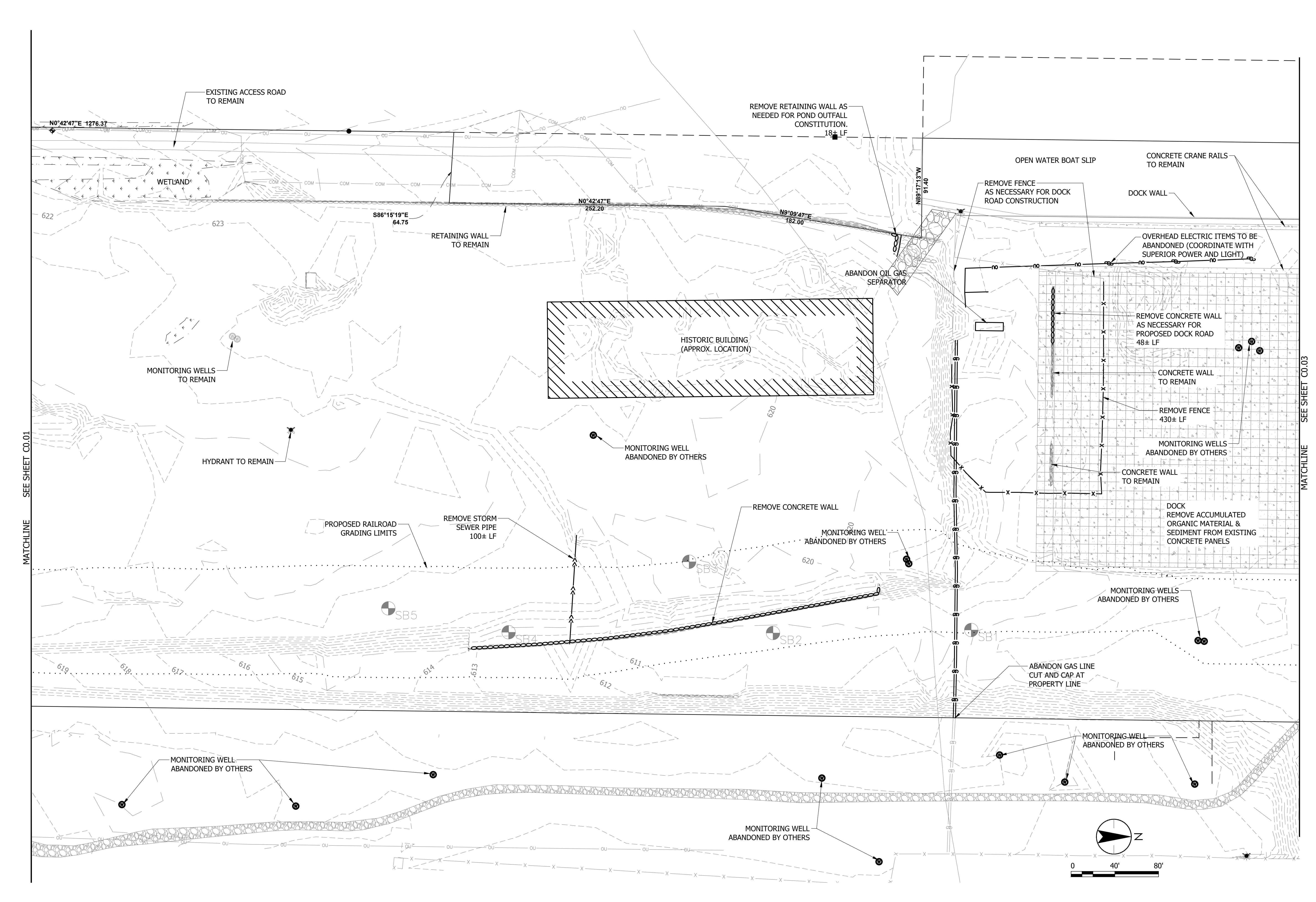

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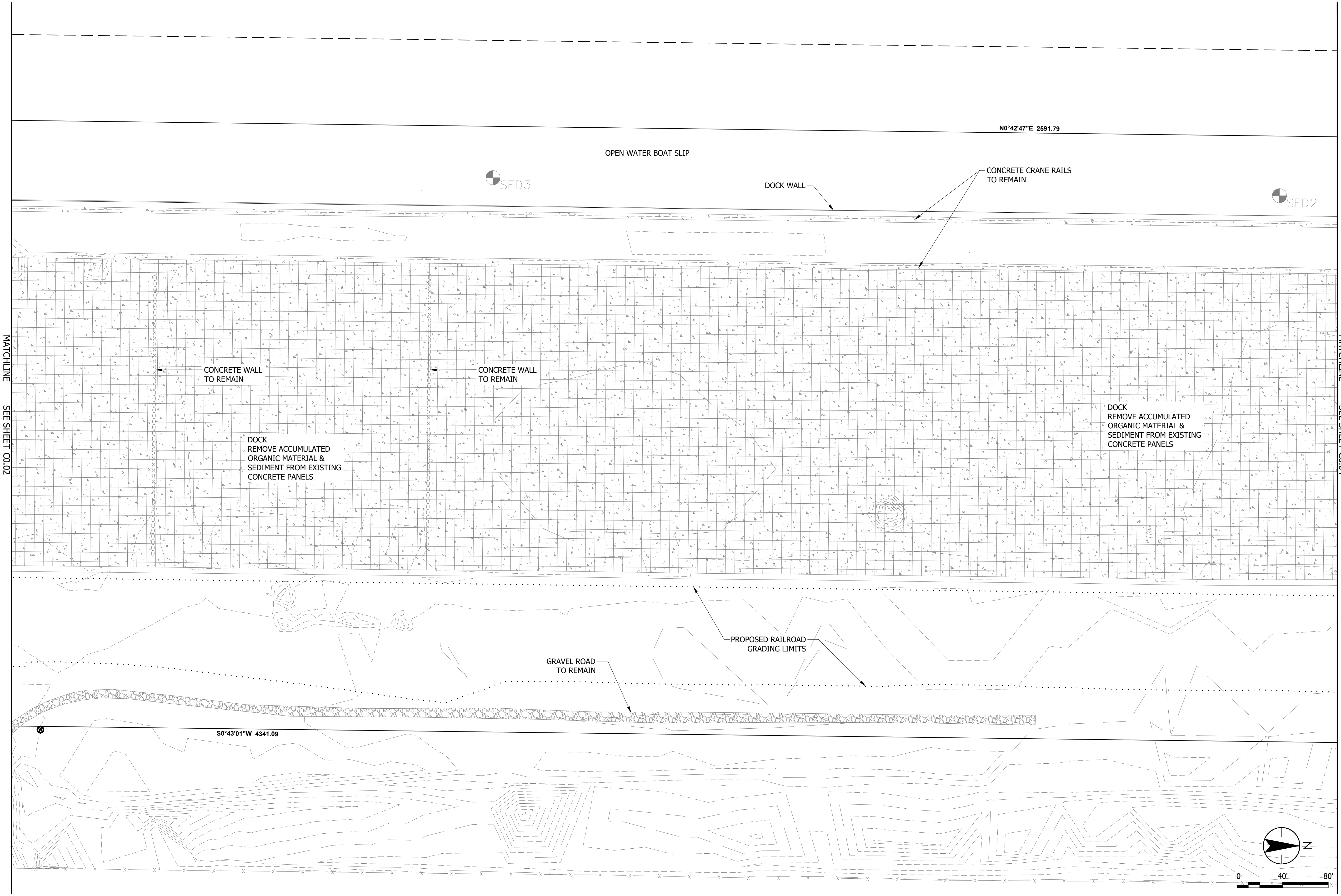

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NO	REVISION	DATE

SURVEY	JN
DRAWN	AJR
DESIGNED	AJR
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APPROVED	AJR
PROJ. NO.	193707141

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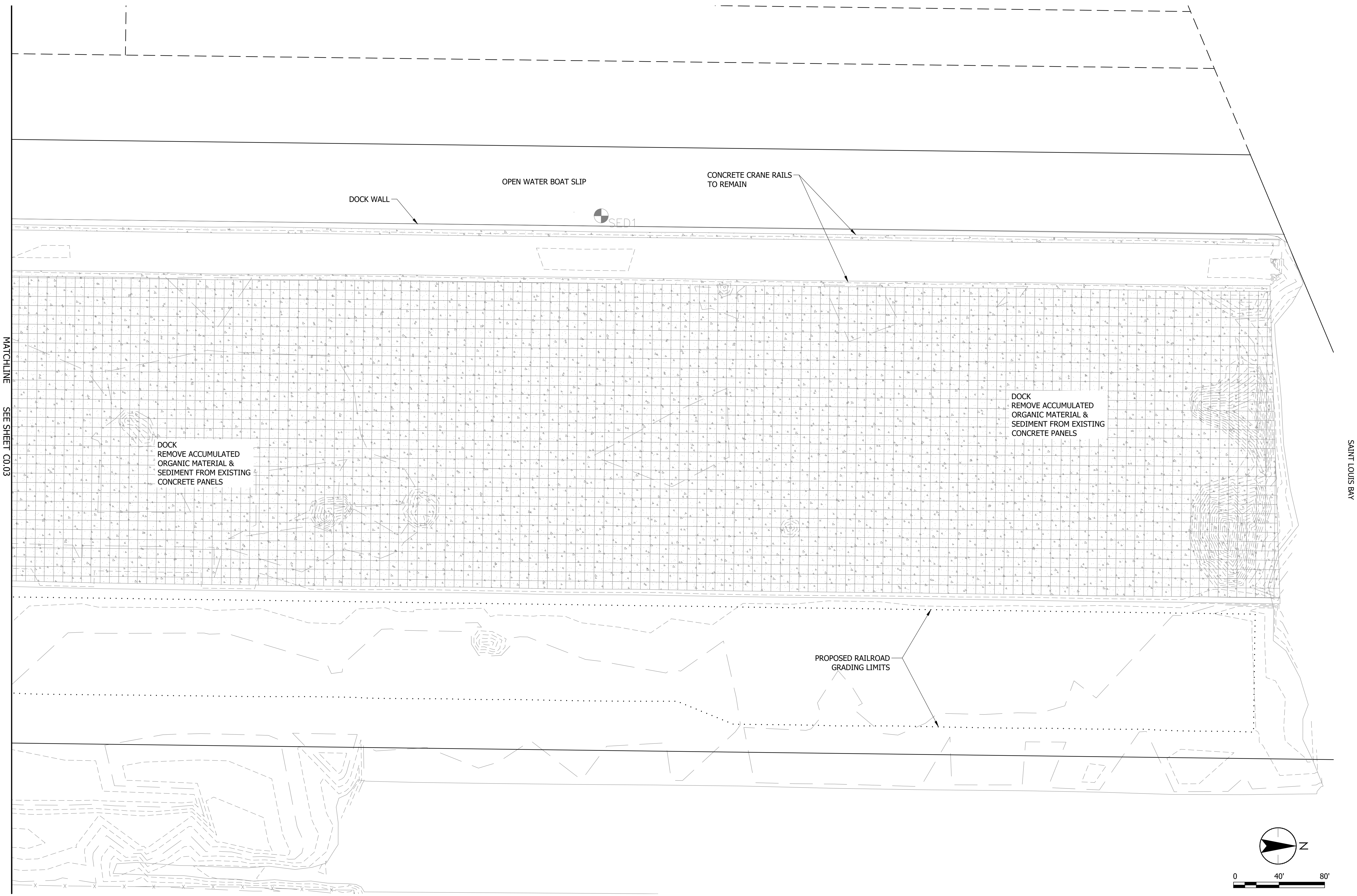

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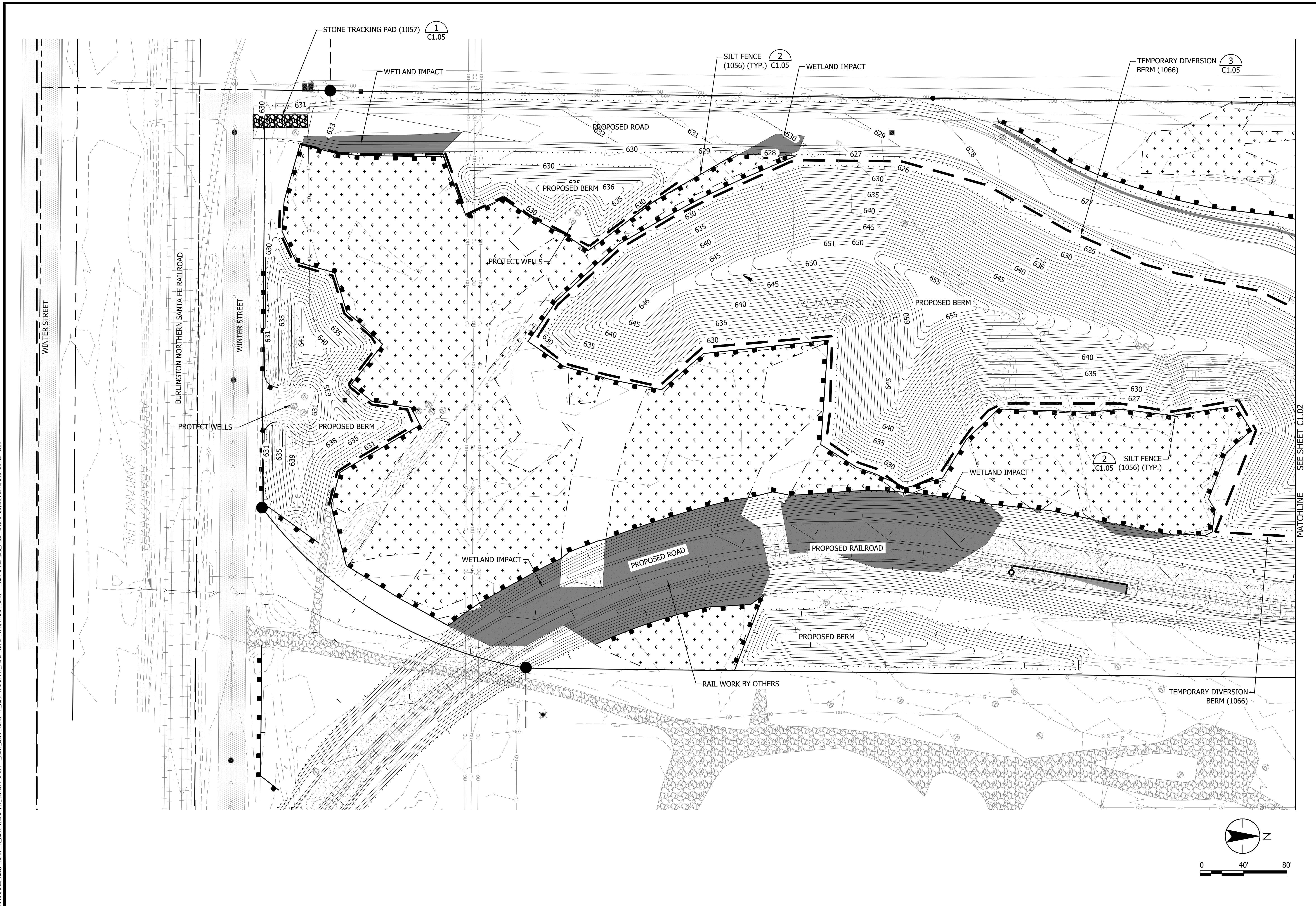

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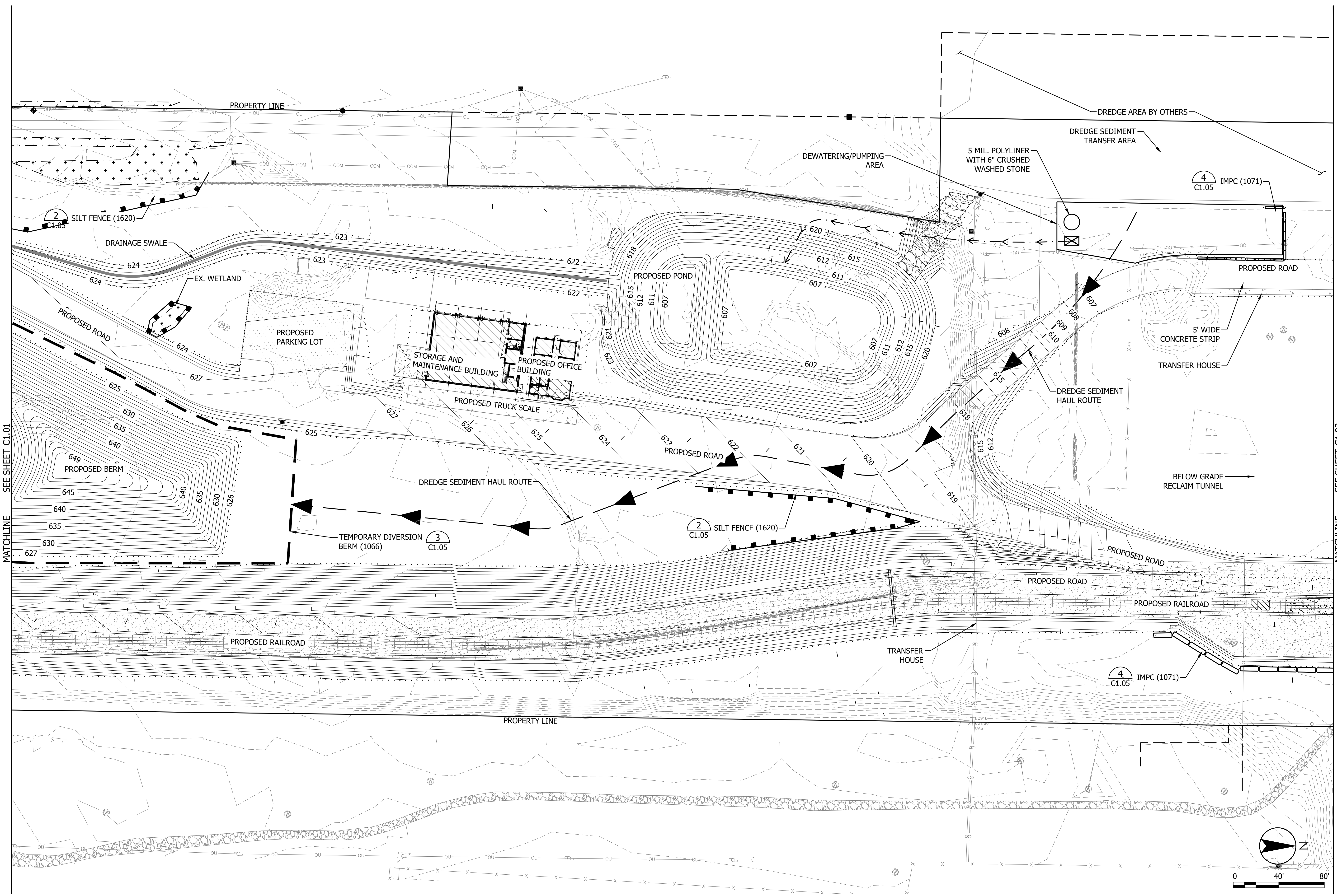

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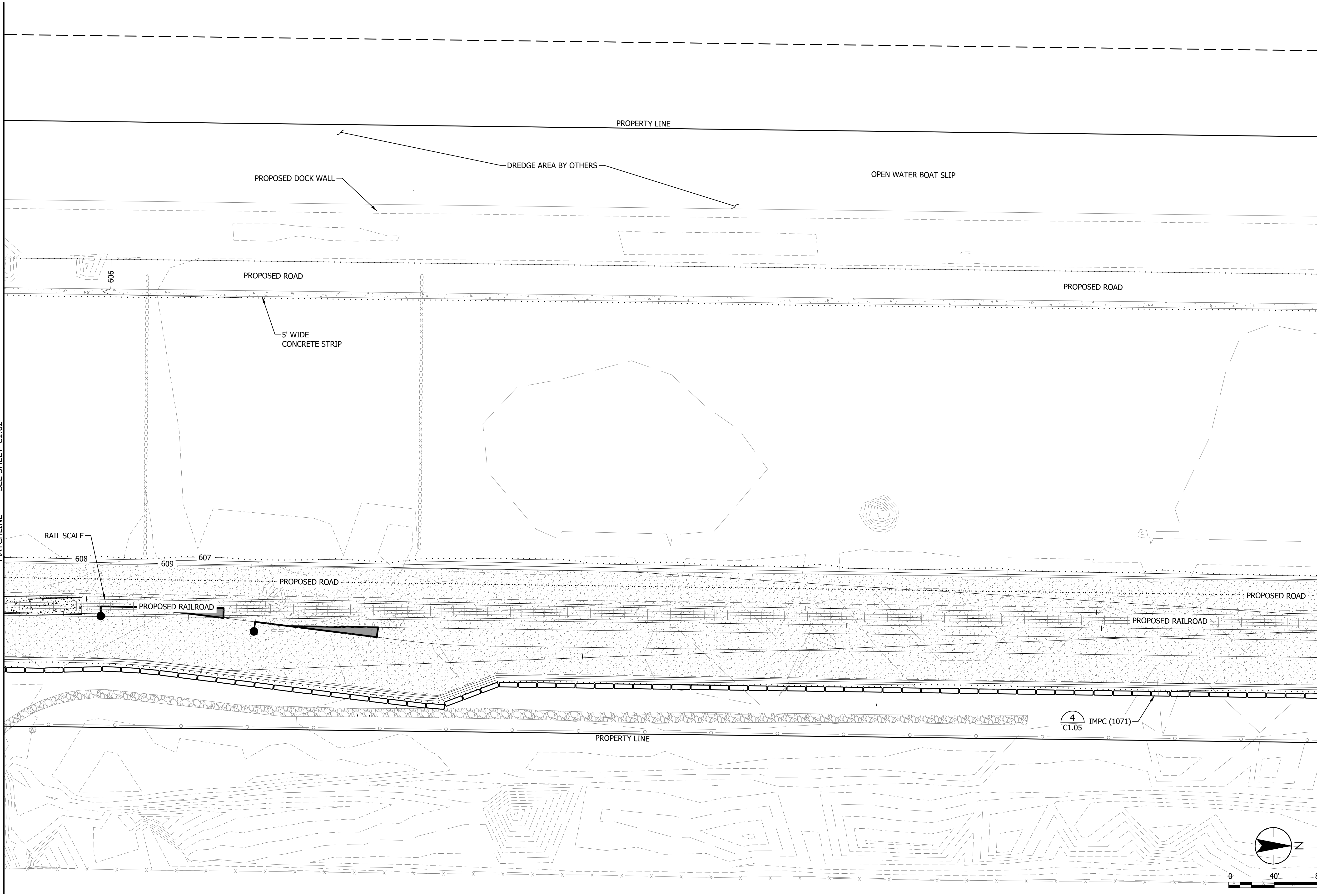

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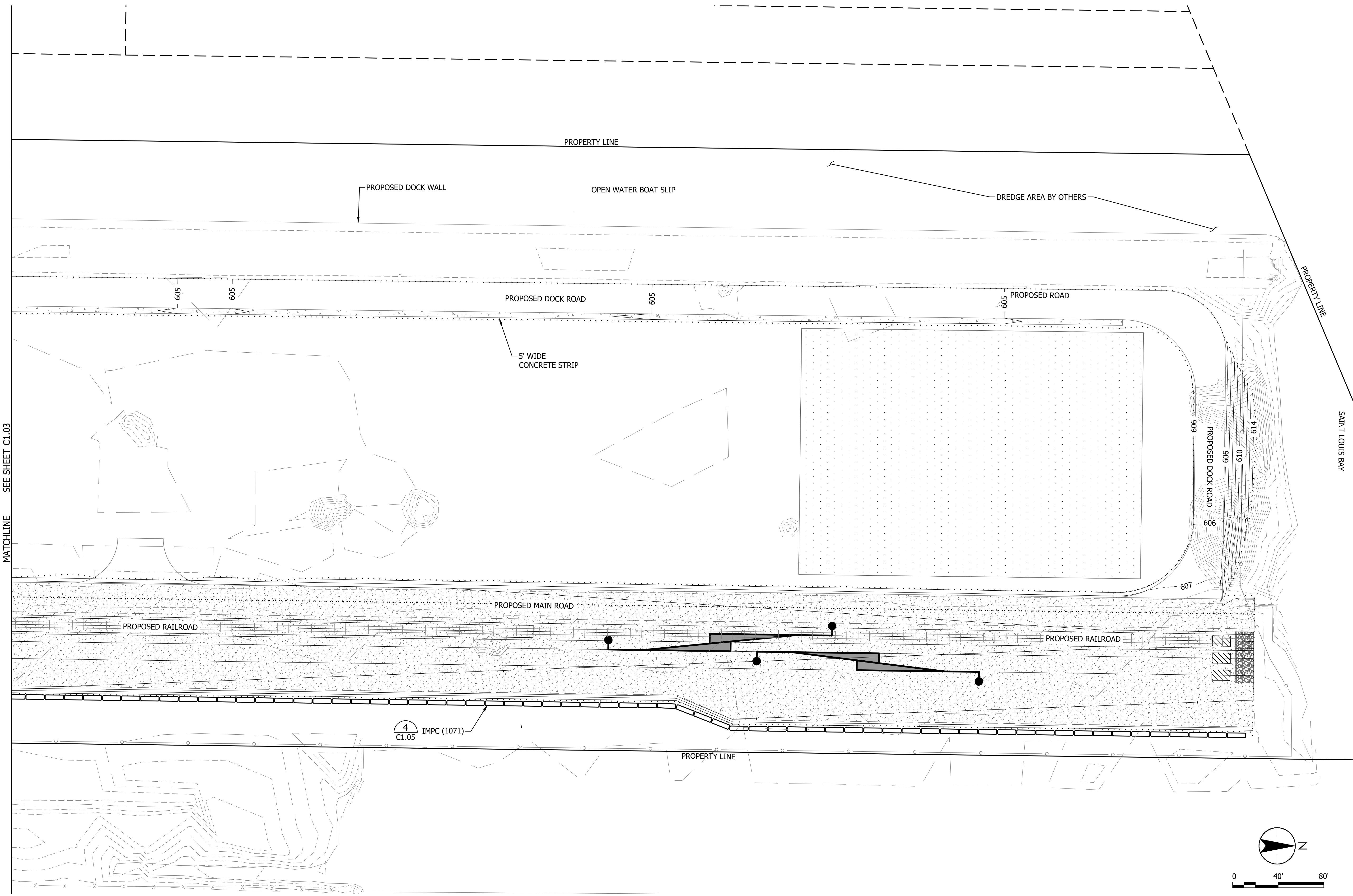

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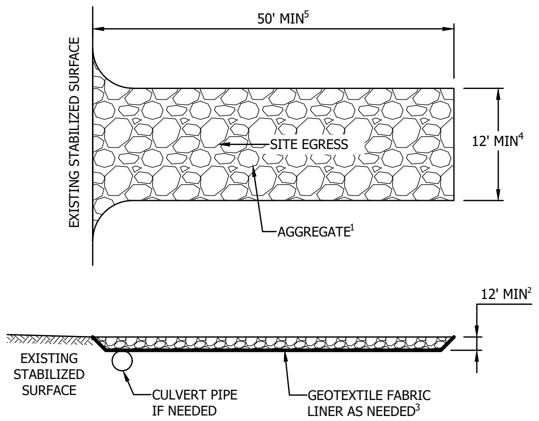


NOTES

1. USE HARD, DURABLE, ANGULAR STONE OR RECYCLED CONCRETE MEETING THE GRADATION IN TABLE 1. WHERE THIS GRADATION IS NOT AVAILABLE, MEET THE GRADATION IN WISCONSIN DEPARTMENT OF TRANSPORTATION (DOT) 2018 STANDARD SPECIFICATIONS, SECTION 312, SELECT CRUSHED MATERIAL.
2. SLOPE THE STONE TRACKING PAD IN A MANNER TO DIRECT RUNOFF TO AN APPROVED TREATMENT PRACTICE.
3. SELECT FABRIC TYPE BASED ON SOIL CONDITIONS AND VEHICLES LOADING.
4. INSTALL TRACKING PAD ACROSS FULL WIDTH OF THE ACCESS POINT, OR RESTRICT EXISTING TRAFFIC TO A DEDICATED EGRESS LAND A LEAST 12 FEET WIDE ACROSS THE TOP OF THE PAD.
5. IF A 50' PAD LENGTH IS NOT POSSIBLE DUE TO SITE GEOMETRY, INSTALL THE MAXIMUM LENGTH PRACTICABLE AND SUPPLEMENT WITH ADDITIONAL PRACTICES AS NEEDED.

Table 1. Gradation for stone tracking pads

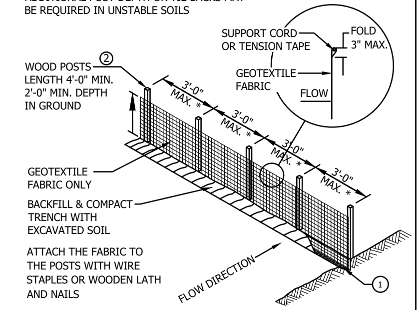
Sieve Size	Percent by weight passing
3"	100
2-1/2"	90-100
1-1/2"	25-60
3/4"	0-20
3/8"	0-5

1 / 1 STONE TRACKING PAD
NTS

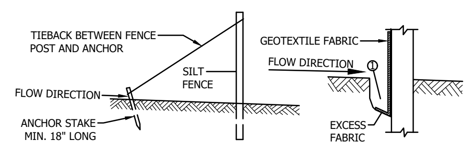
GENERAL NOTES

1. TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL
2. WOOD POSTS SHALL BE MINIMUM SIZE OF $1\frac{1}{8}$" X $1\frac{1}{8}$" OF OAK OR HICKORY.
3. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS: A) TWIST METHOD -- OVERLAP THE END POSTS AND TWIST, OR ROTATE AT LEAST 180 DEGREES, B) HOOK METHOD -- HOOK THE END OF EACH SILT FENCE LENGTH.

NOTE:
ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

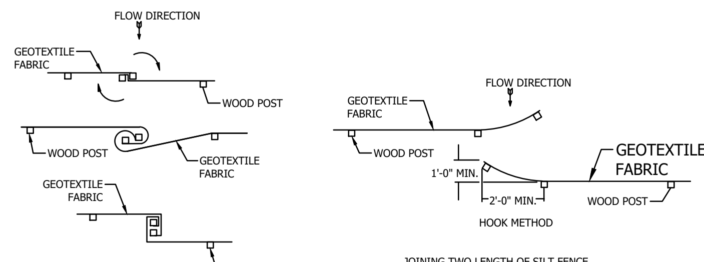


*NOTE:
8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



SILT FENCE TIE BACK
(WHEN ADDITIONAL SUPPORT REQUIRED)

TRENCH DETAIL

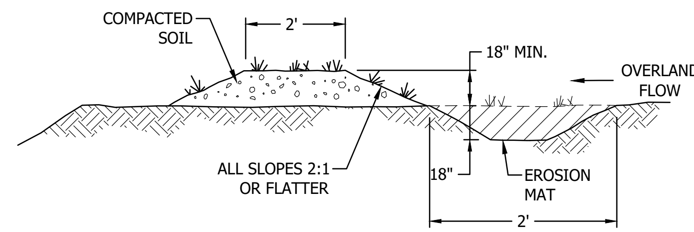


TWIST METHOD

HOOK METHOD

JOINING TWO LENGTH OF SILT FENCE

2 / 1 SILT FENCE
NTS

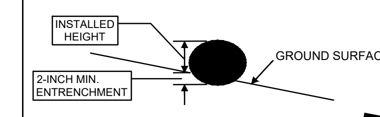


NOTES

1. THE CHANNEL BEHIND THE DIVERSION BERM SHOULD HAVE POSITIVE GRADE TO A STABILIZED OUTLET.
2. THE DIVERSION BERM SHALL BE ADEQUATELY COMPACTED TO PREVENT FAILURE.
3. THE DIVERSION BERM SHOULD BE STABILIZED WITH TEMPORARY SEEDING.

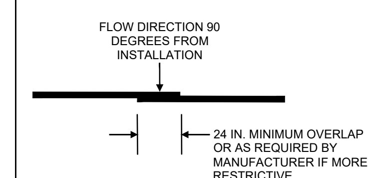
CONSTRUCTION SITE DIVERSION BERM

3 TEMPORARY DIVERSION BERM
NTS

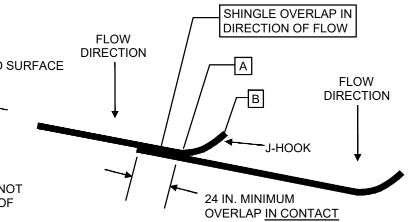


NOTE:
INSTALLED HEIGHT IS MEASURED FROM THE UPSLOPE GROUND SURFACE TO THE TOP OF THE PRODUCT. DUE TO SETTLEMENT AND/OR DEFORMATION, THE INSTALLED HEIGHT MAY NOT BE EQUIVALENT TO THE NOMINAL DIAMETER OF THE PRODUCT.

CROSS SECTION



TYPICAL INSTALLATION
(Plan View)



NOTES:
1. J-HOOKS SHALL BE INSTALLED SO THAT THE GROUND-PRODUCT INTERFACE ELEVATION AT LOCATION B IS HIGHER THAN THE TOP OF PRODUCT ELEVATION AT LOCATION A TO CREATE A WEIR AT POINT A.
2. J-HOOKS SHALL BE INSTALLED EVERY 2 VERTICAL FEET OF DROP ALONG THE LENGTH OF THE INSTALLATION.
3. STAKE OVERLAP AS REQUIRED BY MANUFACTURER.

SLOPING INSTALLATION
(Plan View)

LOG-TYPE PRODUCT INSTALLATION ILLUSTRATION

4 INTERIM MANUFACTURED PERIMETER CONTROL
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EROSION CONTROL DETAILS

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DATE OF ISSUANCE
July 11, 2022

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GENERAL NOTES

1. Contractor shall conform to all relevant federal, state, and local regulations; the conditions included in any permit; and to the conditions included in the project engineer's plans unless otherwise approved by the Wisconsin Department of Natural Resources (WDNR) and project engineer.
2. Erosion control devices shall conform to the latest edition of the WDNR technical standards and WI DOT Product Acceptability List (PAL).
3. A copy of the erosion control plan and permits shall be kept onsite and available for inspection throughout the duration of the project. Submit plan revisions or amendments to the WDNR at least 5 days prior to field implementation.
4. At no time may construction equipment or fill be placed in a waterway or wetland, except as approved by WDNR permit. The contractor shall not store any equipment or materials in any wetland (except by approved permit), floodplain, or floodway.
5. Public and private access roads shall be kept free of tracked sediment and at a minimum cleaned at the end of each workday (not by flushing). As well, the contractor shall take minimization measures for dust control to the maximum extent practicable.
6. Bare soil areas, including soil stockpiles, left undisturbed for 7 days, shall be stabilized with: temporary or permanent seed and mulch (properly anchored by crimping, netting, or tackifier); hydromulch; tarp; or other approved method.
7. The use, storage and disposal of chemicals, oil & grease, cement and other compounds and materials used on the construction site shall be managed during the construction period to prevent their transport by runoff into waters of the state; in the event of any spill notification shall be immediately reported to the WDNR and local authorities. All construction debris and litter shall be cleaned daily.
8. If the contractor determines that dewatering will be necessary, a dewatering plan following WDNR technical standard 1061 shall be submitted by the contractor to the WDNR for approval. Notify the WDNR if dewatering is scheduled to occur in areas of soil and/or groundwater contamination, or if dewatering will occur from a high capacity well (70 GPM or greater). Provide anti-scour protection and maintain non-erosive flow during dewatering.
9. Between September 15 and October 15 stabilize with mulch, tackifier and a perennial seed mix with winter wheat, annual rye, oats or annual rye. During the non-growing season (Oct. 15 - April 15), winter stabilization shall include seeding with dormant seed mix and winter wheat and the use of mulch and polymer/tackifier (as an anchoring method) or a Class 1-type B erosion mat on all bare soil areas of the site.

Mulch shall consist of hay or straw free of diseased plant residue, noxious weeds, harmful chemical residues, heavy metals, hydrocarbons, and other known environmental toxicants.

Mulch shall cover a minimum of 80% of the soil surface and shall be ½ to 1 ½ inches thick.

If the conditions are too cold to apply a polymer/tackifier, a mulch crimper or biodegradable netting shall be used as a temporary alternate anchoring method.

10. If snow cover prevents the installation of these items; the condition of the site, including the amount of snow cover, will be noted on every erosion and sediment control inspection report. Once the snow is 2 inches or less on a majority of the site, the above-mentioned winter stabilization methods shall be immediately employed.
11. All finish graded ditches and swales shall be planted, sodded or seeded and mulched or matted immediately after completion.
12. If any item in the erosion control plan requires modification, the contractor shall submit an erosion control plan revision to the project engineer and WDNR Stormwater Specialist to receive approval before proceeding.
13. All land disturbing activities shall be conducted in a logical sequence as to minimize the amount of bare soil exposed at any one time. Maintain existing vegetation as long as possible.
14. Any off-site sediment deposits shall be cleaned up and restored or stabilized with 24 hours, weather permitting, of any off-site sediment deposition. All sediment shall be properly disposed of and stabilized in an upland location on or off-site.
15. Make appropriate provisions for watering, as needed, during the first 8 weeks following seeding or planting areas whenever more than 7 consecutive days of dry weather occur (no rain).

EROSION CONTROL INSTALLATION AND SEQUENCING

1. The construction site is a industrial dock re-development construction project including site grading, stormwater pond, new rail spur, new dock wall, new office and scale building, and utility construction adjacent to Lake Superior.
2. Tracking pad, silt fence, IMPC, and diversion berm shall be installed prior to any land disturbing activities. Followed by demolition, clear & grubbing, pond and berm, dock wall, rail, utilities, and buildings, berm prep for dredge, dredging (by others) in June 2023, final grading, berm capping, and final seeding.
3. Hall routes and construction access shall be established, and submitted to and approved by the Owner, prior to any construction activity.
4. Dredge contractor (by others) to move dredge from barge to berm via the sediment transfer area and hauling route and to dewater to pond as needed.
5. Flows shall be directed during construction to the silt fencing, pond, diversion berm or the drainage swale. Pond to be used as temporary sediment basin during construction with orifice restrictor.
6. Following construction of the drainage swale interim manufactured perimeter control shall be installed.
7. Turbidity barriers, or other approved best management practice, shall be installed prior to any work for wall repair or dredging.
8. Upon completion of grading any disturbed ground shall be temporality seeded and mulch placed within 7 days.
9. Permanent stabilization shall occur after final grading, of any areas that were temporarily seeded.

REMOVAL OF EROSION CONTROL MEASURES

1. Interim Manufactured Perimeter Control shall be removed when all land disturbing construction activities have been completed and the area has reached final stabilization. Any soil disturbance that has occurred because of its removal shall be immediately stabilized.
2. Silt Fence shall be removed when all land disturbing construction activities have been completed and the area has reached final stabilization. Any soil disturbance that has occurred because of its removal shall be immediately stabilized.
3. Tracking Pad shall be removed when all land disturbing construction activities have been completed along its associated access road. Any soil disturbance that has occurred as a result its removal shall be immediately stabilized.
4. Construction site diversion berms shall be removed when all land disturbing construction activities have been completed. Any soil disturbance that has occurred as a result its removal shall be immediately stabilized.

EROSION CONTROL INSPECTION AND MAINTENANCE

1. Inspect all erosion control measures prior to commencing grading activities. Erosion control measures shall be inspected weekly and within 24 hours of every ½ inch or greater rain event. Maintenance shall be in accordance with the WDNR technical standards and the engineer's plans and specifications and as deemed necessary by regulatory agencies. Keep inspection reports on-site and available upon request. All maintenance and/or repairs shall be completed within 24 hours of notification by the erosion control inspector. The contractor shall maintain an erosion control logbook on site noting inspection date and times, repairs necessary, and repairs made.
2. The contractor shall install and maintain the erosion control measures in accordance with WDNR technical standards and as follows:

A. Tracking Pad (1057) - Maintenance shall take place by scraping or top-dressing with additional aggregate. A minimum 50-foot-long and 12-inch thick pad consisting of a minimum of 3-inch clear washed stone shall be maintained. The width of the tracking pad shall extend the full distance of the egress point.
B. Silt Fence (1056) - Sediment /debris/deposits shall be removed when they reach 50% of the height of the silt fence. Removed sediment shall be deposited in a suitable non-wetland or floodplain area and stabilized. Silt fence that is damaged or not performing as designed shall be repaired or replaced immediately.
C. Interim Manufactured Perimeter Control (1071) - Sediment /debris/deposits shall be removed when they reach 50% of the height of the Interim Manufactured Perimeter Control product. Removed sediment shall be deposited in a suitable non-wetland or floodplain area and stabilized. Interim Manufactured Perimeter Control that is damaged or not performing as designed shall be repaired or replaced immediately.
D. Construction Site Diversion Berm (1066) - Diversion Berms shall be inspected weekly and maintained in accordance with the WDNR technical standard 1066. Berms that are damaged or not performing as designed shall be repaired or rebuilt immediately.

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EROSION CONTROL NOTES

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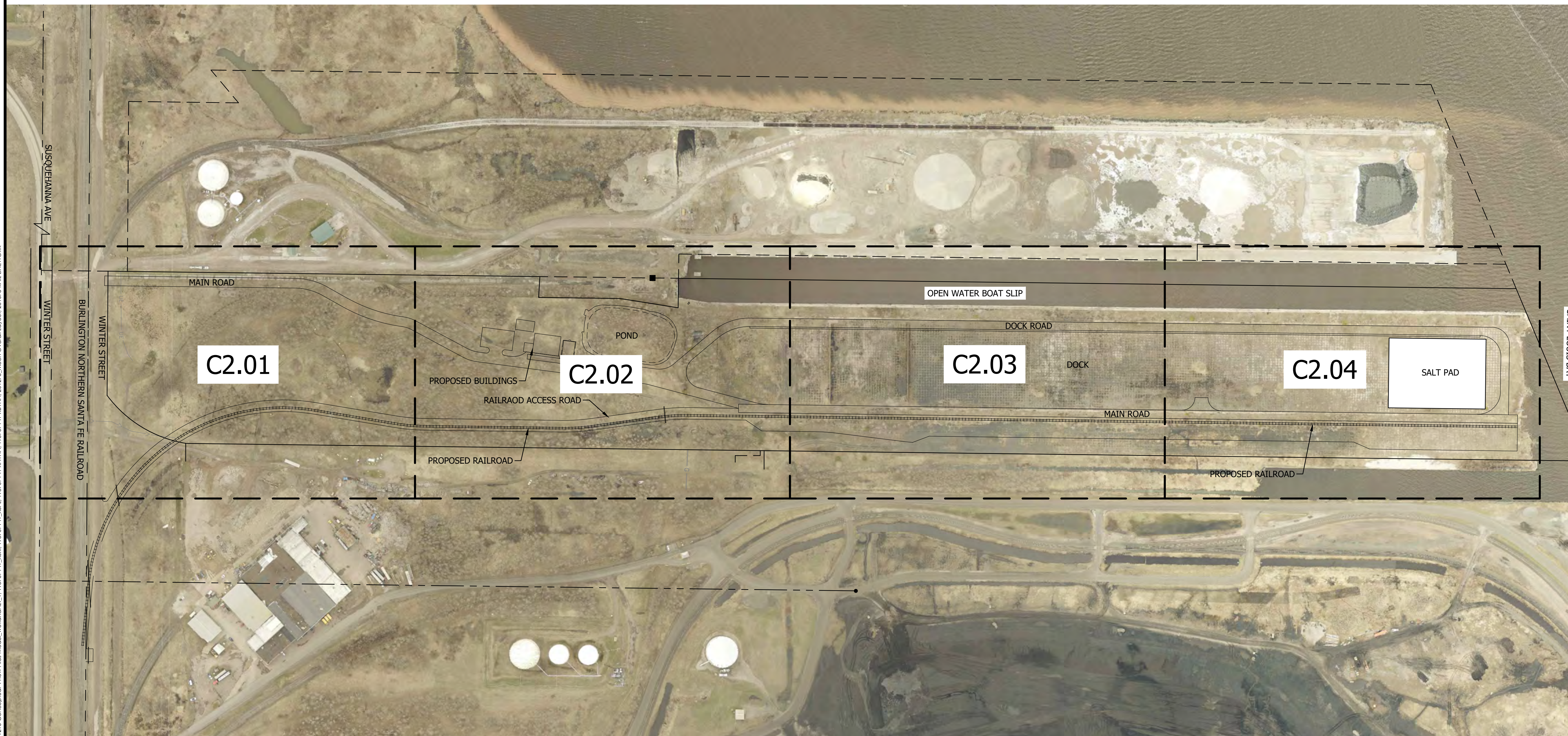

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SITE PLAN SHEET INDEX

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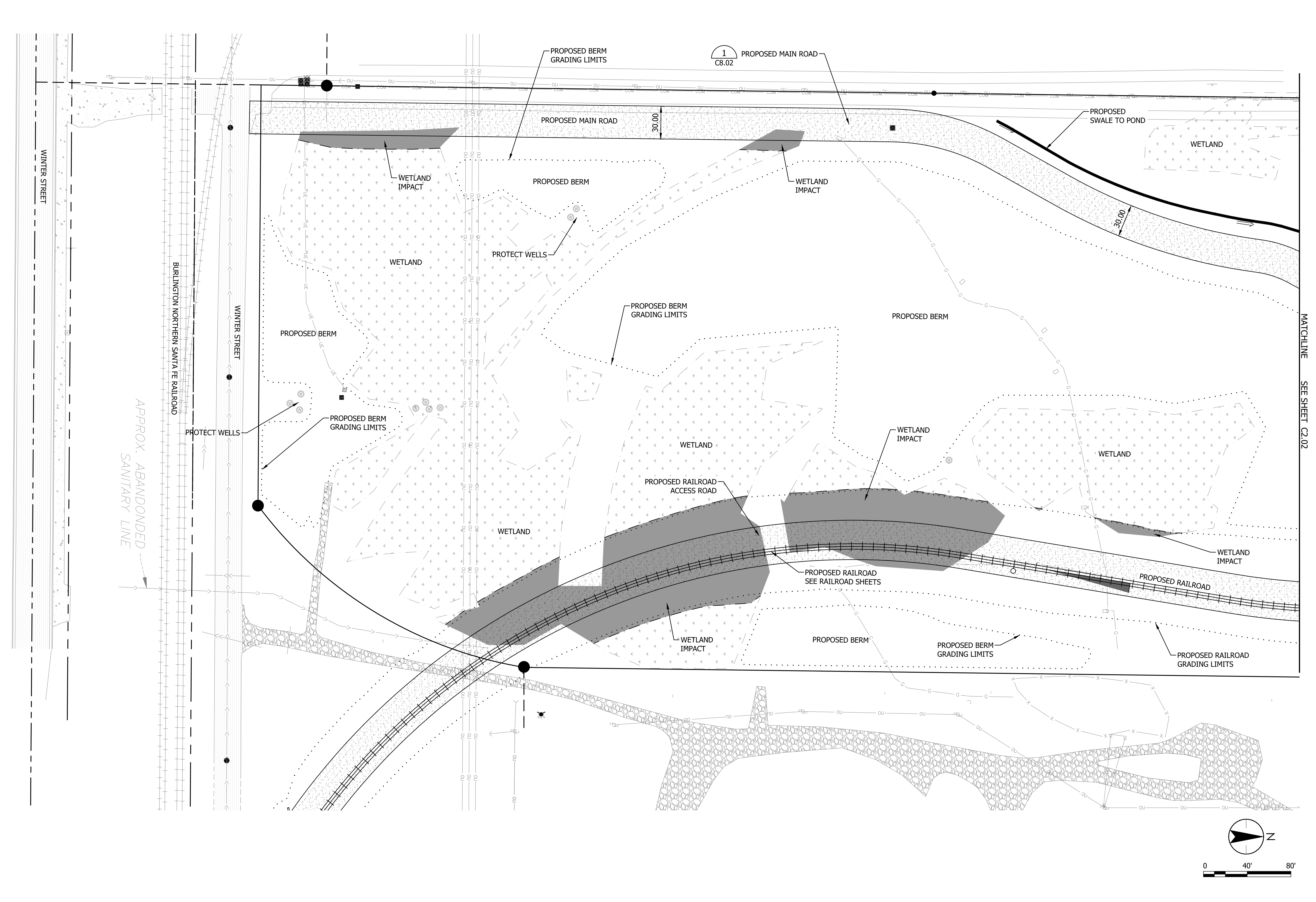

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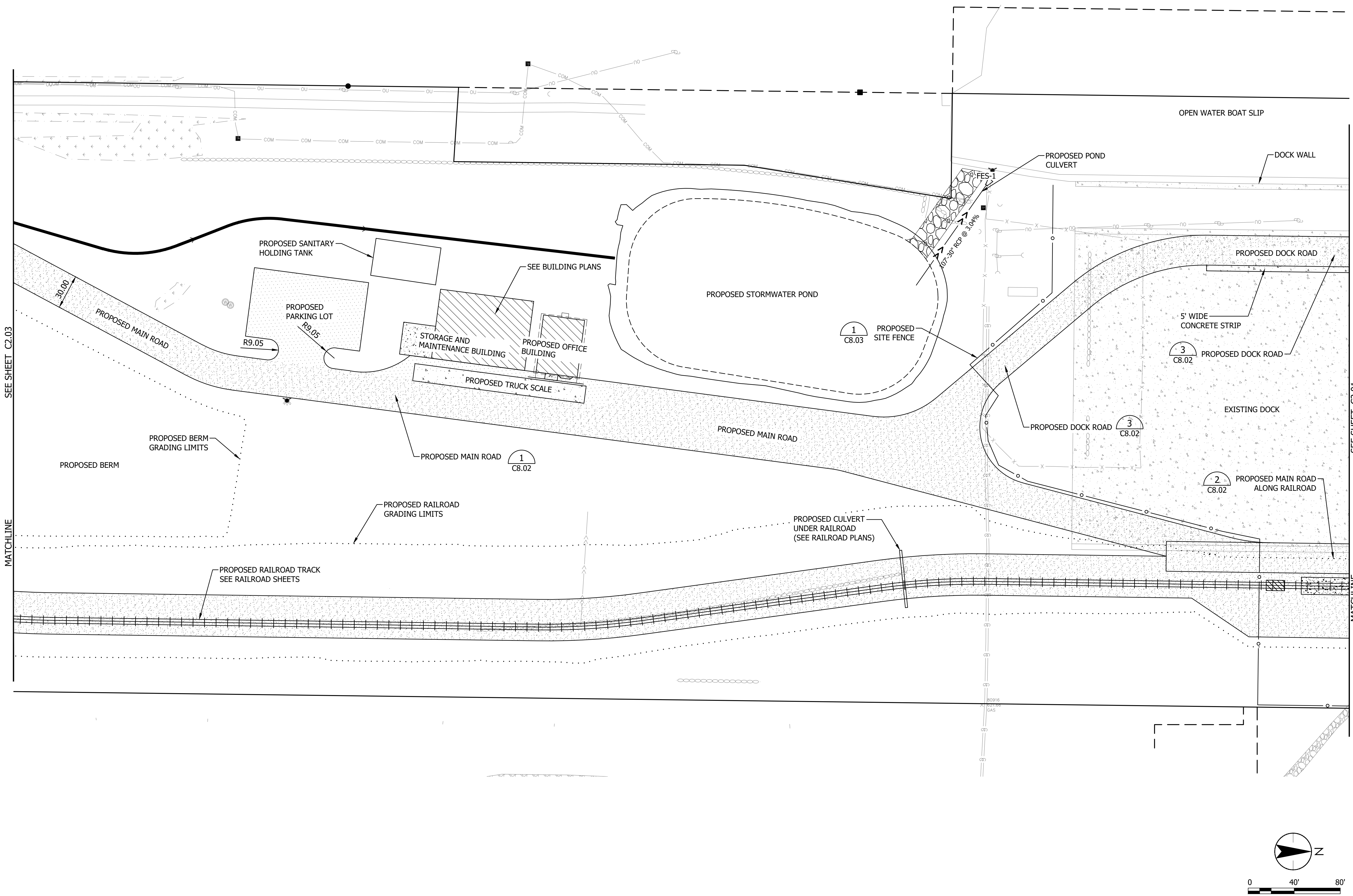

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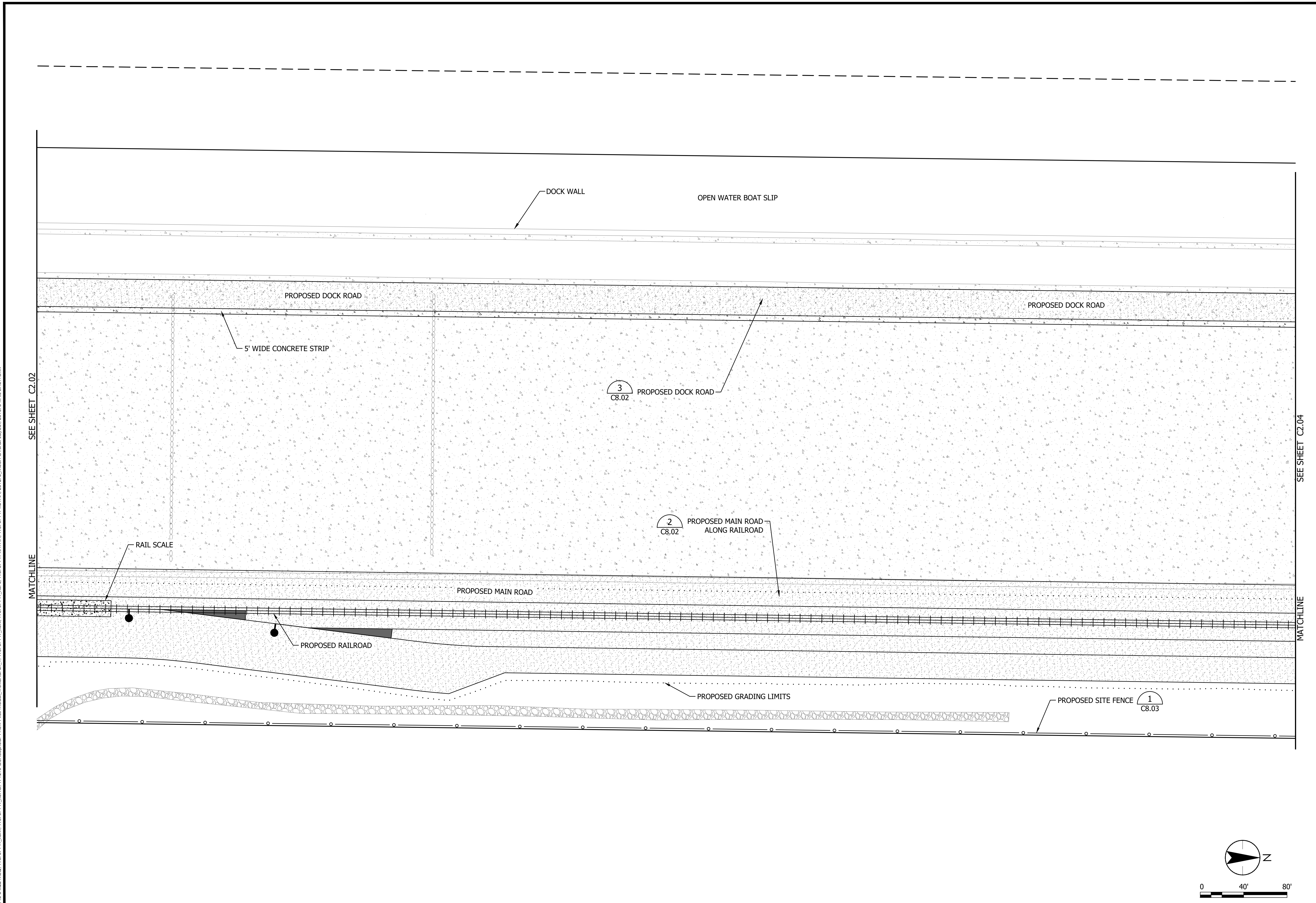

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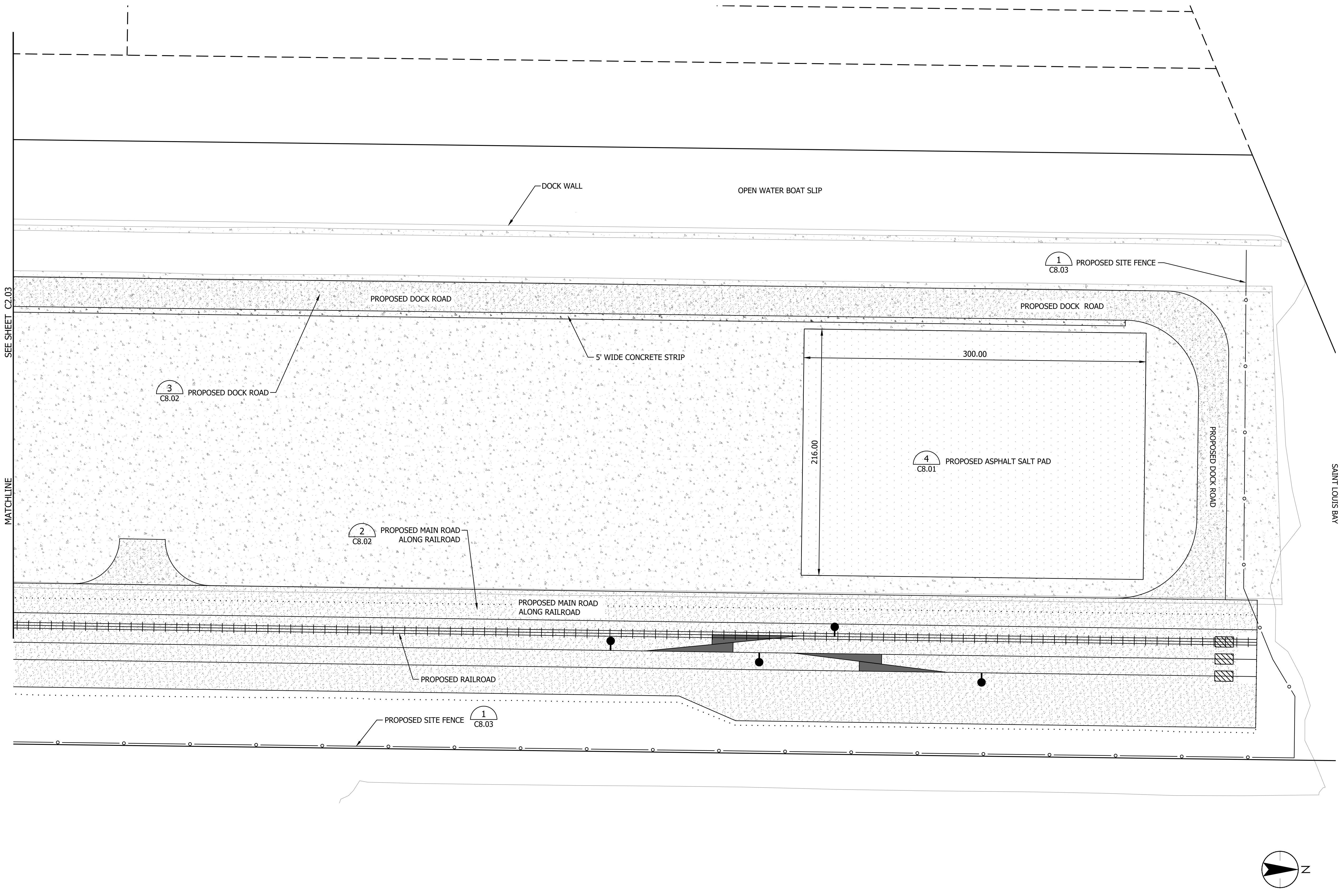

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C. REISS DOCK
C. REISS COMPANY, LLC
ST. LOUIS BAY, SURPERIOR, WI

DATE OF ISSUANCE		
July 11, 2022		
NO	REVISION	DATE

SURVEY	JN
DRAWN	AJR
DESIGNED	AJR
CHECKED	AJR
APPROVED	AJR
PROJ. NO.	193707141

SHEET NUMBER
C2.04

Plot Date: 07/11/2022 - 9:07pm
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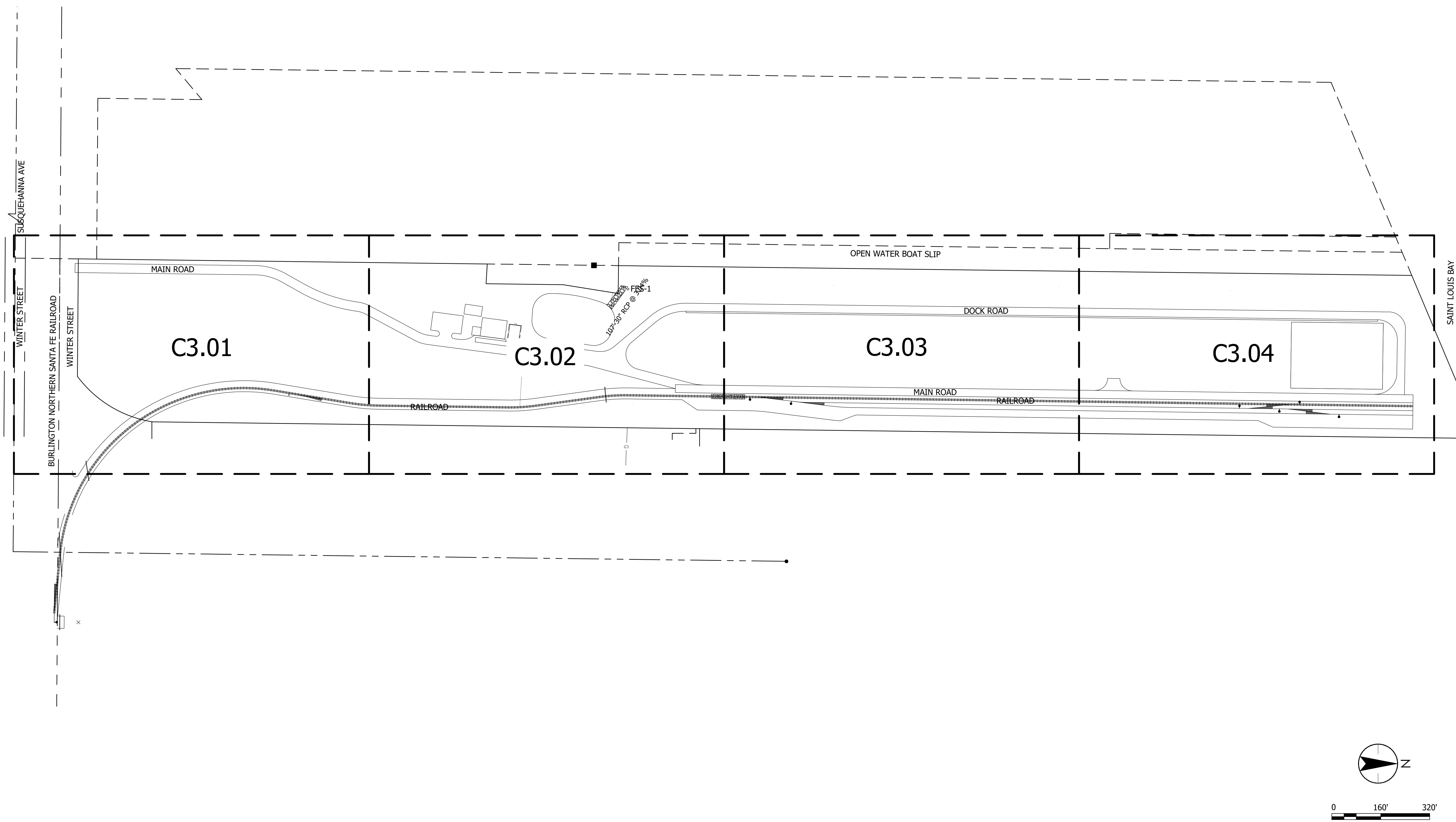

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GRADING PLAN SHEET INDEX

C. REISS DOCK
C. REISS COMPANY, LLC
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PROJ. NO.	193707141

SHEET NUMBER
C3.00

Plot Date: 07/11/2022 - 9:30pm
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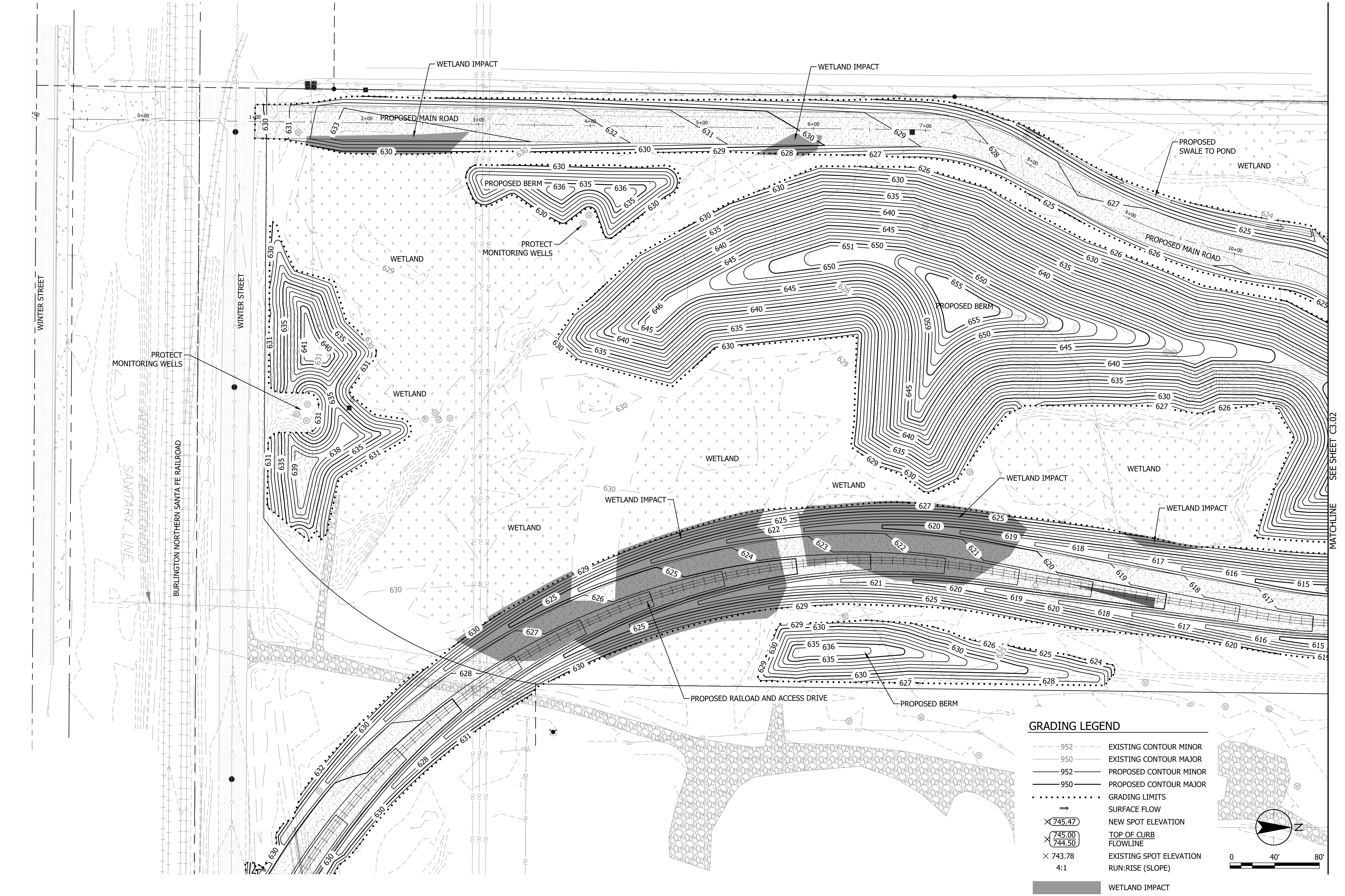

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GRADING PLAN

C. REISS DOCK
C. REISS COMPANY, LLC
ST. LOUIS BAY, SURPERIOR, WI

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APPROVED	AJR
PROJ. NO.	193707141

SHEET NUMBER
C3.01

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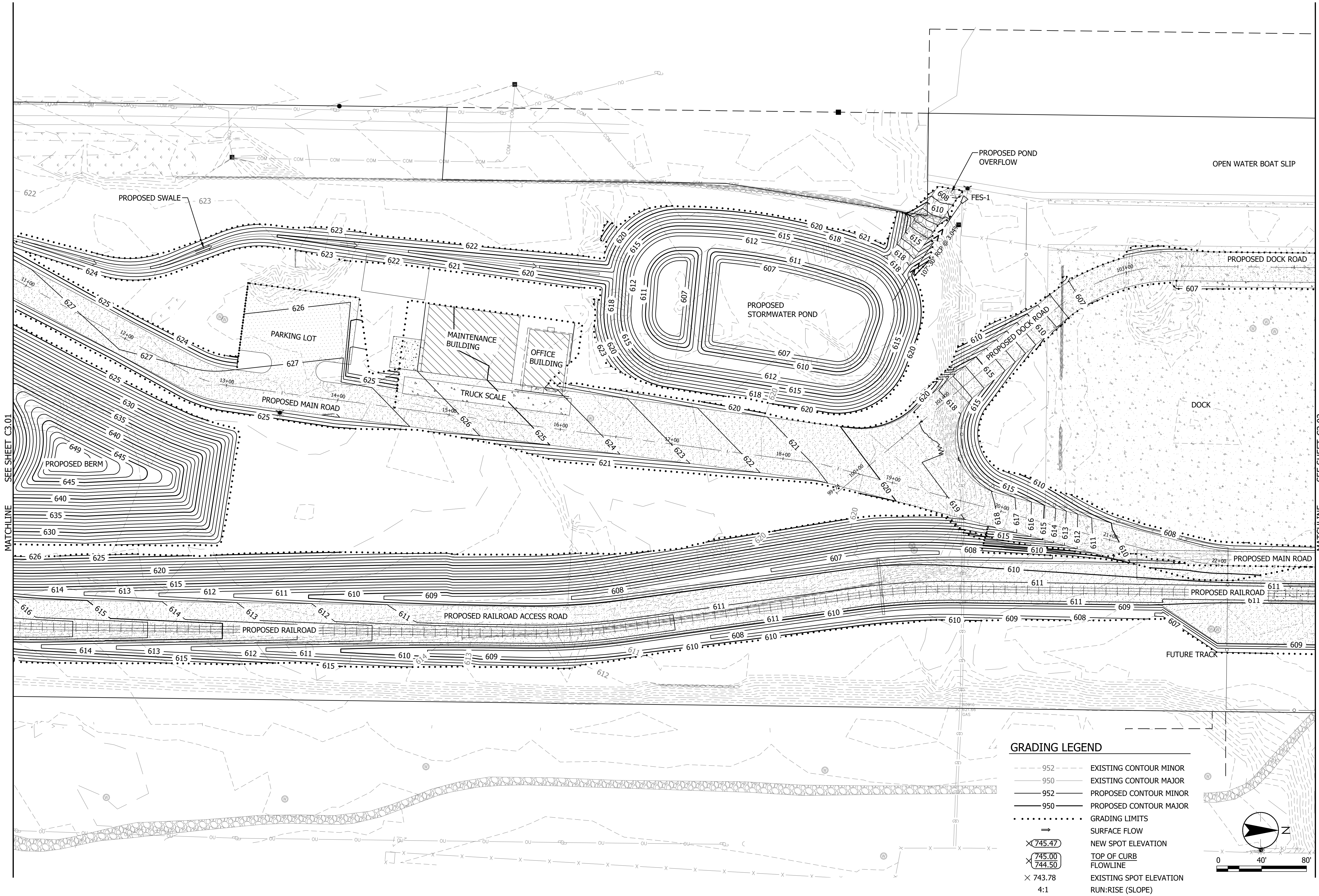

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GRADING PLAN

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APPROVED	AJR
PROJ. NO.	193707141

SHEET NUMBER
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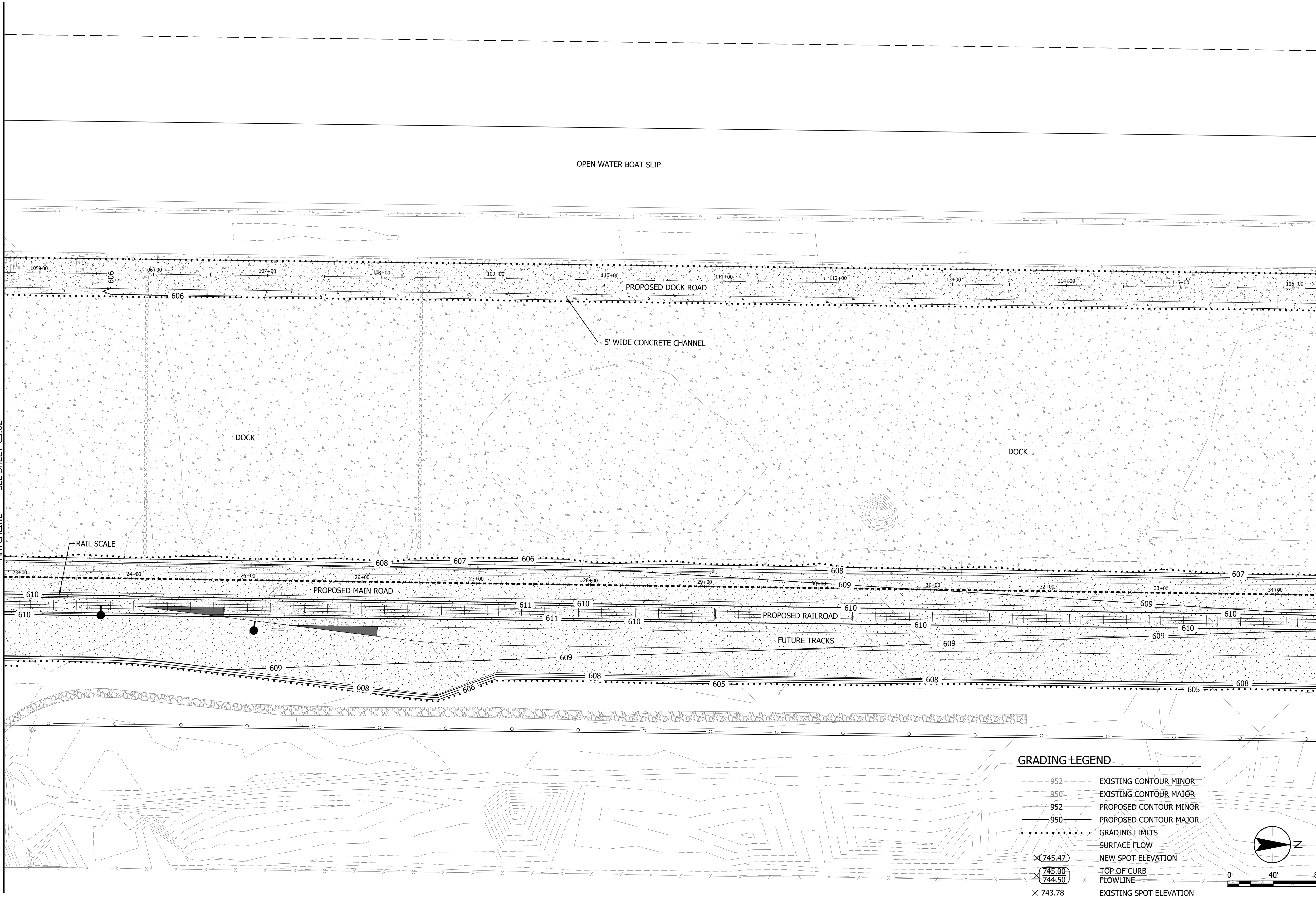

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SHEET NUMBER
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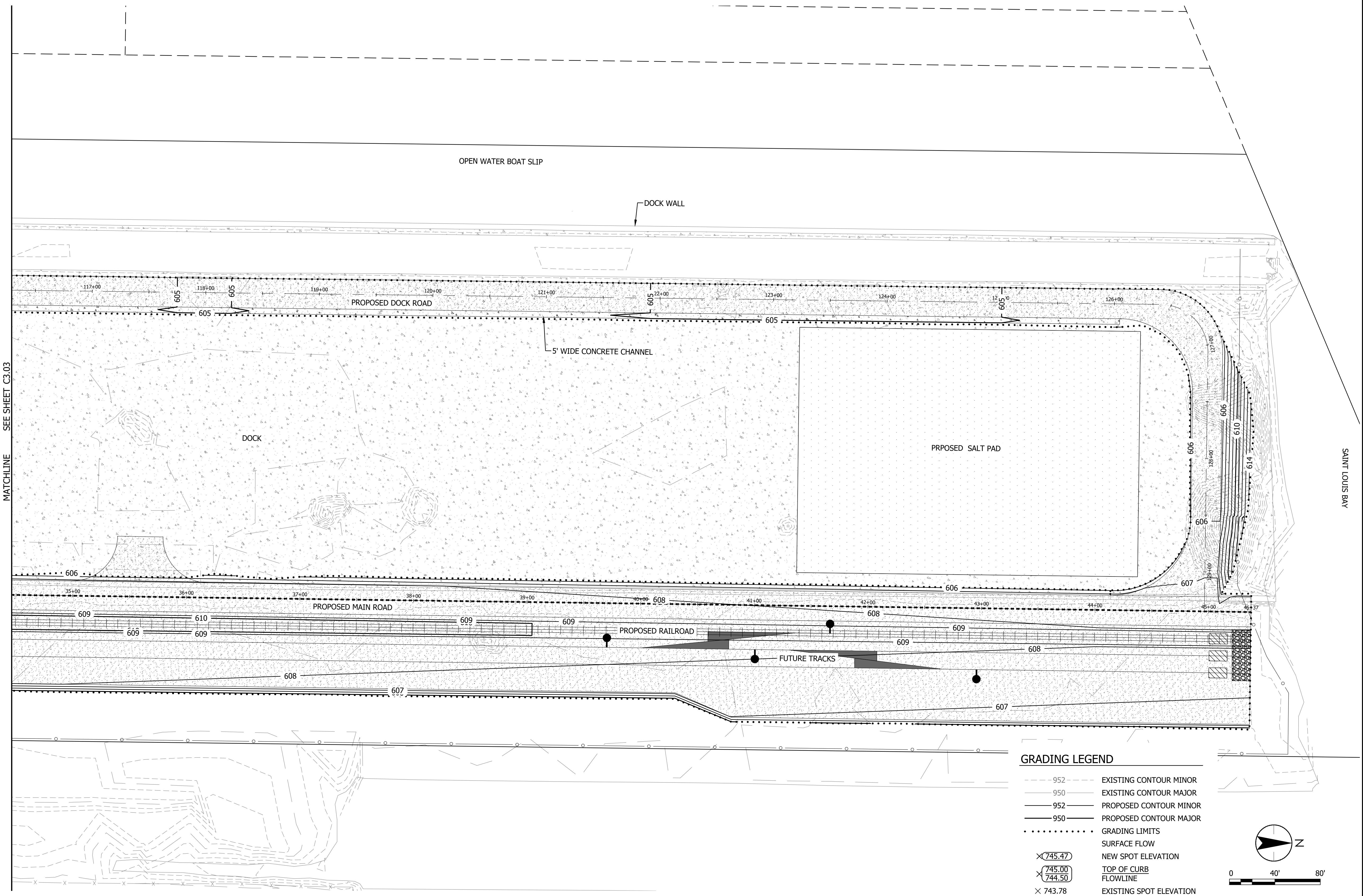

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SHEET NUMBER
C3.04

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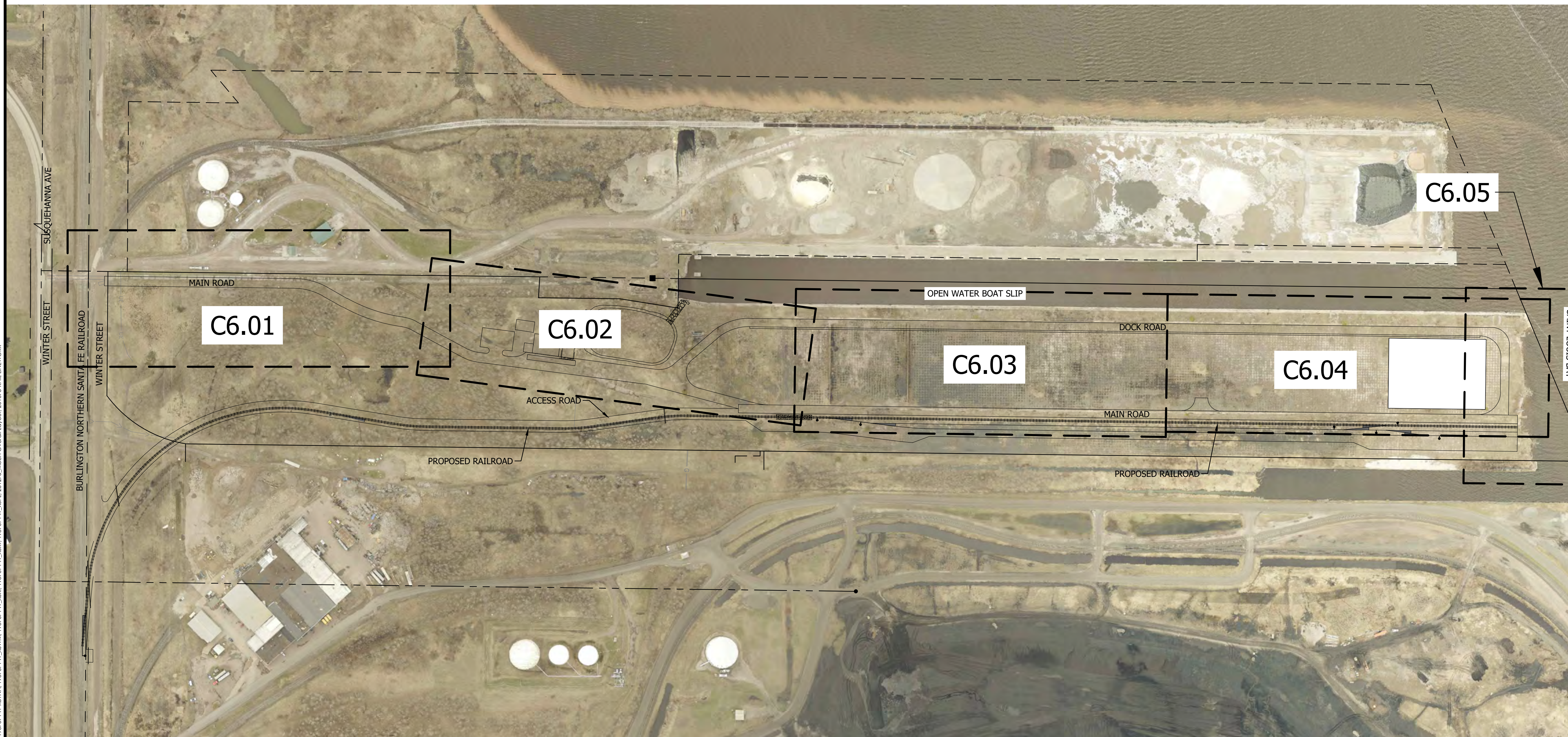

N

0 160' 320'
HORIZONTAL

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ROAD PLAN SHEET INDEX

C. REISS DOCK
C. REISS COMPANY, LLC
ST. LOUIS BAY, SURPERIOR, WI

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July 12, 2022

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SURVEY	JN
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DESIGNED	AJR
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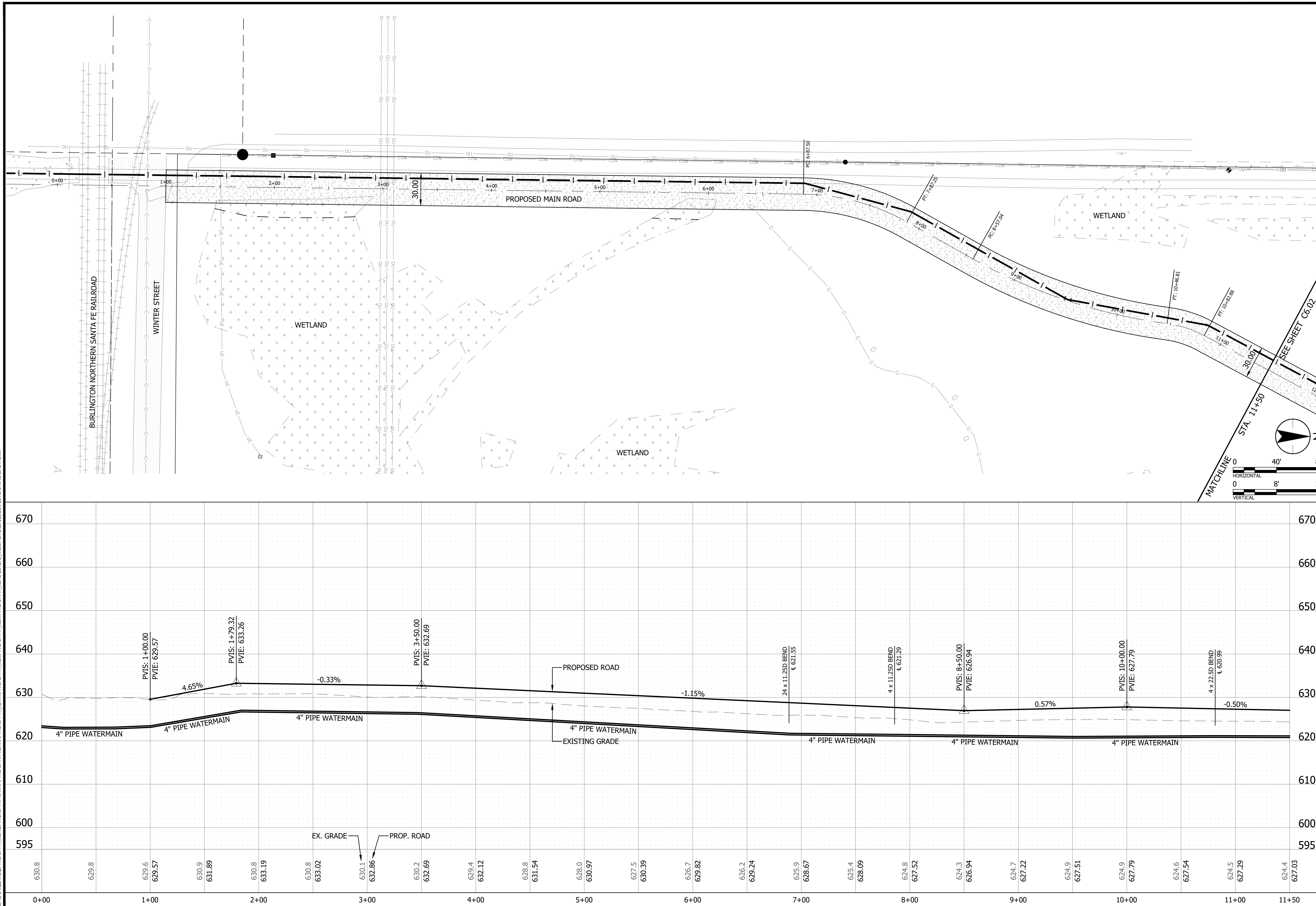
PROJ. NO.	193707141

SHEET NUMBER
C6.00

Plot Date: 07/12/2022 - 8:16am



Plot Date: 07/12/2022 - 8:14am

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MAIN ROAD PLAN AND PROFILE

C. REISS DOCK
C. REISS COMPANY, LLC
ST. LOUIS BAY, SURPERIOR, WI

DATE OF ISSUANCE	
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DESIGNED	AJR
CHECKED	AJR
APPROVED	AJR
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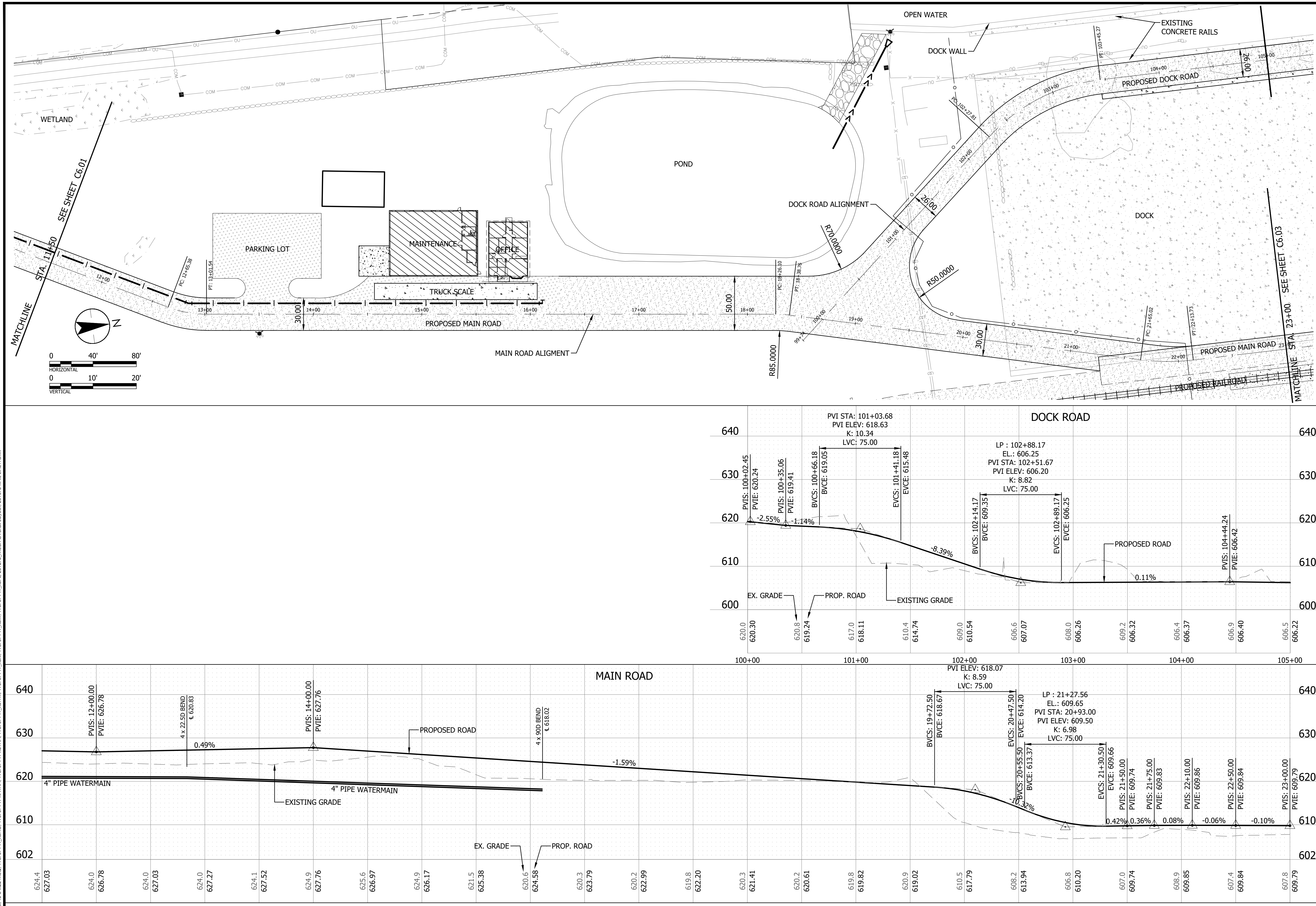
SHEET NUMBER
C6.01



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MAIN ROAD AND DOCK ROAD PLAN AND PROFILE

C. REISS DOCK
C. REISS COMPANY, LLC
ST. LOUIS BAY, SURPERIOR, WI

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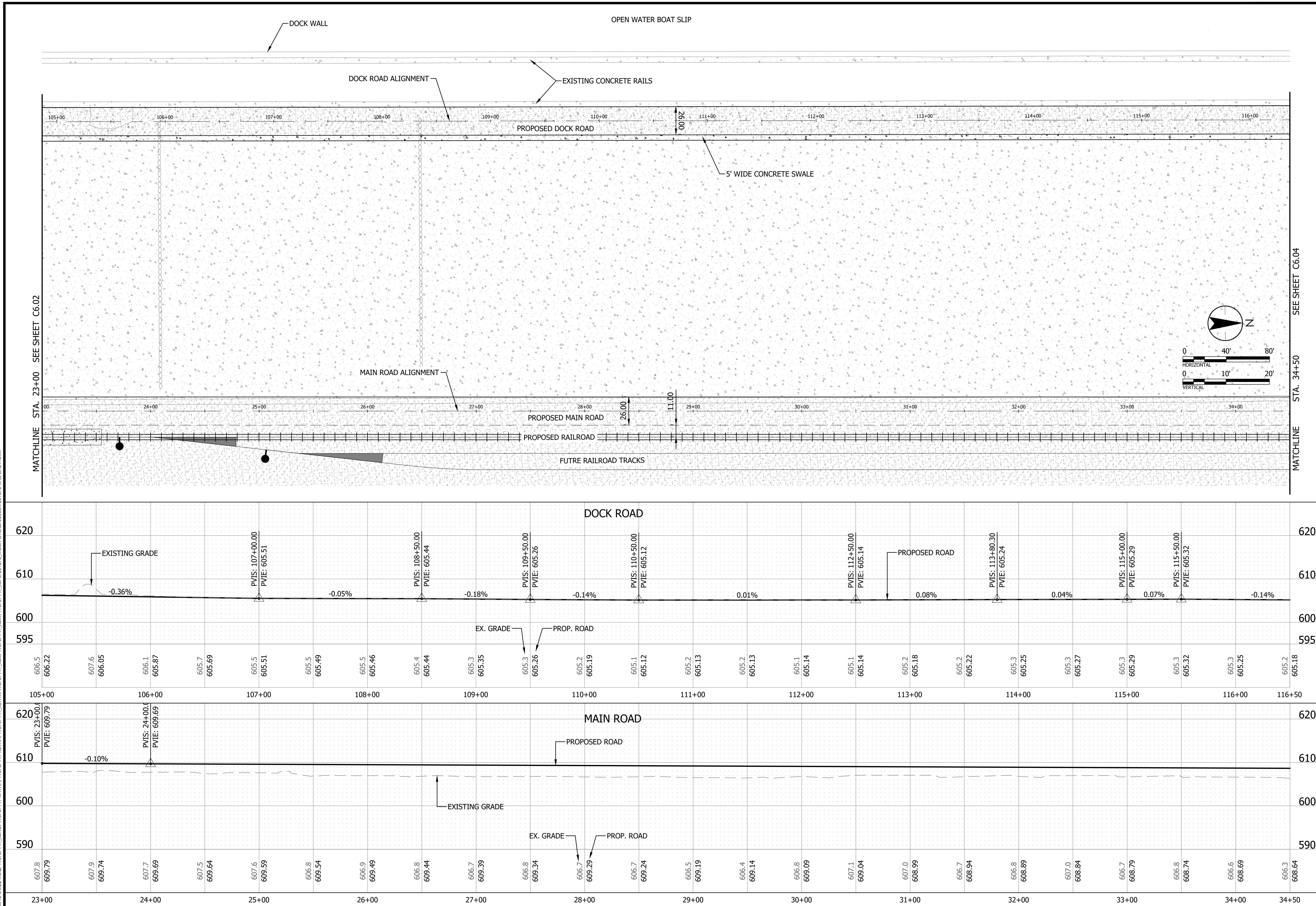
SHEET NUMBER
C6.02



	Ex. grade	Prop. road
105+00	606.5	606.22
	607.6	606.05
106+00	606.1	605.87
	605.7	605.69
107+00	605.5	605.51
	605.5	605.49
108+00	605.5	605.46
	605.4	605.44
109+00	605.3	605.35
	605.3	605.26
110+00	605.2	605.19
	605.1	605.12
111+00	605.2	605.13
	605.2	605.13
112+00	605.1	605.14
	605.1	605.14
113+00	605.2	605.18
	605.2	605.22
114+00	605.3	605.25
	605.3	605.27
115+00	605.3	605.29
	605.3	605.32
116+00	605.3	605.25
116+50	605.2	605.18

	Ex. grade	Prop. road
23+00	607.8	609.79
	607.9	609.74
24+00	607.7	609.69
	607.5	609.64
25+00	607.6	609.59
	606.8	609.54
26+00	606.9	609.49
	606.8	609.44
27+00	606.7	609.39
	606.8	609.34
28+00	606.7	609.29
	606.7	609.24
29+00	606.5	609.19
	606.4	609.14
30+00	606.8	609.09
	607.1	609.04
31+00	607.0	608.99
	606.7	608.94
32+00	606.8	608.89
	607.0	608.84
33+00	606.7	608.79
	606.8	608.74
34+00	606.6	608.69
34+50	606.3	608.64

Plot Date: 07/12/2022 - 8:14am

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MAIN ROAD AND DOCK ROAD PLAN AND PROFILE

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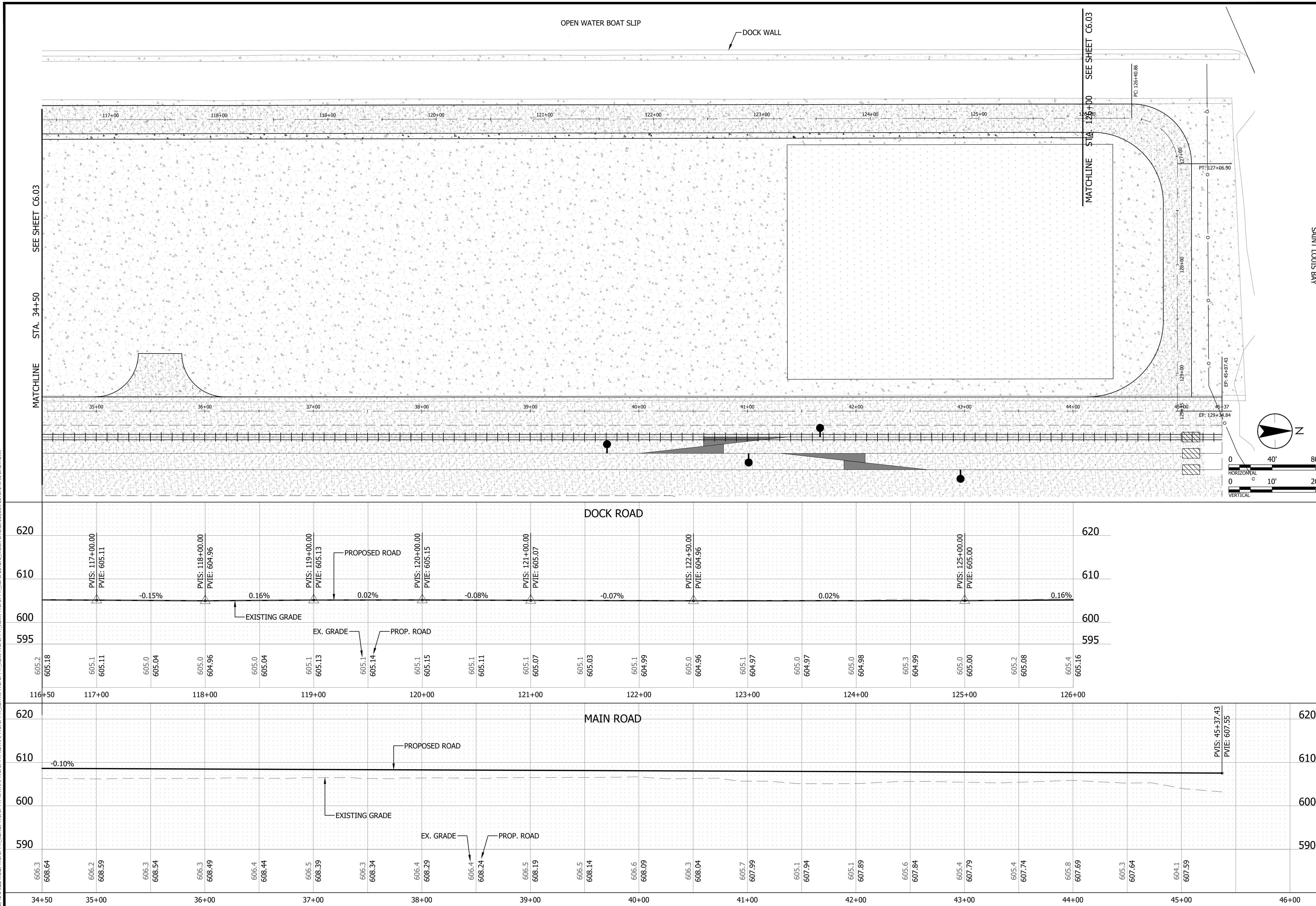
C6.03



Dock Road station	116+50		117+00		118+00		119+00		120+00		121+00		122+00		123+00		124+00		125+00		126+00
Ex. grade	605.2	605.1	605.0	605.0	605.0	605.1	605.1	605.1	605.1	605.1	605.1	605.0	605.1	605.0	605.3	605.0	605.2	605.4			
Prop. road	605.18	605.11	605.04	604.96	605.04	605.13	605.14	605.15	605.11	605.07	605.03	604.99	604.96	604.97	604.97	604.98	604.99	605.00	605.08	605.16	

Main Road station	34+50	35+00		36+00		37+00		38+00		39+00		40+00		41+00		42+00		43+00		44+00		45+00
Ex. grade	606.3	606.2	606.3	606.3	606.4	606.5	606.3	606.4	606.4	606.5	606.5	606.6	606.3	605.7	605.1	605.1	605.6	605.4	605.4	605.8	605.3	604.1
Prop. road	608.64	608.59	608.54	608.49	608.44	608.39	608.34	608.29	608.24	608.19	608.14	608.09	608.04	607.99	607.94	607.89	607.84	607.79	607.74	607.69	607.64	607.59

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MAIN ROAD AND DOCK ROAD PLAN AND PROFILE

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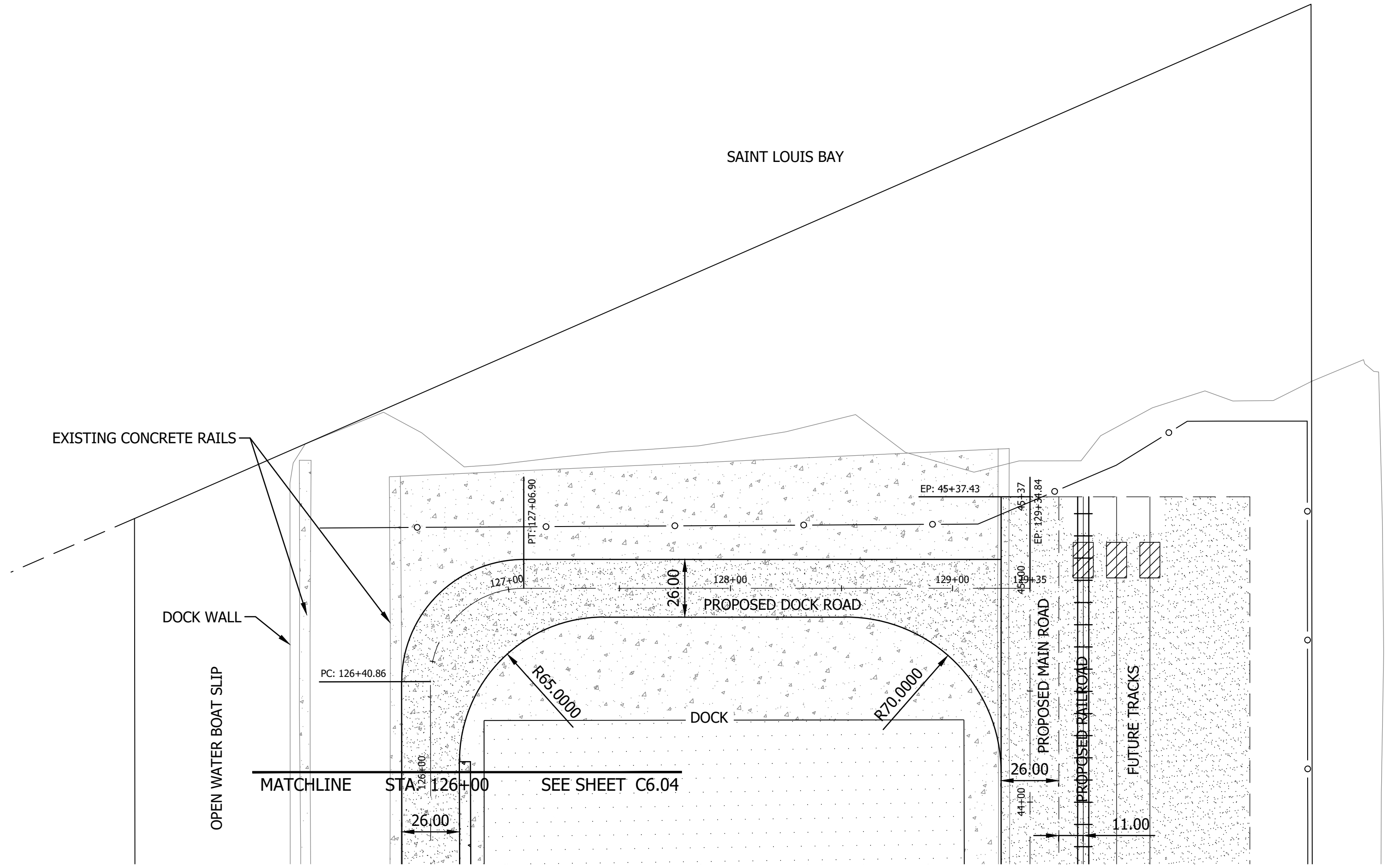
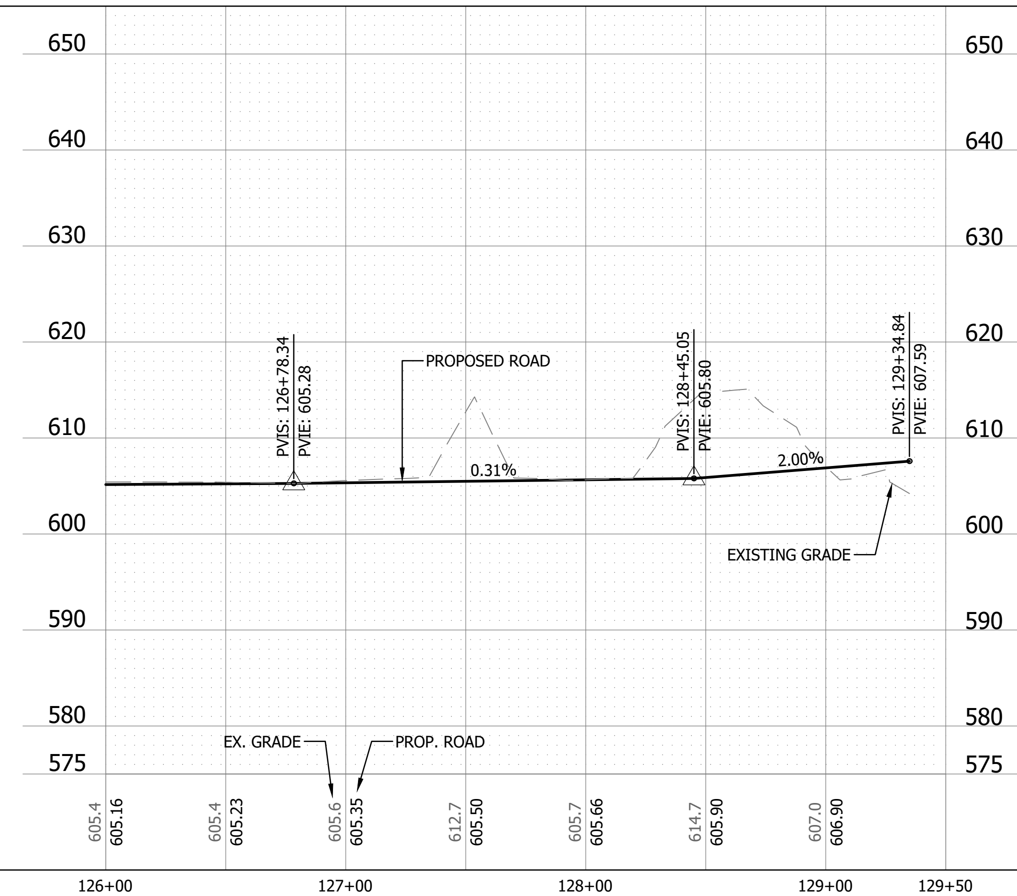
SHEET NUMBER
C6.04

Plot Date: 07/12/2022 - 8:15am





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DOCK ROAD PLAN AND PROFILE

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SHEET NUMBER
C6.05

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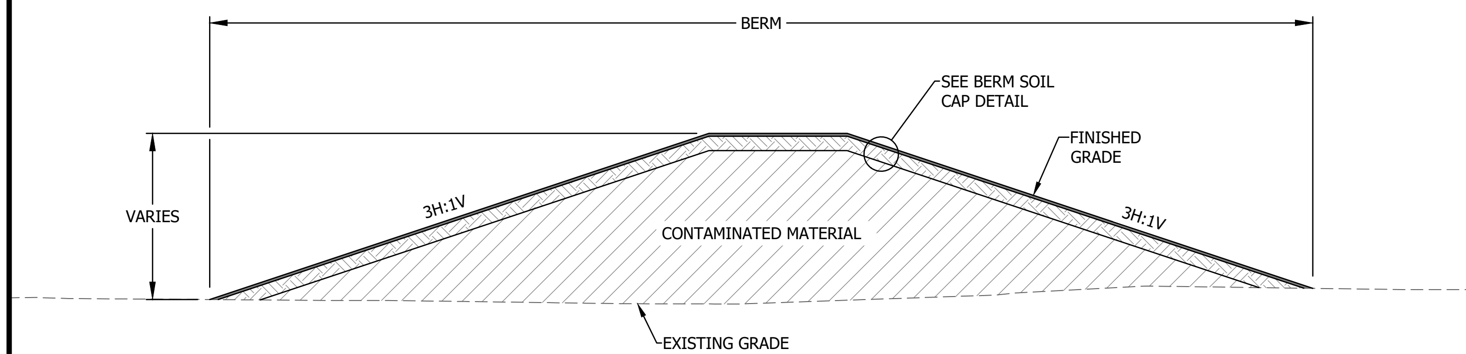
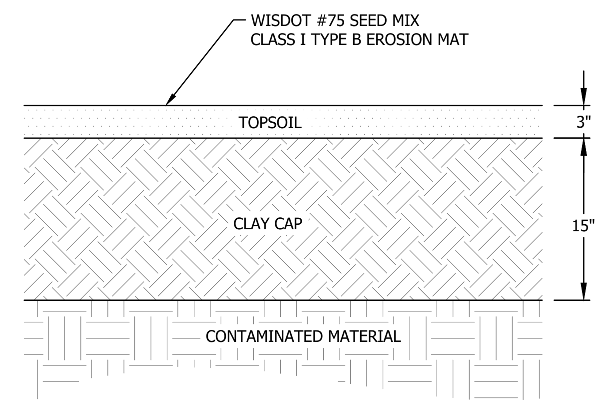
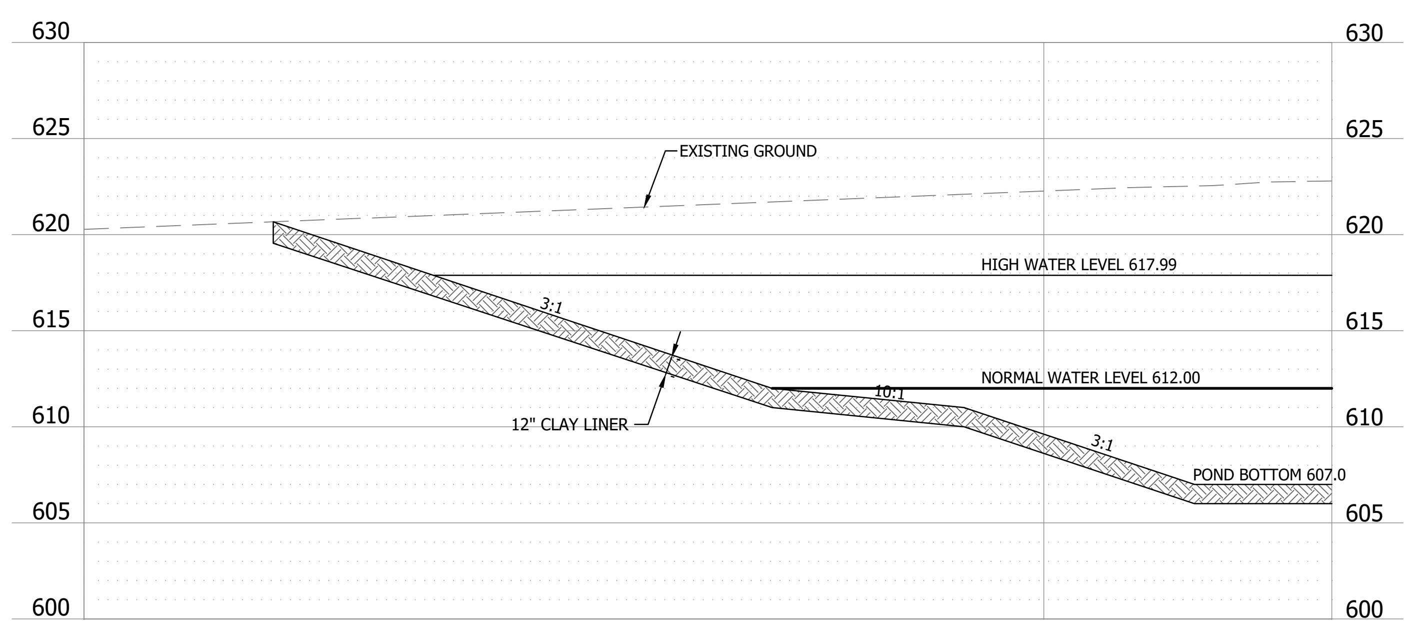


1 BERM TYPICAL SECTION
NTS



2 BERM SOIL CAP
NTS



A POND CROSS SECTION
NTS

4 ASPHALT SALT PAD
NTS

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CONSTRUCTION DETAILS
C. REISS DOCK
C. REISS COMPANY, LLC
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C8.01

Plot Date: 07/11/2022 - 9:07pm
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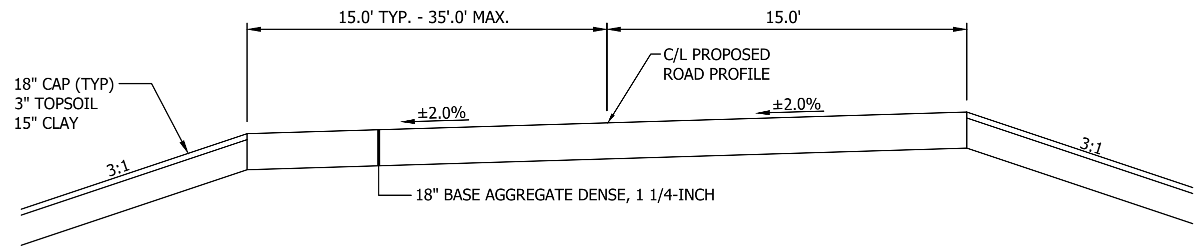
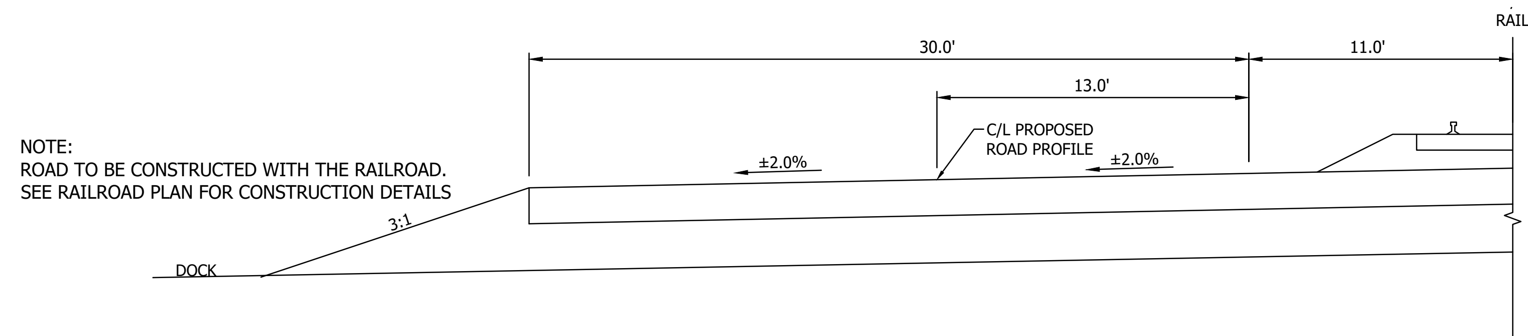
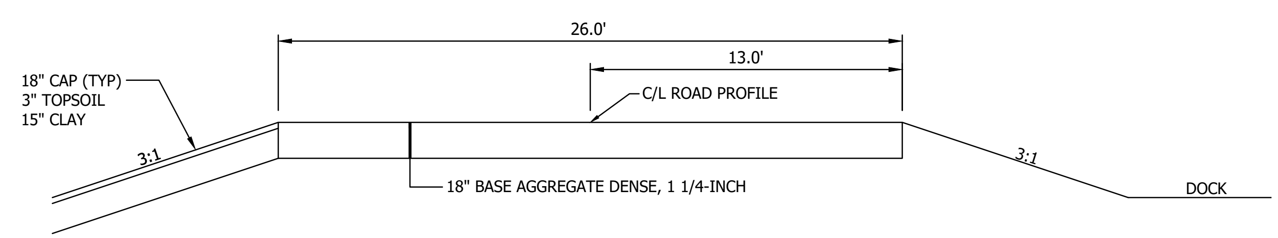


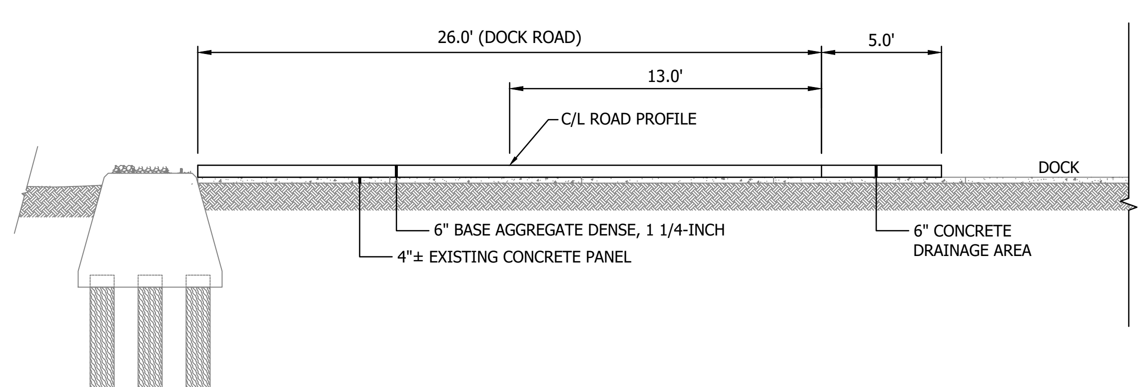
1 TYPICAL SECTION - MAIN ROAD
STA. 1+00 - STA. 21+26



2 TYPICAL SECTION - MAIN ROAD ALONG RAILROAD
STA. 21+26 - STA. 45+37



3 TYPICAL SECTION - DOCK ROAD
STA. 100+50 - STA. 103+45.27
STA. 126+64.88 - STA. 129+21.82



4 TYPICAL SECTION - DOCK ROAD
STA. 103+45.27 - STA. 126+64.88

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TYPICAL ROAD SECTIONS

C. REISS DOCK
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SHEET NUMBER
C8.02

Plot Date: 07/11/2022 - 9:08am
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Xrefs: TB-34x22-MEQ

1 SITE FENCE DETAIL
NTS

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CONSTRUCTION DETAILS

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C8.03

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Xrefs:, TB-34x22-MEQ

STRUCTURAL NOTES:

GOVERNING CODES:

1.	GENERAL	IBC 2015
2.	LOADS	ASCE 7-10
3.	CONCRETE	ACI 318-14
4.	STEEL	AISC 360-10
5.	MASONRY	TMS 402-11

DESIGN LOADS:

1. DEAD LOADS
   - CONCRETE — 150 PSF
   - 12" PRECAST HOLLOW CORE PLANK — 95 PSF
   - 8" CMU @ 48" OC — 44 PSF
   - ROOF — 10 PSF
   - MECHANICAL/ELECTRICAL — 5 PSF
2. LIVE LOADS
   - GARAGE / MECHANICAL SLAB — 150 PSF
   - BREAK ROOM / RESTROOM SLAB — 100 PSF
   - STORAGE AREA — 150 PSF
   - ROOF — 20 PSF
3. SNOW LOAD (S)
   - GROUND SNOW — 50 PSF
   - FLAT ROOF — 42 PSF
   - RISK — III
   - EXPOSURE — C
   - I — 1.1
   - C_e — 1.0
   - C_t — 1.1
   - DRIFT — SEE PLANS
4. WIND LOAD (W)
   - V — 120 MPH
   - RISK — III
   - EXPOSURE — C
   - K_{ZT} — 1.0
   - K_d — 0.85
5. SEISMIC — N/A
6. NET ALLOWABLE BEARING PRESSURE — 2000 PSF (ASSUMED)

MATERIALS:

1. CONCRETE — 4,000 PSI AT 28 DAYS, TYPE I
2. REINFORCEMENT BARS — ASTM A615, GRADE 60
3. STRUCTURAL STEEL
   - BEAMS — ASTM A992, GRADE 50
   - HSS — ASTM A500, GRADE B
   - OTHER SHAPES — ASTM A36
4. STRUCTURAL FILL — COARSE AGGREGATE MNDOT 3149.2.B2
5. MASONRY
   - CONCRETE MASONRY UNITS — ASTM C90, 2,000 PSI COMP. STRENGTH
   - JOINT REINFORCEMENT — LADDER TYPE, NO. 9 WIRE ASTM A153, CLASS B2 GALV.
   - MORTAR — ASTM C270, TYPE S
   - GROUT — ASTM C476, 3,000 PSI COMPREHENSIVE STRENGTH
6. PRECAST CONCRETE PLANK — 5,000 PSI AT 28 DAYS

CONSTRUCTION NOTES:

1. EXCAVATION
   A. CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TEMPORARY SHORING AND BRACING NECESSARY TO PROTECT PERSONNEL AND PROPERTY FROM INJURY OR DAMAGE DURING CONSTRUCTION OPERATION.
2. CONCRETE
   A. LAP SPLICES AND 90 DEGREE END HOOKS SHALL BE AS SHOWN IN THE FOLLOWING TABLE UNLESS NOTED.

REINF BAR SIZE	SLAB, WALL, COLUMN		BEAMS		90 DEG END HOOK
	BAR LAP	TOP BAR *	BAR LAP	TOP BAR *	
#3	19 IN	24 IN	28 IN	36 IN	6 IN
#4	25 IN	32 IN	37 IN	48 IN	8 IN
#5	31 IN	40 IN	46 IN	60 IN	10 IN
#6	37 IN	48 IN	56 IN	72 IN	12 IN
#7	54 IN	70 IN	81 IN	105 IN	14 IN
#8	62 IN	80 IN	93 IN	120 IN	16 IN
#9	70 IN	90 IN	104 IN	135 IN	19 IN

* TOP BAR LAP SPLICES ARE HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 12 IN. OF CONCRETE IS CAST IN THE MEMBER BELOW THE SPLICE.

   B. REINFORCING BARS SHALL HAVE THE FOLLOWING CONC. COVER UNLESS NOTED.
      1. CONCRETE CAST AGAINST EARTH — 3"
      2. WALLS, BEAMS AND ALL OTHER CONCRETE EXPOSED TO WEATHER OR WATER — 2"
   C. CONCRETE SHALL BE PLACED WITHOUT CONSTRUCTION JOINTS EXCEPT WHERE SPECIFICALLY SHOWN ON THE DRAWINGS OR AS APPROVED BY THE ENGINEER.
   D. BEVEL ALL EXPOSED CORNERS OF CONCRETE 3/4" x 3/4".
   E. VERIFY SIZE AND LOCATION OF ALL NEW EQUIPMENT BASES AND OPENINGS.

SLAB CONSTRUCTION NOTES:

1. TOOL AND CAULK CONTROL JOINTS IN ALL SLABS AT 8 FEET MAXIMUM SPACING. JOINTED SLAB PANEL LENGTH TO WIDTH RATIOS SHALL NOT EXCEED 1.5 : 1.0.
2. PROVIDE 6" THICK CONCRETE SLAB WITH #5 @ 12" E.W. ON 8" OF WELL DRAINING GRANULAR BASE FILL UNLESS NOTED.
3. PROVIDE 4" THICK CONCRETE SLAB WITH #3 @ 12" E.W. ON 6" OF WELL DRAINING GRANULAR BASE FILL.
4. PROVIDE SLAB DETAIL _____ AT TRENCH DRAINS. SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION.

FOUNDATION NOTES:

1. REFER TO GEOTECHNICAL REPORT NO. _________ DATED _________ PREPARED BY _________.
2. PROVIDE EMBEDDED DOWELS IN FOOTINGS TO MATCH ALL VERTICAL WALL REINFORCING U.N.O. SECURELY TIE DOWELS PRIOR TO PLACING CONCRETE.
3. PRIOR TO PLACEMENT OF STRUCTURAL FILL, COMPACT NATIVE SOILS TO MINIMUM 95% PROCTOR DENSITY.
4. PLACE AND COMPACT MIN 1'-0" THICK IMPORTED STRUCTURAL FILL OR SUITABLE ONSITE MATERIAL UNDER ALL NEW FOUNDATIONS AND INTERIOR SLABS. PLACE IN MAX 8" HIGH LIFTS AND COMPACT TO MIN 95% PROCTOR DENSITY, ± 3% MOISTURE CONTENT.
5. FIELD VERIFY SIZE, LOCATION AND ELEVATION OF EXISTING FOOTINGS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
6. FOOTING ELEVATIONS SHALL BE AS NOTED.
7. ELEVATIONS OF TOPS OF FOOTINGS VARIES. SEE PLAN.
8. DROP FOOTING BELOW ALL UNDER FLOOR PIPES.
9. VERIFY ASSUMED EQUIPMENT LOADS, DIMENSIONS AND FOUNDATION CONFIGURATION WITH EQUIPMENT MANUFACTURER.

PRECAST CONCRETE PLANK NOTES:

1. PRECAST CONCRETE PLANK SHALL HAVE 1-HOUR FIRE RATING UNLESS NOTED.
2. VERIFY PLANK PENETRATION SIZES AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
3. PROVIDE STANDARD CONCRETE DETAILS SHOWN ON THE DRAWING UNLESS NOTED.
4. BRACE TOPS OF NON-LOAD BEARING MASONRY WALLS AT PRECAST PLANK LOCATIONS PER DETAIL _____ .
5. DESIGN PRECAST FOR LOADS SHOWN INCLUDING SNOW DRIFT PER PLAN DRAWINGS.

MASONRY WALL CONSTRUCTION NOTES:

1. CONCRETE BLOCK SHALL BE LAID IN RUNNING BOND UNLESS NOTED.
2. PROVIDE OPEN-CORE STYLE CMU FOR ALL MASONRY WALLS.
3. PROVIDE BULLNOSED CMU FOR ALL EXPOSED MASONRY WALL CORNERS.
4. PROVIDE VERTICAL #5 @ 48" SPACING IN ALL MASONRY WALLS UNLESS NOTED.
5. GROUT FULL ALL CMU CORES CONTAINING VERTICAL REINFORCEMENT.
6. INSTALL HORIZONTAL JOINT REINFORCING IN EVERY OTHER COURSE.
7. PROVIDE MASONRY EXPANSION JOINT DETAIL _____ WHERE INDICATED THUS.
8. PROVIDE MASONRY CONTROL JOINT DETAIL _____ WHERE INDICATED THUS, OR AT A SPACING OF NO GREATER THAN 20 FEET.
9. TOOL ALL MASONRY JOINTS CONCAVE.
10. PROVIDE STEEL BEARING PLATES, 5/8" x 8" x 10" W/ (2) 1/2" DIA x 4" HEADED STUDS FOR ALL STEEL BEARING ON MASONRY. GROUT CORE BELOW BEARING FULL.

STRUCTURAL STEEL:

1. REFERENCES: AWS D1.1 - STRUCTURAL WELDING CODE - STEEL
2. WELD METAL SHALL BE 70 KSI.
3. ALL WELDING SHALL BE PERFORMED BY AWS QUALIFIED OPERATORS.
4. ALL BOLTS SHALL BE 3/4" DIA GALV A325N UNLESS NOTED.

ENGINEERED METAL BUILDING NOTES:

1. LATERAL DRIFT SHALL BE LIMITED TO **L/360**.
2. METAL BUILDING FRAMING AND FOUNDATION REQUIREMENTS AND GEOMETRIES SHALL BE COORDINATED PRIOR TO CONSTRUCTION.
3. REFER TO SPECIFICATION 13 34 19 FOR FURTHER METAL BUILDING REQUIREMENTS.

REQUIRED SPECIAL INSPECTIONS

DESCRIPTION OF WORK IBC SECTION 1704	INSPECTION		TESTING		N/A	REMARKS
	YES	NO	YES	NO		
1. CONCRETE	●		●			
2. BOLTS INSTALLED IN CONCRETE	●			●		
3. DUCTILE MOMENT-RES CONCRETE FRAME					●	
4. REINF STEEL AND PRESTRESSING STEEL	●			●		
5. WELDING					●	
6. HIGH-STRENGTH BOLTING					●	
7. STRUCTURAL MASONRY	●		●			
8. REINFORCED GYPSUM CONC					●	
9. INSULATING-CONCRETE FILL					●	
10. SPRAY-APPLIED FIREPROOFING					●	
11. PILING, DRILLED PIERS AND CAISSONS					●	
12. SHOTCRETE					●	
13. SPECIAL GRADING EXC AND FILLING	●		●			
14. WOOD					●	
15. SPECIAL CASES					●	

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REVIEW SET
(2022.07.01)

C. REISS COAL COMPANY, SUPERIOR, WISCONSIN
C. REISS COAL DOCK RENOVATION
STRUCTURAL NOTES

NO	REVISION	DATE

SURVEY	
DRAWN	AJM
DESIGNED	DFW
CHECKED	
APPROVED	
PROJ. NO.	192707141

SHEET NUMBER
S001

Plot Date: 07/12/2022 - 8:06am
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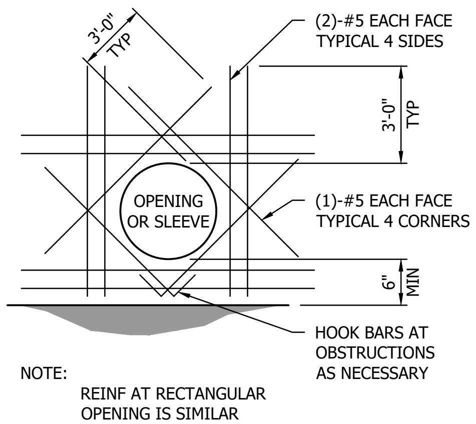
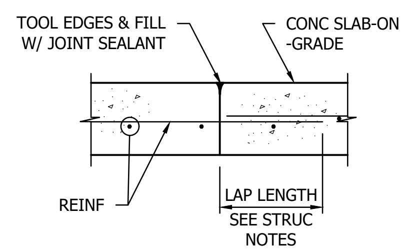
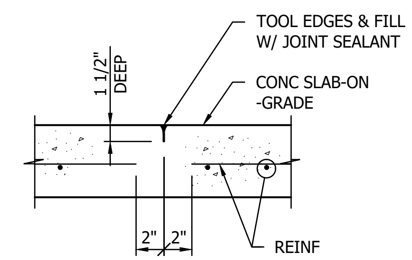


1 REINFORCING DETAIL
NO SCALE



2 SLAB CONSTRUCTION JOINT
NO SCALE



3 SLAB CONTROL JOINT
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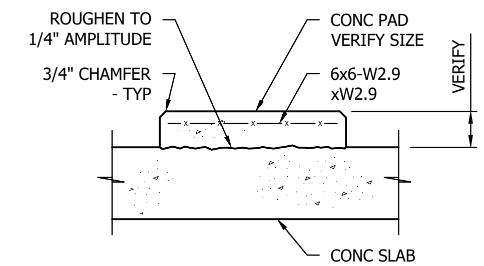
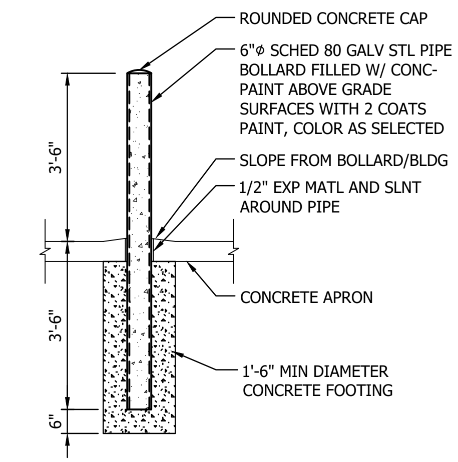
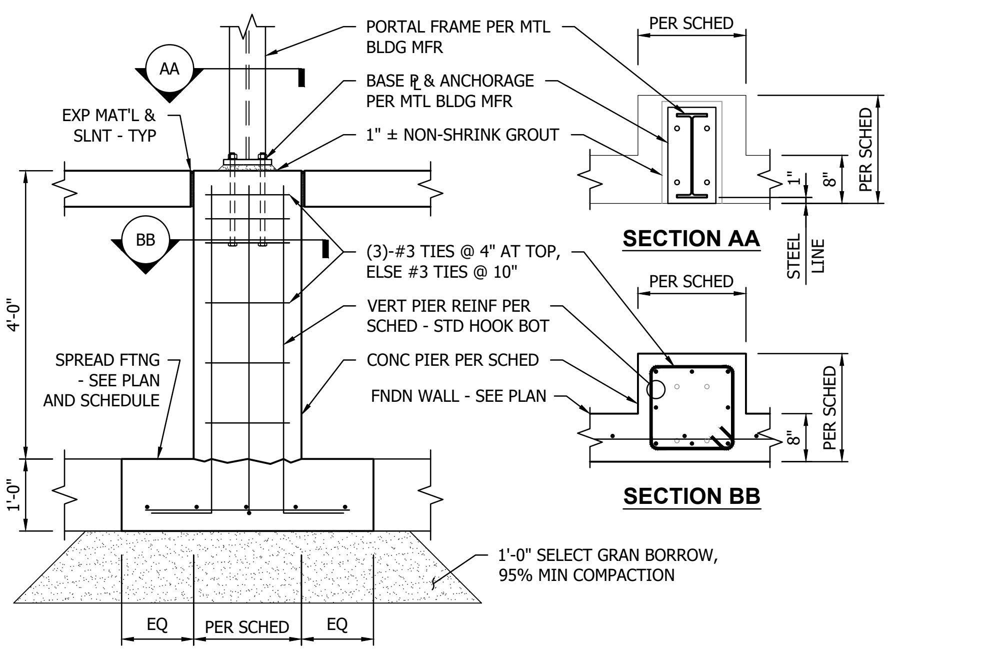


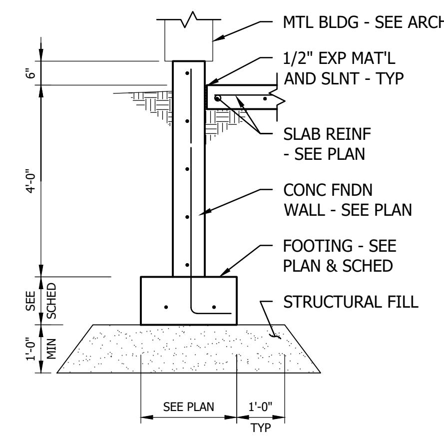
4 PAD DETAIL
NO SCALE



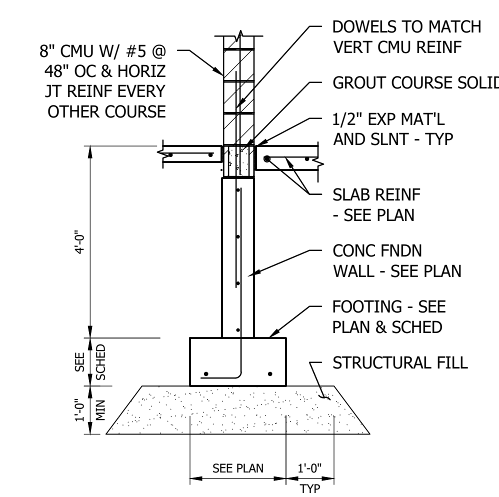
5 PIPE BOLLARD DETAIL
NO SCALE



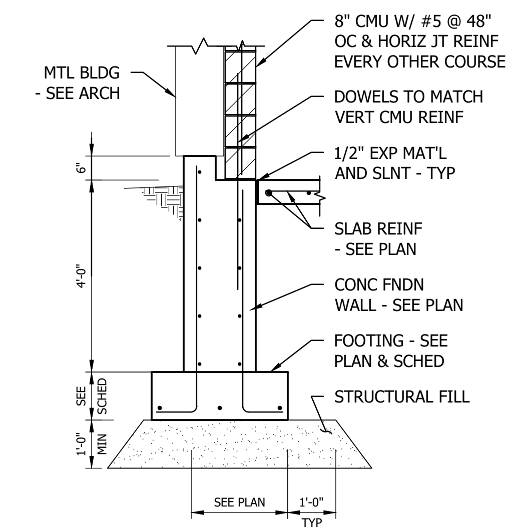
6 PIER DETAIL
0 8" 1'-4" 2'-8"



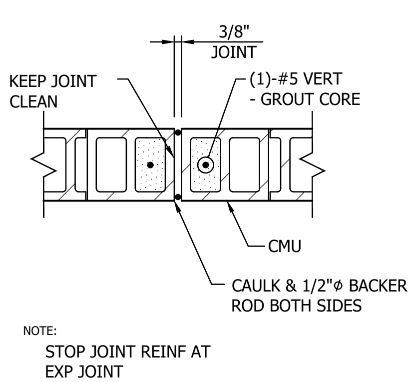
7 PERIMETER WALL DETAIL
NO SCALE



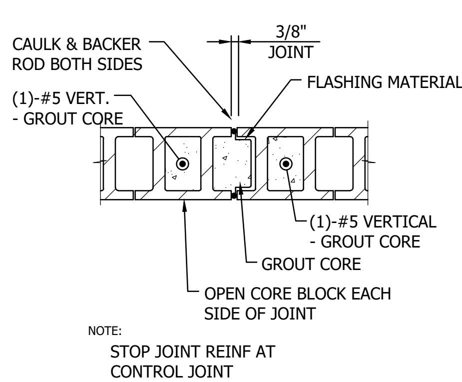
8 CMU BEARING FOUNDATION DETAIL
NO SCALE



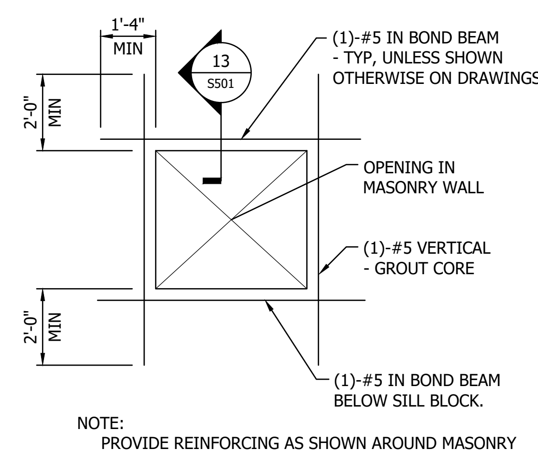
9 PERIMETER WALL DETAIL - CMU BEARING
NO SCALE



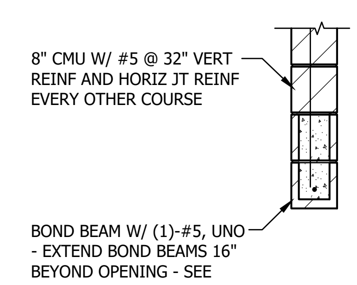
10 EXPANSION JOINT DETAIL
NO SCALE



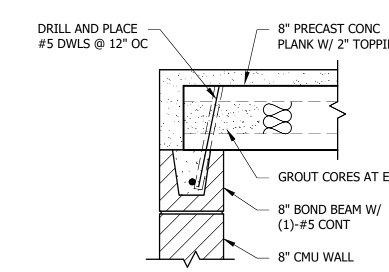
11 CONTROL JOINT DETAIL
NO SCALE



12 REINFORCING AT OPENING
NO SCALE



13 LINTEL DETAIL
NO SCALE



14 PRECAST BEARING DETAIL
NO SCALE

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REVIEW SET
(2022.07.01)

C. REISS COAL COMPANY, SUPERIOR, WISCONSIN
C. REISS COAL DOCK RENOVATION
STRUCTURAL DETAILS

NO	REVISION	DATE

SURVEY	
DRAWN	AJM
DESIGNED	DFW
CHECKED	
APPROVED	
PROJ. NO.	193707141

SHEET NUMBER
S501

Plot Date: 07/12/2022 - 8:07am
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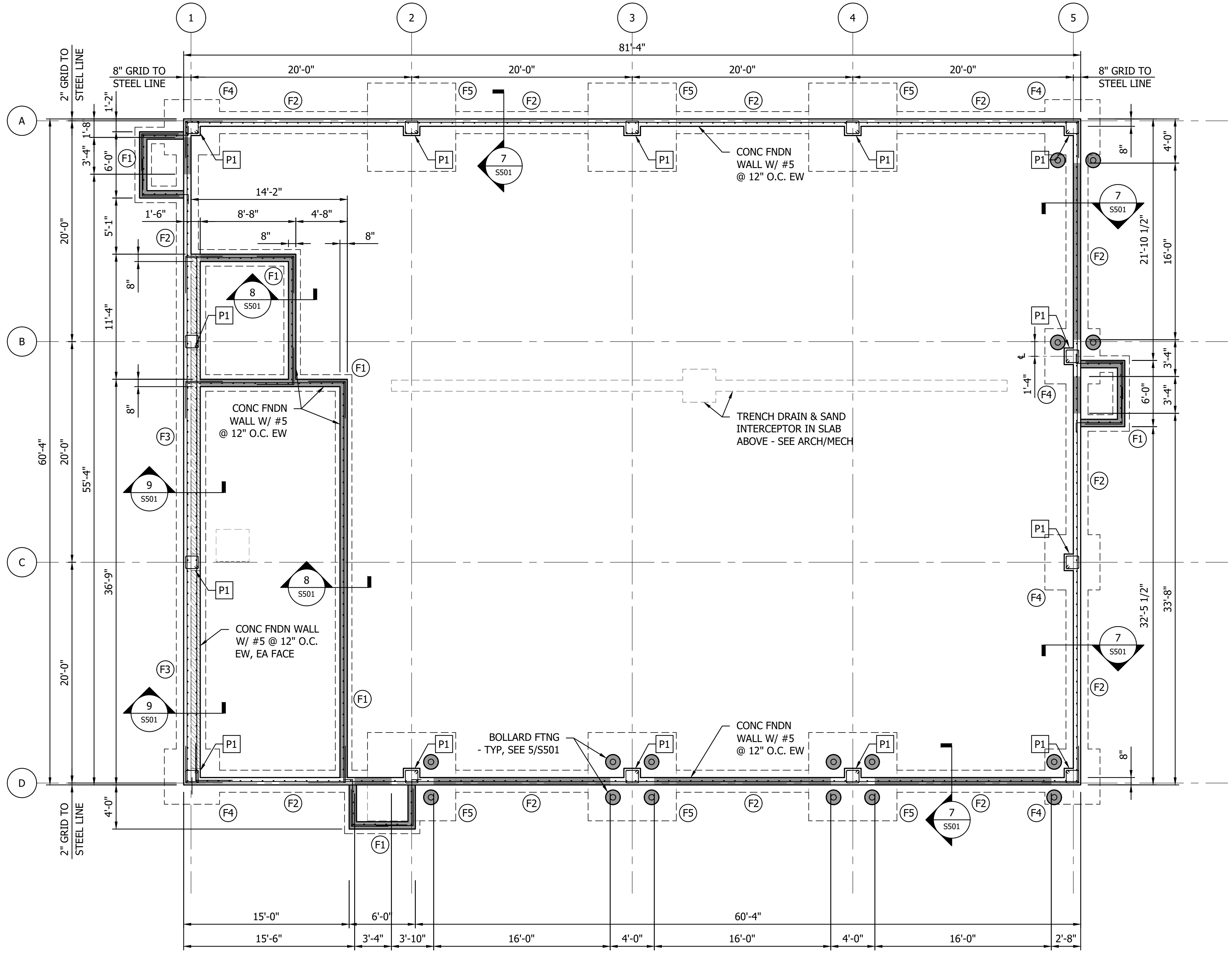
Xrefs: 193804617_BORDER



1 MAINTENANCE BUILDING FOUNDATION PLAN

0 2'-8" 5'-4" 10'-8"

FOOTING SCHEDULE

MARK	SIZE	COMMENTS
F1	1'-6" x CONT x 1'-0" W/ (2)-#5 CONT.	-
F2	2'-0" x CONT x 1'-0" W/ (2)-#5 CONT.	-
F3	2'-8" x CONT x 1'-0" W/ (3)-#5 CONT.	-
F4	5'-0" SQ x 1'-0" W/ (6)-#6 EA WAY BOT	-
F5	8'-0" SQ x 1'-2" W/ (9)-#6 EA WAY BOT	-

PIER SCHEDULE

MARK	SIZE	REINF	COMMENTS
P1	1'-6" SQ	(8)-#6 VERT #3 TIES @ 12" TYP	-

PIER SCHEDULE NOTES:
1. HOOK VERTICAL REINF INTO FOOTING.
2. PROVIDE (3)-#3 TIES @ 4" @ TOP OF PIER.

SHEET NOTES:
1. HOOK VERTICAL REINF INTO FOOTING.
2. FINISHED FLOOR ELEVATION SHALL BE TAKEN AS 100'-0".
3. T/CONCRETE ELEVATIONS SHALL BE 100'-6" UNLESS OTHERWISE NOTED.
4. T/CONCRETE ELEVATIONS SHALL BE 100'-0" WHERE INDICATED THUSLY:
5. T/CONCRETE ELEVATIONS SHALL BE 99'-4" WHERE INDICATED THUSLY:

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C. REISS COAL COMPANY, SUPERIOR, WISCONSIN
C. REISS COAL DOCK RENOVATION
MAINTENANCE BUILDING
FOUNDATION PLAN

NO	REVISION	DATE

SURVEY	
DRAWN	AJM
DESIGNED	DFW
CHECKED	
APPROVED	
PROJ. NO.	193707141

SHEET NUMBER
SB101

Plot Date: 07/12/2022 - 8:07am
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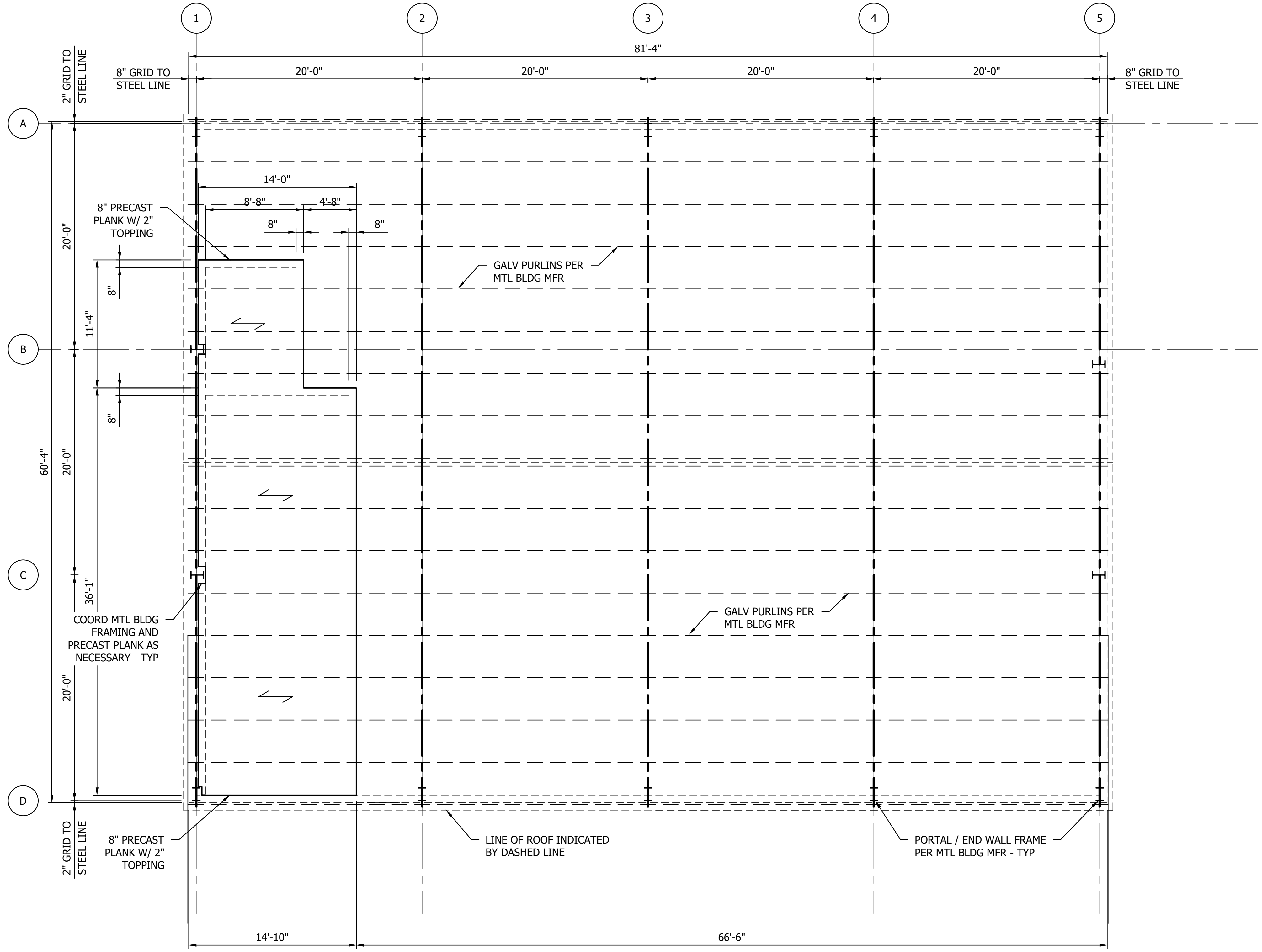
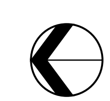


1 ROOF FRAMING PLAN

0 2'-8" 5'-4" 10'-8"



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C. REISS COAL COMPANY, SUPERIOR, WISCONSIN

C. REISS COAL DOCK RENOVATION
MAINTENANCE BUILDING
ROOF FRAMING PLAN

NO	REVISION	DATE

SURVEY	
DRAWN	AJM
DESIGNED	DFW
CHECKED	
APPROVED	
PROJ. NO.	193707141

SHEET NUMBER
SB201

Plot Date: 07/12/2022 - 8:07am
Drawing name: V:\1937\active\193707141\05_report_deliv\drawings_design\cad_fig\193707141-SB201.dwg
Xrefs:, 193707141-XB1NA, 193707141-BDR

ONE-LINE DIAGRAM SYMBOLS

- INCOMING LINE
- POWER CIRCUIT BREAKER
- OCB — OIL CIRCUIT BREAKER
- CIRCUIT BREAKER
- DRAW-OUT CIRCUIT BREAKER
- LOAD BREAK INTERRUPTING SWITCH
- SINGLE THROW DISCONNECTING SWITCH
- DOUBLE THROW DISCONNECTING SWITCH
- FUSE
- DISCONNECTING FUSE
- SWITCH AND FUSE
- RESISTOR1
- RESISTOR2
- CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER
- LA — LIGHTNING ARRESTER
- TRANSFORMER
- CAPACITOR
- M- — MOTOR
- G- — GENERATOR
- RELAY (* RELAY NO.)
- STRESS CONE
- FUSE CUTOUT
- ENCLOSED FUSE CUTOUT
- A — AMMETER
- AS — AMMETER SWITCH
- DM — DEMAND METER
- PF — POWER FACTOR METER
- V — VOLTMETER
- VS — VOLTMETER SWITCH
- W — WATTMETER
- WH — WATTHOUR METER
- WH DR — WATTHOUR METER WITH DEMAND REGISTER
- MM — MULTI-FUNCTION METER
- M — METER
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSER
- K — KEY INTERLOCK
- AUTOMATIC TRANSFER SWITCH (A.T.S.)

PANELBOARD NAMING CONVENTION

TYPICAL UNLESS INDICATED OTHERWISE

LPA1 — EQUIPMENT TYPE / VOLTAGE / EQUIPMENT NUMBER

EQUIPMENT TYPE:
- SE = SERVICE ENTRANCE PANELBOARD
- LP = LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARD
- PP = POWER PANELBOARD
- L = LIGHTING CONTROL PANEL

VOLTAGE:
- A = 120/240 1ø
- B = 208/120 3ø
- C = 240/120 3ø
- D = 480/277 3ø

LIGHTING SYMBOLS

AE 1 a * — FIXTURE TYPE; EMERGENCY BALLAST; CIRCUIT NUMBER; FLUORESCENT FIXTURE; SWITCH DESIGNATION; MOUNTING HEIGHT

MOUNTING HEIGHT:
- CEILING RECESSED MOUNTED
- CEILING SURFACE MOUNTED
- PENDANT MOUNTED AT X" A.F.F.
- WALL MOUNTED AT X" A.F.F.

- WALL MOUNT FIXTURE
- FLUORESCENT OR INCANDESCENT RECESSED DOWNLIGHT
- FLUORESCENT OR INCANDESCENT RECESSED WALLWASHER
- WALL MOUNTED UNIT (NO BRACKET = CEILING MOUNT)
- EXIT LIGHT
- INDICATES ARROW DIRECTION (IF ANY)
- FACE(S) ON WHICH LETTERING APPEARS
- EXIT/BATTERY PACK LIGHT
- TRACK LIGHTING
- COVE LIGHT
- MISCELLANEOUS FIXTURES

POWER SYMBOLS

WP 12 GFI — WEATHERPROOF; DUPLEX RECEPTACLE - 18"AFF; CIRCUIT NUMBER; GROUND FAULT TYPE

- PEDESTAL MOUNTED FLOOR BOX
- DOUBLE DUPLEX RECEPTACLE - 18"AFF
- EMERGENCY POWER DUPLEX RECEPTACLE - 18"AFF
- J — CEILING PENDENT RECEPTACLE DROP
- FLOOR MOUNTED RECEPTACLE OUTLET
- PSA — PLUG STRIP - LETTER DESIGNATES TYPE - 18"AFF
- HOME RUN SURFACE MOUNT
- HOME RUN UNDER-GROUND OR IN-SLAB
- CEILING MOUNTED RECEPTACLE
- WELDING RECEPTACLE - 18"AFF
- SPECIAL PURPOSE RECEPTACLE - 18"AFF

POWER SYMBOLS (CONT)

TVSS 1 — ISOLATES GROUND; DUPLEX RECEPTACLE - 18"AFF; CIRCUIT NUMBER; TRANSIENT VOLTAGE SURGE SUPPRESSION

- SPLIT WIRE RECEPTACLE - 18"AFF
- CLOCK OUTLET MOUNT AT +7-6" AFF, OR AS NOTED ON DRAWINGS.
- A — REMOTE CONNECTION FOR CD / TAPE PLAYER
- MV — MICROPHONE RECEPTACLE WITH VOLUME CONTROL
- $ a — SINGLE POLE SWITCH - 48"AFF; SWITCH DESIGNATION
- $ 2 — DOUBLE POLE SWITCH - 48"AFF
- $ 3 — THREE-WAY SWITCH - 48"AFF
- $ 4 — FOUR-WAY SWITCH - 48"AFF
- $ D — DIMMER SWITCH - 48"AFF
- $ K — KEY OPERATED SWITCH - 48"AFF
- $ P — SWITCH AND PILOT LIGHT - 48"AFF
- $ M — MANUAL MOTOR STARTER
- W — OCCUPANCY SENSOR (WALL MOUNTED) - 48"AFF
- C — OCCUPANCY SENSOR (CEILING MOUNTED)
- RECEPTACLE PANEL
- LIGHTING PANEL - 54"AFF
- DISTRIBUTION PANEL - 54"AFF
- DISCONNECT SWITCH - 54"AFF
- F — FUSED DISCONNECT SWITCH - 54"AFF
- B — WALL MOUNTED CIRCUIT BREAKER - 54"AFF
- COMBINATION STARTER DISCONNECT - 54"AFF
- MOTOR 3 PHASE
- MOTOR 1 PHASE
- M — METER SOCKET

TELEPHONE AND INTERCOM SYMBOLS

- TELEPHONE OUTLET - 18"AFF
- W — WALL MOUNT TELEPHONE OUTLET - 54"AFF
- FLOOR MOUNTED TELEPHONE OUTLET
- D — DATA COMMUNICATIONS OUTLET - 18"AFF
- VOICE/DATA OUTLET - 18"AFF
- POWER/DATA COMMUNICATIONS CEILING POLE DROP
- D — FLOOR MOUNTED DATA COMMUNICATIONS OUTLET
- TC — TELEPHONE TERMINAL CABINET
- IDS — INTERCOM DOOR STATION - WALL MOUNTED 54"AFF
- IMS — INTERCOM MASTER STATION WALL OR DESK MOUNTED
- IHS — INTERCOM HANDSET STATION WITH HANDSET AND SPEAKER AMPLIFIER 54"AFF
- IS — INTERCOM SPEAKER

FIRE ALARM SYMBOLS

- F — MANUAL PULL STATION - 48"AFF
- F WP WG — FIRE ALARM HORN/ STROBE - 80"AFF (WP-WEATHERPROOF) (WG-WIRE GUARD)
- F — FIRE ALARM STROBE - 80"AFF
- FS — FLOW SWITCH
- TS — TAMPER SWITCH
- S P — SMOKE DETECTOR - PHOTOELECTRIC
- S I — SMOKE DETECTOR - IONIZATION
- S D — DUCT SMOKE DETECTOR
- S ER — SMOKE DETECTOR - ELEVATOR RECALL
- F — HEAT DETECTOR
- H — DOOR HOLDER
- F H — FIRE ALARM HORN
- F — FIRE ALARM BELL
- F — FIREMANS TELEPHONE

SECURITY SYMBOLS

- GB — GLASS MOUNTED GLASS BREAK DETECTOR
- GB — GLASS BREAK DETECTOR SENSING DIRECTION
- MD — MOTION DETECTOR SENSING DIRECTION
- HB — HELP BUTTON
- KP — KEYPAD TYPE ARMING STATION - 48"AFF
- ET — EMERGENCY TELEPHONE
- DC — DOOR CONTACT
- EL — ELECTRIC LOCK
- ES — ELECTRIC STRIKE
- R — REQUEST TO EXIT (REX) MOTION SENSOR
- CR — CARD READER - 48"AFF
- CCTV CAMERA - FIXED MOUNT
- CCTV CAMERA - PANT/TILT/ZOOM
- DGP — DATA GATHERING PANEL - BURGLAR ALARM
- ACP — ACCESS CONTROL PANEL

CONTROL/MISC SYMBOLS

- J — WALL MOUNTED JUNCTION BOX
- J — CEILING MOUNTED JUNCTION BOX
- S — SOLENOID
- L — LEVEL TRANSDUCER
- E — EMERGENCY STOP SWITCH
- LS — LIMIT SWITCH
- FS — FLOW SWITCH
- P — PRESSURE SWITCH
- T — TEMPERATURE SWITCH
- S — SPEED SWITCH
- F — FLOOD SWITCH
- L — LEVEL (FLOAT) SWITCH
- D — DAMPER
- SS — SURGE SUPPRESSER
- PUSHBUTTON STATION
- PUSHBUTTON WITH ILLUMINATED STOP
- SELECTOR SWITCH
- SELECTOR SWITCH WITH INDICATING LIGHT
- BELL
- BUZZER
- HORN
- DOOR HOLDER
- PLUG

CONTROL/KEY NOTES SYMBOLS

- 1 — KEYNOTE
- 1 — KEYNOTE
- 1 — KEYNOTE
- 1 — KEYNOTE
- X X — KEYNOTE
- 1 — KEYNOTE

CONTROL SCHEMATIC SYMBOLS

- NORMALLY CLOSED PUSHBUTTON
- NORMALLY OPEN PUSHBUTTON
- THREE - POSITION SELECTOR SWITCH
- TWO - POSITION SELECTOR SWITCH
- NORMALLY CLOSED LIMIT SWITCH - HELD OPEN
- NORMALLY OPEN LIMIT SWITCH

CONTROL SCHEMATIC SYM. (CONT)

- NORMALLY OPEN LIMIT SWITCH - HELD CLOSED
- NORMALLY CLOSED LIMIT SWITCH
- OPEN SWITCH WITH TIME DELAY CLOSING
- CLOSED SWITCH WITH TIME DELAY OPENING
- OPEN SWITCH WITH TIME DELAY OPENING
- CLOSED SWITCH WITH TIME DELAY CLOSING
- FLOW SWITCH (CLOSES ON INCREASE IN FLOW)
- FLOW SWITCH (OPENS ON INCREASE IN FLOW)
- LEVEL SWITCH (CLOSES ON RISING LEVEL)
- LEVEL SWITCH (OPENS ON RISING LEVEL)
- PRESSURE SWITCH (CLOSES ON RISING PRESSURE)
- PRESSURE SWITCH (OPENS ON RISING PRESSURE)
- TEMPERATURE SWITCH (CLOSES ON RISING TEMP.)
- TEMPERATURE SWITCH (OPENS ON RISING TEMP.)
- NORMALLY OPEN CONTACTS
- NORMALLY CLOSED CONTACTS
- INDICATING LIGHT
  - * — A - AMBER; B - BLUE; C - CLEAR; G - GREEN; N - NEON; OP - OPAL; OR - ORANGE; P - PURPLE
- PUSH TO TEST INDICATING LIGHT
- CONTROL SYSTEM OUTPUT
- SOLENOID
- MANUAL STARTER
- CURRENT TRANSFORMER
- TDR — TIMING RELAY
- CR OR R — RELAY
- M OL'S — MOTOR STARTER COIL AND OVERLOAD CONTACTS
- GROUND
- CONTROL CIRCUIT TRANSFORMER
- OVERLOAD

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LIC. NO.

DATE: JUNE 24, 2022

C. REISS COAL COMPANY, SUPERIOR, WISCONSIN

C. REISS COAL DOCK RENOVATION

ELECTRICAL SYMBOLS SHEET

NO	REVISION	DATE

SURVEY	
DRAWN	GM
DESIGNED	MTF
CHECKED	MTF
APPROVED	
PROJ. NO.	192707141

SHEET NUMBER

E001

Plot Date: 07/12/2022 - 8:04am
Drawing name: V:\1937\active\193707141\05_report_deliv\drawings_design\cad_fig\193707141-E001.dwg
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Xrefs:, 193707141-BDR

C. REISS COAL COMPANY, SUPERIOR, WISCONSIN

C. REISS COAL DOCK RENOVATION
ELECTRICAL
DETAILS

NO	REVISION	DATE

SURVEY	
DRAWN	GM
DESIGNED	MTF
CHECKED	MTF
APPROVED	MTF
PROJ. NO.	192707141

SHEET NUMBER
E601

DATE: JUNE 24, 2022 LIC. NO. ____________

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Plot Date: 07/12/2022 - 8:05am
Drawing name: V:\1937\active\193707141\05_report_deliv\drawings_design\cad_fig\193707141-E701.dwg
Xrefs:, 193707141-BDR

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DATE: JUNE 24, 2022 LIC. NO.

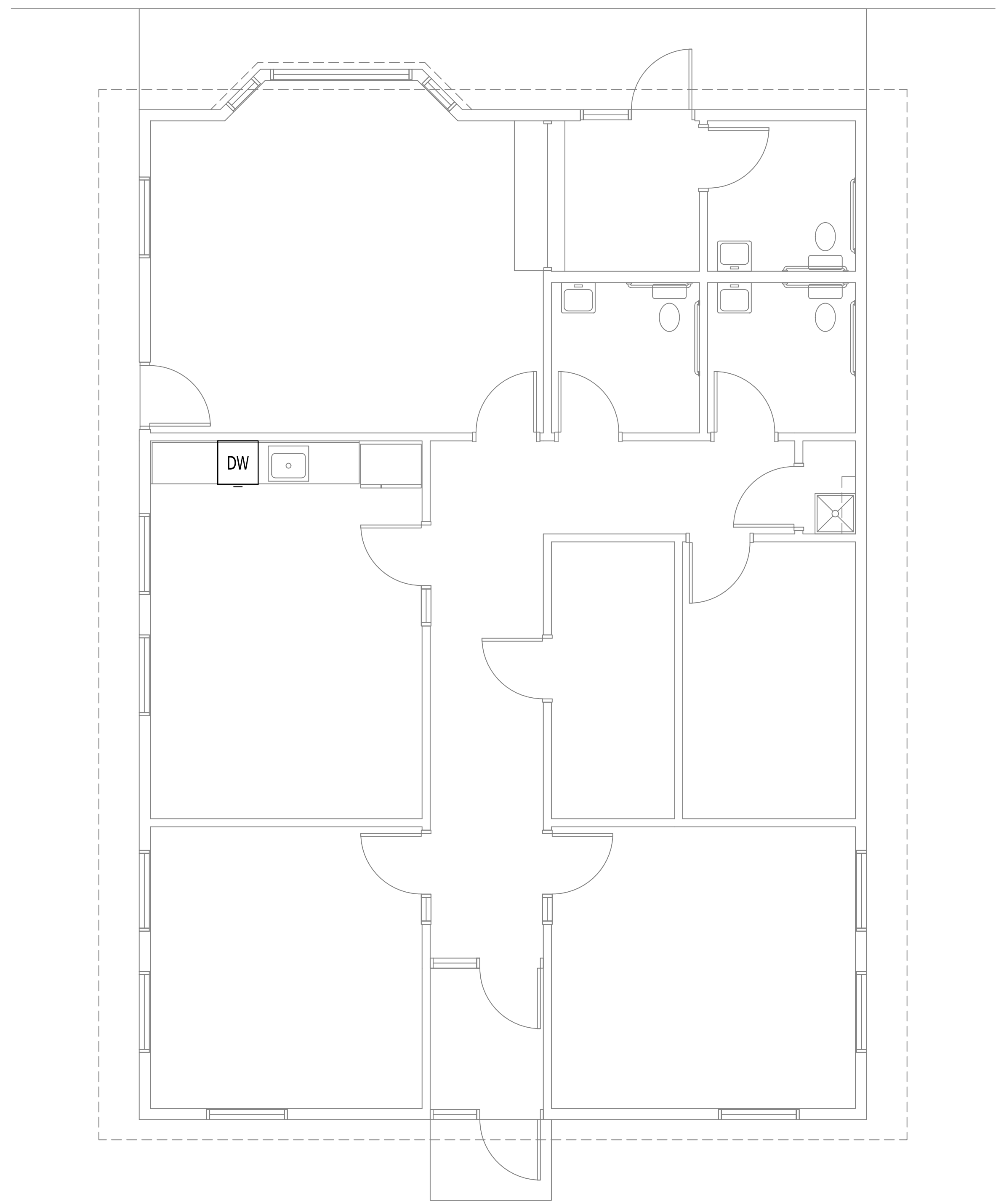
C. REISS COAL COMPANY, SUPERIOR, WISCONSIN

C. REISS COAL DOCK RENOVATION
ELECTRICAL
LINE DIAGRAMS

NO	REVISION	DATE

SURVEY	
DRAWN	GM
DESIGNED	MTF
CHECKED	MTF
APPROVED	MTF
PROJ. NO.	192707141

SHEET NUMBER
E701



1 BUILDING A LIGHTING PLAN

0 2' 4' 8'

Stantec
733 Marquette Avenue, Suite 1000
Minneapolis, MN 55402
www.stantec.com

DATE: JUNE 24, 2022 LIC. NO. 9354-005

C. REISS COAL COMPANY, SUPERIOR, WISCONSIN

C. REISS COAL DOCK RENOVATION
OFFICE BUILDING
BUILDING A LIGHTING PLAN

NO	REVISION	DATE

SURVEY	
DRAWN	GM
DESIGNED	MTF
CHECKED	
APPROVED	
PROJ. NO.	192707141

SHEET NUMBER
EA201

Plot Date: 07/12/2022 - 8:05am
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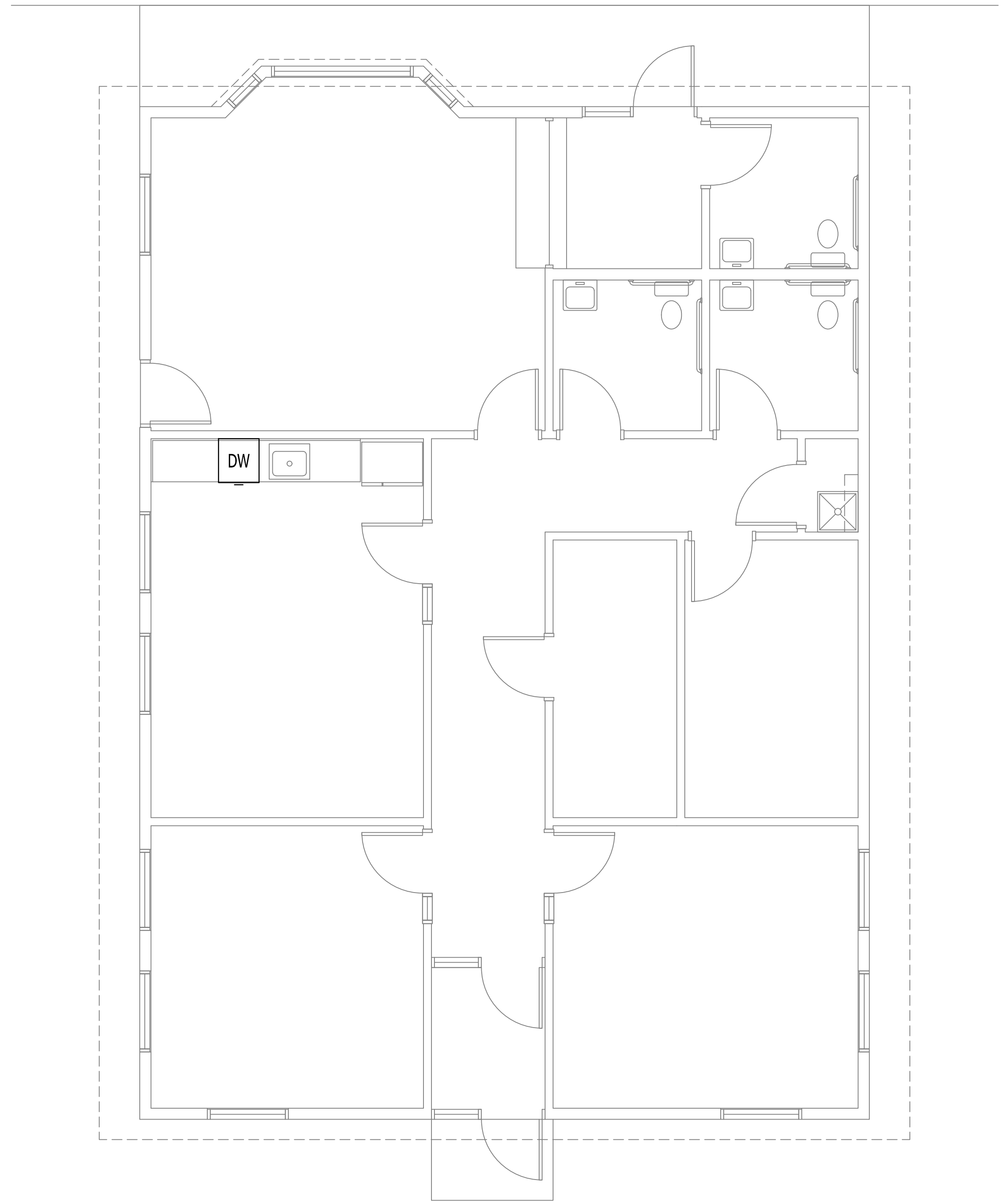
Xrefs:, 193707141-BDR, 193707141-XA1NA



1 BUILDING A POWER PLAN

0 2' 4' 8'

Stantec
733 Marquette Avenue, Suite 1000
Minneapolis, MN 55402
www.stantec.com

DATE: JUNE 24, 2022 LIC. NO. 9354-005

C. REISS COAL COMPANY, SUPERIOR, WISCONSIN

C. REISS COAL DOCK RENOVATION

OFFICE BUILDING

BUILDING A POWER PLAN

NO	REVISION	DATE

SURVEY	
DRAWN	GM
DESIGNED	MTF
CHECKED	
APPROVED	
PROJ. NO.	192707141

SHEET NUMBER
EA301

Plot Date: 07/12/2022 - 8:05am
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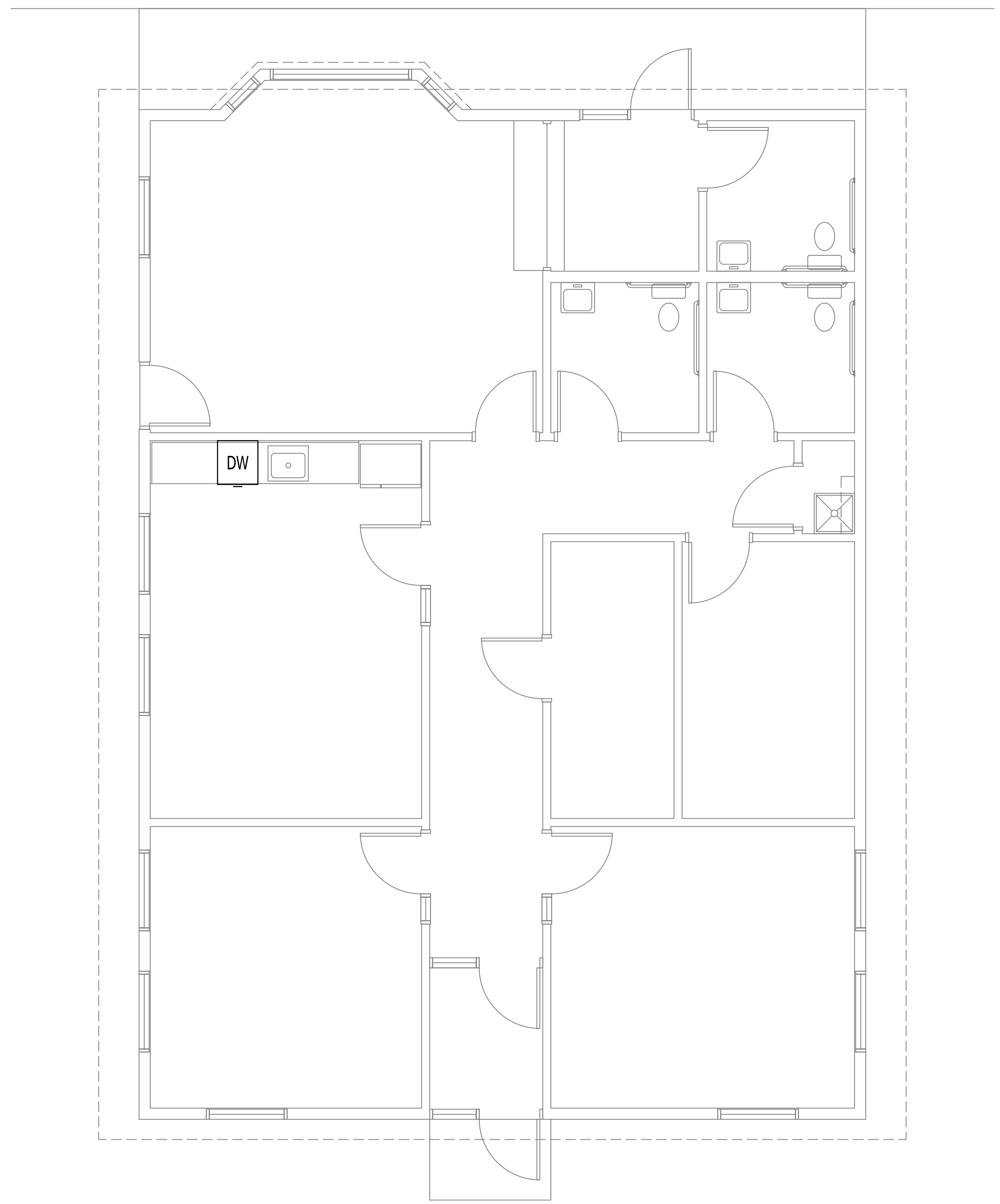
Xrefs:, 193707141-BDR, 193707141-XA1NA



1 BUILDING A SYSTEMS PLAN

0 2' 4' 8'

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Minneapolis, MN 55402
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DATE: JUNE 24, 2022 LIC. NO. 9354-005

C. REISS COAL COMPANY, SUPERIOR, WISCONSIN

C. REISS COAL DOCK RENOVATION

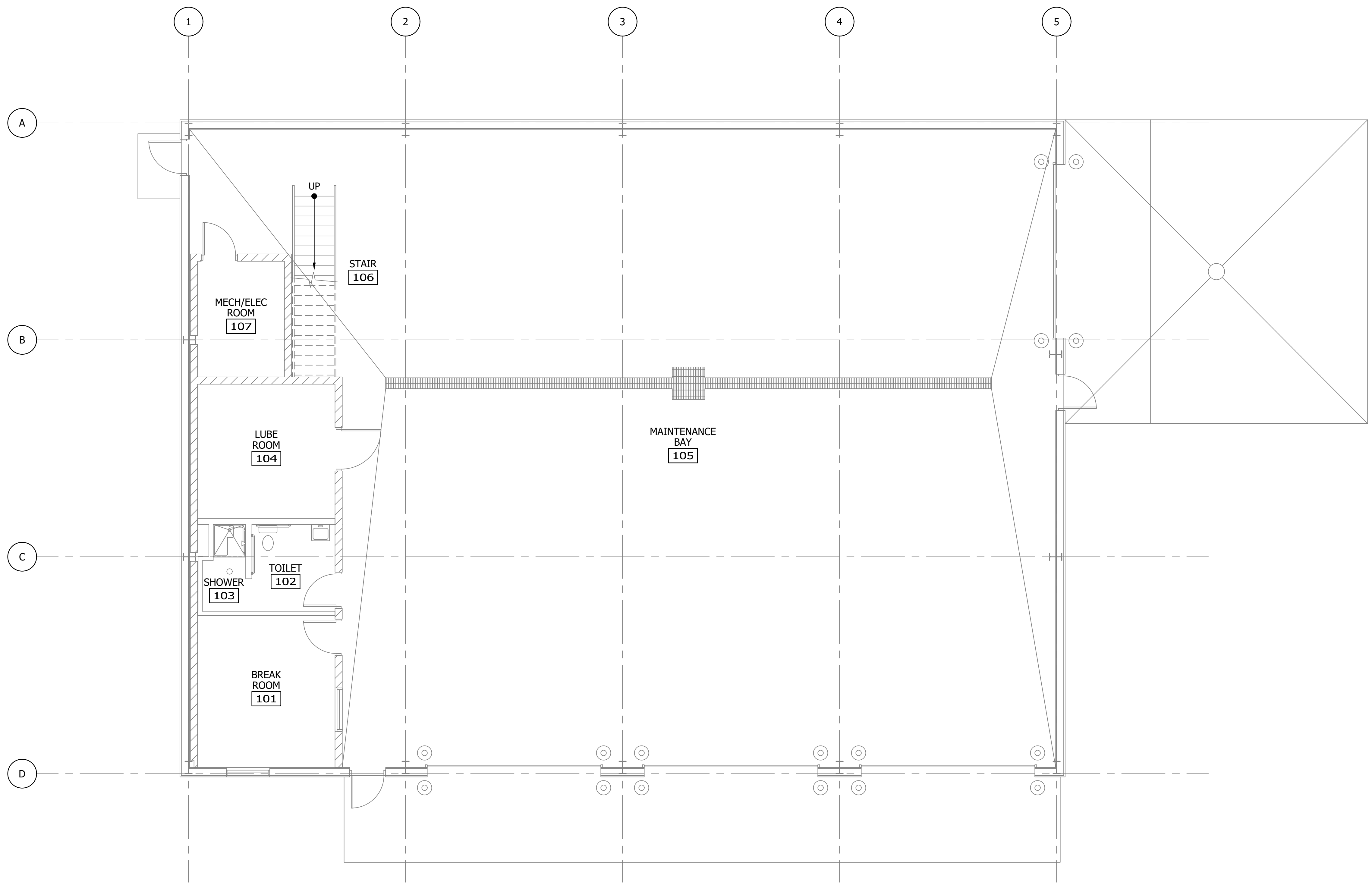
OFFICE BUILDING
BUILDING A SYSTEMS PLAN

NO	REVISION	DATE

SURVEY	
DRAWN	GM
DESIGNED	MTF
CHECKED	
APPROVED	
PROJ. NO.	192707141

SHEET NUMBER
EA401

Plot Date: 07/12/2022 - 8:05am
Drawing name: V:\1937\active\193707141\05_report_deliv\drawings_design\cad_fig\193707141-EA401.dwg
Xrefs:, 193707141-BDR, 193707141-XA1NA



1 BUILDING B LIGHTING PLAN

0 2'-8" 5'-4" 10'-8"

Stantec
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Minneapolis, MN 55402
www.stantec.com

DATE: JUNE 24, 2022 LIC. NO. 9354-005

C. REISS COAL COMPANY, SUPERIOR, WISCONSIN

C. REISS COAL DOCK RENOVATION
MAINTENANCE BUILDING
BUILDING B LIGHTING PLAN

NO	REVISION	DATE

SURVEY	
DRAWN	GM
DESIGNED	MTF
CHECKED	
APPROVED	
PROJ. NO.	193707141

SHEET NUMBER
EB201

Plot Date: 07/12/2022 - 8:05am
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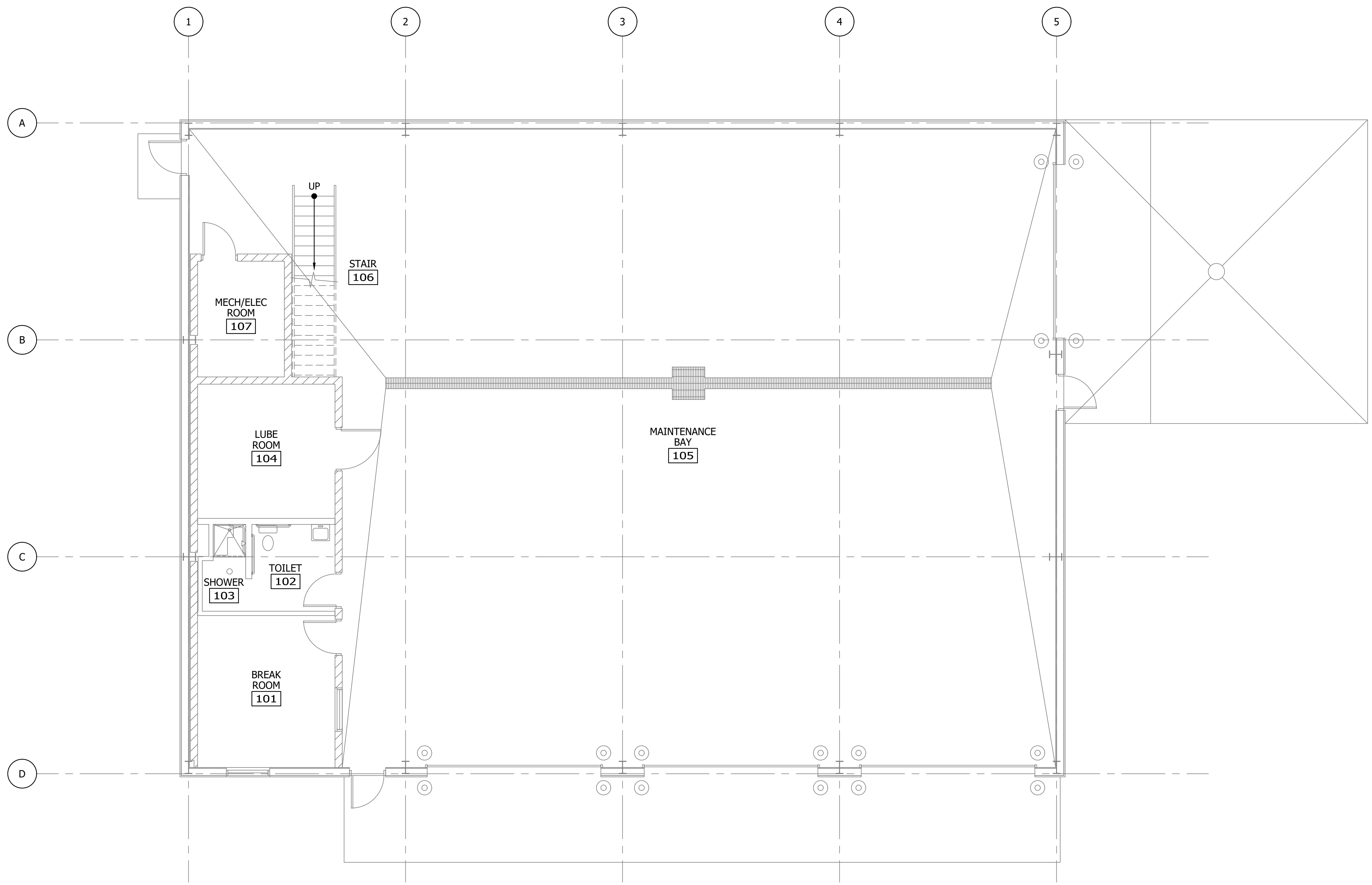
Xrefs: 193707141-XB1NA, 193707141-BOR



1 BUILDING B POWER PLAN

0 2'-8" 5'-4" 10'-8"

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Minneapolis, MN 55402
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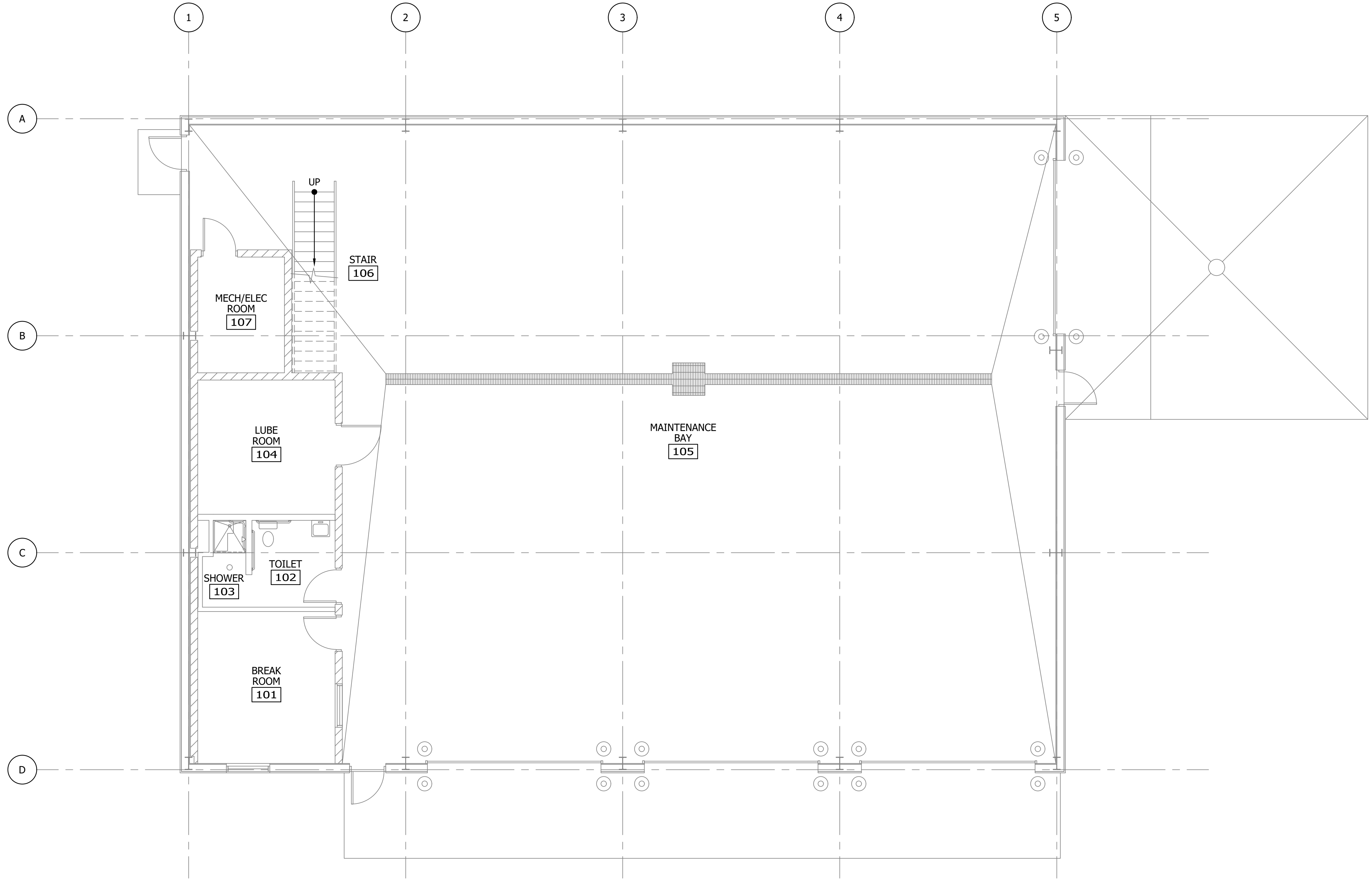
DATE: JUNE 24, 2022
LIC. NO. 9354-005

C. REISS COAL COMPANY, SUPERIOR, WISCONSIN
C. REISS COAL DOCK RENOVATION
MAINTENANCE BUILDING
BUILDING B POWER PLAN

NO	REVISION	DATE

SURVEY	
DRAWN	GM
DESIGNED	MTF
CHECKED	
APPROVED	
PROJ. NO.	192707141

SHEET NUMBER
EB301



1 BUILDING B SYSTEMS PLAN

0 2'-8" 5'-4" 10'-8"

Stantec
733 Marquette Avenue, Suite 1000
Minneapolis, MN 55402
www.stantec.com

DATE: JUNE 24, 2022 LIC. NO. 9354-005

C. REISS COAL COMPANY, SUPERIOR, WISCONSIN

C. REISS COAL DOCK RENOVATION
MAINTENANCE BUILDING
BUILDING B SYSTEMS PLAN

NO	REVISION	DATE

SURVEY	
DRAWN	GM
DESIGNED	MTF
CHECKED	
APPROVED	
PROJ. NO.	192707141

SHEET NUMBER
EB401

Plot Date: 07/12/2022 - 8:06am
Drawing name: V:\1937\active\193707141\05_report_deliv\drawings_design\cad_fig\193707141-EB401.dwg
Xrefs:, 193707141-XB1NA, 193707141-BDR

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Minneapolis, MN 55402
www.stantec.com

DATE: JUNE 24, 2022 LIC. NO.

C. REISS COAL COMPANY, SUPERIOR, WISCONSIN

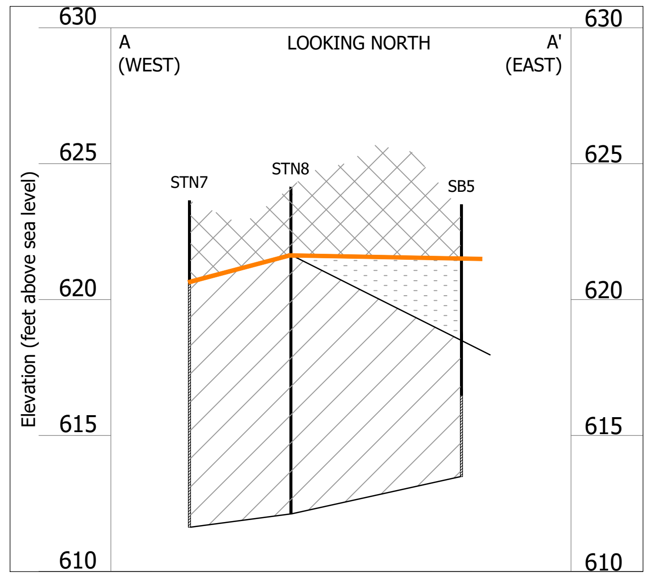
C. REISS COAL DOCK RENOVATION
ELECTRICAL
SCHEDULES

NO	REVISION	DATE

SURVEY	
DRAWN	GM
DESIGNED	MTF
CHECKED	MTF
APPROVED	MTF
PROJ. NO.	193707141

SHEET NUMBER
E801

Plot Date: 07/12/2022 - 8:06am
Drawing name: V:\1937\active\193707141\05_report_deliv\drawings_design\cad_fig\193707141-E801.dwg
Xrefs:, 193707141-BDR



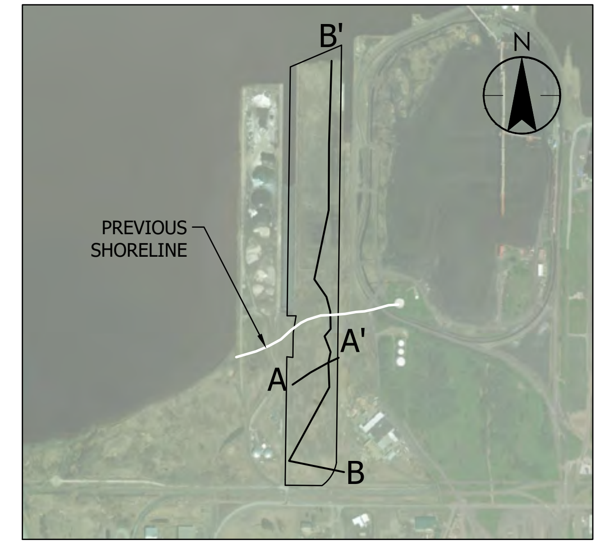


Figure No.
4 - Cross Sections

Title
Generalized Geologic Cross Sections

Client/Project
C. Reiss Company, LLC
C. Reiss Dock
Site Investigation Report

Project Location
T49N, R14W, S09, S16
C. of Superior,
Douglas Co., WI

193707141
Prepared by AJR on 2022-07-08
Technical Review by WMC on 2022-07-08
Independent Review by BSL on 2020-07-08

Legend
SB# Soil Boring (Stantec December 2021)
STN# Soil Boring (Stantec May 2022)

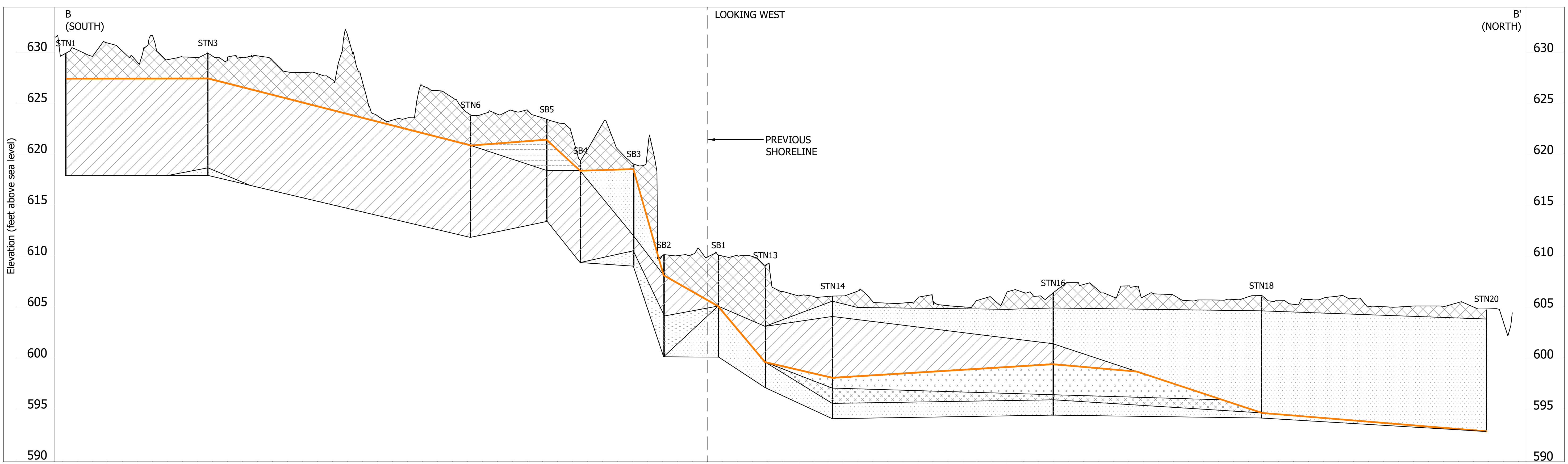
0 170 340
HORIZONTAL

0 5' 10'
VERTICAL

Black Fill
Clay
Sand
Clayey Silt
Silty Sand
Silt

Apparent Fill/Native Interface

Stantec



State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN1

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/5/2022	5/5/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN1			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 308,474 N, 142,804 E S /Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ____ ° ____ ' ______ "
Long ____ ° ____ ' ______ "
Local Grid Location ☐ N ☐ E; Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-0.25	48 30			ROOTED TOPSOIL, red-brown, moist, clayey, trace black fill pieces, no odor.				0.1						
0.25-2.5			1 2	SILTY CLAY, red-brown clay with dark brown silt, wet, soft, elastic, roots and black fill pieces (<5%) present, no odor.				0.1						STN1 0.25-2.5 PAH, RCRA
2.5-4.5			3 4	CLAY, red-brown, moist, saturated @ 7.5', medium-stiff to medium-soft, plastic, no odor.	CH			0.1						
4.5-6.5	48 48		5 6					0.2						STN1 4.5-6.5 PAH, RCRA
6.5-8.5			7 8					0.1						
8.5-10	48 48		9 10					0.3						
10-12			11 12					0.6						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN10			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 309,842 N, 142,483 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ____ ° ____ ' ______ "
Long ____ ° ____ ' ______ "
Local Grid Location: ☐ N ☐ E; Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-2.25	48 24		0	ROOTED TOPSOIL, black, moist, trace coal pieces, no odor.				0.1						STN10 0-2.25 PAH, RCRA
			1	SAND, buff, moist, rounded, coarse, spherical, semi-lithified, no odor.										
			2	BRICK, yellow, dry, pulverized, no odor.										
2.25-4				BRICK, red, dry, pulverized, no odor.				0.0						
				FILL, black, dry, granular, fine, no odor.										
			3	CONCRETE, beige/rose, dry, pulverized, no odor.										
4-6	48 9		4	POOR RECOVERY, likely concrete above.				0.0						
6-8			6	SANDY CLAY, red-brown, moist, soft, trace black fill pieces, no odor.				0.0						
8-9.5	48 30		8	CLAYEY SAND, red-brown, saturated @ 9.5', no odor.	SC			0.0						STN10 8-9.5 PAH, RCRA
9.5-12			9.5					0.0						
			10	SILT, red-brown, saturated, no odor.	ML									
			11	SAND, red-brown, saturated, medium, uniform, no odor.	SP									
			12		ML									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number STN10 Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				SILT, red-brown, saturated, no odor.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN11

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN11			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 309,910 N, 142,625 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ____° ____' ______"
Long ____° ____' ______"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-2	48 24		0	ROOTED TOPSOIL, black, moist, black fill and yellow brick pieces present (10%), no odor.				0.0						STN11 0-2 PAH, RCRA
			1	FILL, black, moist, granular, fine, trace yellow brick pieces, no odor.										
2-4			2	SAND, dark brown, moist, medium, trace black fill pieces, gravels (~15%) rounded, 1/8-1/2", no odor.				0.0						
			3	CLAY, red-brown, moist, medium-stiff, plastic, no odor.	CH									
4-6	48 39		4					0.0						
6-8			6	SAND, red-brown, moist, medium, uniform, no odor.	SP			0.0						
			7	SILT, light red-brown, moist, fine, no odor.	ML									
8-10.5	48 39		8	SAND, red-brown, moist, fine, uniform, no odor.	SP			0.0						
			9	SAND, red-brown, moist, medium, uniform, no odor.	SP									
10.5-12			10.5	SILTY CLAY, red-brown, wet, some elasticity, no odor.	CL-ML			0.0						STN11 10.5-12 PAH, RCRA
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN12

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN12			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 310,044 N, 142,505 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ____° ____' ______"
Long ____° ____' ______"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-0.5	48 24			ROOTED TOPSOIL & BRICK, black, moist, brick pieces (~40%) are yellow, trace coal pieces, no odor.				0.3						
0.5-1.5			1					0.1						
1.5-3.5			2	SAND & GRAVEL, beige, moist, well-graded, gravels (~50%) are angular, 1/8-1", no odor.				0.0						
			3	CLAY, red-brown, moist, medium-stiff, plastic, black fill pieces (~10%) present, no odor.										
3.5-4.5	48 27		4	FILL, black, moist, granular, lustrous, no odor.				0.0						STN12 3.5-4.5 PAH, RCRA
4.5-6			5	CLAY, red-brown, moist, medium-stiff, plastic, no odor.				0.0						
6-8	48		6 7					0.0						
8-10	48 48		8 9		CH			0.0						STN12 8-10 PAH, RCRA
10-12			10 11 12					0.1						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name: C. Reiss Coal Dock			License/Permit/Monitoring Number: BRRTS # 02-16-589248		Boring Number: STN13
Boring Drilled By: Name of crew chief (first, last) and Firm: Scott Klumb, Soils & Engineering Services, Inc.			Date Drilling Started: 5/4/2022	Date Drilling Completed: 5/4/2022	Drilling Method: Geoprobe
WI Unique Well No.: STN13	DNR Well ID No.:	Common Well Name:	Final Static Water Level: Feet MSL	Surface Elevation: Feet MSL	Borehole Diameter: 2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 310,274 N, 142,732 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ° ' " Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-1	48 / 24		0	ROOTED TOPSOIL, black, moist, gravels (~10%) are subrounded, ~1/2"; fill pieces (~10%) are black and red (brick), no odor.				0.0						
1-2.5			1	BRICK, red, dry, pulverized, no odor.				0.0						
			1.5	BRICK, yellow, dry, pulverized, no odor.										
2.5-3.5			2.5	FILL, black, saturated @ 3.5' granular, medium-to-coarse, lustrous, no odor.				0.0						STN13 2.5-3.5 PAH, RCRA
3.5-6	48 / 24		3.5					0.0						
6-8			6	CLAY, red-brown, saturated, medium-soft, plastic, no odor.				0.0						
8-9.5	48 / 36		8					0.0						
9.5-12			9.5	SAND, red-brown, saturated, fine, uniform, no odor.	SP			0.0						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Whitney Cull
Firm: Stantec Consulting Services Inc. Tel: Fax:

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN14

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN14			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 310,459 N, 142,604 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-0.5	48 24			ROOTED TOPSOIL, black, saturated near surface (~0.1'), no odor.				0.0						STN14 0-2 PAH, RCRA
0.5-2			1	SAND, red-brown, saturated, medium, uniform, no odor.				0.0						
2-4			2	CLAY, red-brown, saturated, medium-soft, plastic, no odor. Silt seam 7-7.25'.				0.1						
4-6	48 36		4					0.2						
6-8			6					0.2						
8-9	48 36		8	SILTY SAND, brown, saturated, fine, no odor.	SM			0.4						
9-10.5			9	SILT, brown, saturated, no odor.	ML			0.4						
10.5-12			10.5	SAND, red-brown, saturated, fine, no odor.	SP			0.3						
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN15

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN15			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 310,840 N, 142,464 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-1	48 30		0	GRAVELLY ROOTED TOPSOIL, dark brown, wet, gravels (~30%) are subrounded, ~1/2", no odor.				0.0						STN15 0-1 PAH, RCRA
1-2			1	CONCRETE, beige, dry, pulverized, no odor.				0.0						
2-2.25			2	SAND, beige, moist, coarse, rounded, spherical, no odor.				0.0						
2.25-5				SAND, brown, saturated @ 1', medium, no odor.				0.0						
				FILL, black, granular, fine, no odor.										
	48 36		4	SAND, red-brown, saturated, medium, uniform, no odor.										
5-7.75			5					0.1						
7.75-8			7.75	WOOD CHIPS/PIECES, dark brown, saturated, organic odor.				2.5						
8-10.5	48 48		8	SAND, red-brown, saturated, medium, uniform, no odor.				0.4						
10.5-12			10.5	SAND, red-brown, saturated, coarse, subrounded, trace gravels ~1/8", no odor.				0.7						
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature *Whitney Cull* Firm Stantec Consulting Services Inc. Tel: Fax:

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN16

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN16			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 311,177 N, 142,755 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-1	48 24		0-1	FILL, black, wet, granular, fine, some organics (roots) present, faint HC odor.				0.7						STN16 0-1.5 PAH, RCRA, VOC
1-1.5			1-1.5	SAND, beige, wet, coarse, rounded, spherical, uniform, no odor.				0.7						
1.5-3.5			1.5-3.5	SAND, red-brown, saturated @ 1.5', medium, rounded, uniform, no odor.				19.7						
3.5-5	48 30		3.5-5	SAND, brown, saturated, fine, uniform, HC odor.				349.0						STN16 3.5-5 PAH, RCRA, VOC
5-7			5-7	CLAY, red-brown, saturated, medium-soft, plastic, HC odor with some black staining present.				96.3						
7-10	48 30		7-10	SILTY SAND, brown, saturated, trace organices (wood pieces, roots), faint HC odor.	SM			8.3						
10-10.5			10-10.5	SILT, brown, saturated, organic odor.	ML			6.0						
10.5-12			10.5-12	SAND, brown, saturated, medium-to-fine, no odor.	SP			6.0						

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Signature: Whitney Cull
Firm: Stantec Consulting Services Inc.
Tel:
Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN17

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN17			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 311,555 N, 142,473 E S/C/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location: ☐ N ☐ E; Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-1.25	48 24		0	ROOTED TOPSOIL, dark brown, moist, no odor.				0.0						STN17 0-1.25 PAH, RCRA
1.25-3.5			1	SAND & GRAVEL, beige/rose, moist, trace black fill pieces, gravels (~50%) are angular, 1/8-1", no odor.				0.1						
			2	SAND, red-brown, saturated @ 1.25', medium, rounded, uniform, no odor.										
3.5-4			3.5	SILTY CLAY, dark brown, saturated, soft, some wood pieces present, no odor.				0.9						
4-8	48 0		4	NO RECOVERY. Per driller, very soft material, may be same as above.				-						
8-10	48 24		8	SAND, red-brown, saturated, medium-to-coarse, some small organics (wood pieces) ~8', no odor.				0.1						
10-12			10					0.1						
			12											

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Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

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SOIL BORING LOG INFORMATION

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Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN18

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN18			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 311,871 N, 142,758 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ___° ___' ___" Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-1.5	48 24		0-1.5	FILL, black, wet, granular, fine, small coal pieces (~10%) present, no odor.				0.1						STN18 0-1.5 PAH, RCRA
1.5-3.5			1.5-11.5	SAND, red-brown, saturated @ 1.5', medium, rounded, uniform, no odor. Seam of organic material (wood/roots) 8.5-8.75'.				0.0						
3.5-5.5	48 36							0.1						
5.5-7.5								0.4						
7.5-9.5	48 30							0.1						
9.5-11.5								0.2						
11.5-12			11.5-12	SAND, brown, saturated, fine, some	SP			0.8						

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Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A

Boring Number STN18 Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				organics (wood pieces, roots), no odor.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN19

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN19			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 312,198 N, 142,480 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W

Lat ____° ____' ______"
Long ____° ____' ______"

Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
0-1	48 30			ROOTED TOPSOIL, brown, dry, no odor. SANDY GRAVEL, beige/rose, dry, trace coal pieces, gravels (~75%) are subangular, 1/8-1", no odor.				0.0						STN19 0-1 PAH, RCRA
1-3			1	FILL, black and dark brown, moist, granular, fine, no odor.				0.0						
			2	SAND, red-brown, saturated @ 1', medium, rounded, uniform, no odor.										
3-5			3					0.0						
	48 48		4											
5-7			5					0.0						
			6											
7-9			7					0.0						
	48 48		8											
9-11.5			9					0.2						
			10											
			11											
11.5-12.5			12		SM			0.0						

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Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number STN19 Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
12.5-14	48 45		13	SILTY SAND, dark brown, saturated, organics (roots, wood pieces) present, no odor. *(continued)*	SM			0.1						
14-16			14 15 16	SAND, brown, saturated, medium-to-coarse, rounded, trace roots present, no odor.	SP			0.0						

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN2

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/5/2022	5/5/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN2			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 308,787 N, 142,712 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ____° ____' ______"
Long ____° ____' ______"
Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-2.5	48 18		0–0.5	ROOTED TOPSOIL, brown, moist, no odor.				0.7						STN2 0-2.5 PAH, RCRA, VOC; FD1 VOC
			0.5–2.3	SANDY GRAVEL, beige gravels with brown sand matrix, moist, well-graded, gravels (~60%) are subrounded, 1/8-1", no odor.										
2.5-4			2.3–3.4	FILL, dark brown clayey silt matrix with black fill/coal pieces (~15%), moist, no odor.				0.3						
4-6	48 48		3.4–12	CLAY, red-brown, moist, saturated @ 7', medium-stiff, plastic, no odor.	CH			0.2						STN2 4-6 PAH, RCRA
6-8								0.3						
8-10	48 48							0.3						
10-12								0.4						

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Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

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Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN20

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN20			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 312,620 N, 142,780 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W

Lat ____° ____' ______"
Long ____° ____' ______"

Local Grid Location
Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-1	48 24		0	ROOTED TOPSOIL, dark brown, moist, trace coal pieces, no odor.				0.0						STN20 0-1 PAH, RCRA
1-3			1	SAND, red-brown, saturated @ 3', medium, rounded, uniform, no odor.				0.0						STN20 1-3 PAH, RCRA
			2											
3-5			3					0.0						
	48 36		4											
5-7			5					0.0						
			6											
7-9			7					0.0						
	48 48		8											
9-12			9					0.1						
			10											
			11											
			12											

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Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

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SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN3

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/5/2022	5/5/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN3			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 308,569 N, 142,341 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ° ' "
Long ° ' "
Local Grid Location
Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-0.25 0.25-2.5	48 24		0–0.25	ROOTED TOPSOIL, dark brown, moist, no odor.				0.0 0.1						STN3 0.25-2.5 PAH, RCRA
			0.25–1.25	SAND & GRAVEL, beige, wet, well-graded, gravels (~50%) are subrounded, 1/8-1", no odor.	GW									
			1.25–2.5	SAND, brown, wet, medium-to-fine, trace gravels, no odor.	SP									
2.5-4			2.5–8.5	CLAY, red-brown, moist, saturated @ 7', medium-stiff, plastic, no odor.	CH			0.1						STN3 2.5-4 PAH, RCRA
4-6	48 48							0.1						
6-8								0.1						
8-9.5	48 48							0.3						
			8.5–9.5	SANDY CLAY, brown, saturated, gravels (~20%) are subangular, 1/8-1/2". Thin peat horizon ~9.5', trace roots, faint organic odor.	SW-SC									
9.5-11.25			9.5–11.25	CLAY, red-brown, saturated, medium-stiff, plastic, no odor.	CH			0.1						
11.25-12			11.25–12	SAND, red-brown, saturated, medium, rounded, uniform, no odor.	SP			0.1						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

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SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN4

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/5/2022	5/5/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN4			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 308,896 N, 142,560 E S /Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ____ ° ____ ' ______ "
Long ____ ° ____ ' ______ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-0.5	48 18			GRAVELLY ROOTED TOPSOIL, dark brown, moist, trace black/brick fill pieces, gravels (~40%) are subrounded, ~1/2", no odor.				0.0						
0.5-2.5			1 2	FILL, black, moist, granular with brick (red) and coal pieces, no odor.				0.0						STN4 0.5-2.5 PAH, RCRA
2.5-4			3	SILTY CLAY, light red-brown, moist, lean, no odor.	CL-ML			0.1						
4-6	48 48		4 5	CLAY, red-brown, moist, saturated @ 7', medium-stiff, plastic, no odor.				0.0						STN4 4-6 PAH, RCRA
6-8			6 7					0.0						
8-10	48 48		8 9		CH			0.1						
10-12			10 11 12					0.0						

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Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

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SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN5

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/5/2022	5/5/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN5			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 309,201 N, 142,465 E S /Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-0.5	48 18			ROOTED TOPSOIL, black, moist, soft, trace black fill pieces, no odor.				0.0						
0.5-2			1	FILL, black, moist, saturated @ 5', granular, fine 0-4', coarse 4-12', red and yellow brick pieces (~30%) present 11-12'; no odor.				0.1						
2-4			2					0.1						STN5 2-4 PAH, RCRA
4-6	48 18		4					0.1						
6-8			6					0.0						
8-10	48 24		8					0.1						
10-12			10					0.1						
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN6

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN6			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 309,336 N, 142,761 E S/©/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ____° ____' ______"
Long ____° ____' ______"
Local Grid Location
Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample: Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-2	48 21		0	ROOTED TOPSOIL, black, wet, no odor.				0.0						STN6 0-2 PAH, RCRA
			0.5–2	FILL, black, wet, granular, medium-to-coarse, some roots and coal pieces present, no odor.										
2-3			2	CLAYEY SILT, dark brown/black, wet, black fill pieces present (~10%), no odor.				0.0						
3-4			3	CLAY, red-brown, moist, saturated @ 11', plastic, medium-stiff, no odor.				0.0						
4-6	48 36		4					0.0						
6-8			6					0.0						
			7		CH									
8-10	48 48		8					0.0						STN6 8-10 PAH, RCRA
10-12			10					0.0						
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Whitney Cull
Firm Stantec Consulting Services Inc. Tel: Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN7

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/5/2022	5/5/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN7			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 309,417 N, 142,461 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-0.75	48 36			ROOTED TOPSOIL, black, moist, trace black fill pieces, no odor.				0.0						
0.75-1.5			1	CONCRETE, beige/rose, dry, pulverized, no odor.				0.0						
1.5-3			2	GRAVELLY TOPSOIL, black, moist, trace black fill pieces, gravels (~20%) are rounded, 1/4-1/2", no odor.				0.0						STN7 1.5-3 PAH, RCRA
3-4			3	FILL, black, moist, granular, some lustrous pieces present, no odor.				0.0						
4-6	48 48		4	CLAY, red-brown, moist, saturated @ 11', plastic, medium-stiff, no odor.				0.0						STN7 4-6 PAH, RCRA
			5											
6-8			6					0.0						
			7		CH									
8-10	48 48		8					0.1						
			9											
10-12			10					0.1						
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Whitney Cull	Stantec Consulting Services Inc.	Tel: Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN8

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN8			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 309,490 N, 142,565 E S/Ⓒ/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ____ ° ____ ' ______ "
Long ____ ° ____ ' ______ "
Local Grid Location: ☐ N ☐ E; Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-2.5	48 24		0	ROOTED TOPSOIL, black, moist, trace black fill pieces, no odor.				0.0						STN8 0-2.5 PAH, RCRA
			1	FILL, black, wet, granular, medium-to-fine, some roots present, no odor.										
2.5-4			2.5	CLAY, red-brown, moist, saturated @ 11', lean, medium-stiff, no odor. Silt lens ~8-8.25'.	CL			0.0						
4-6	48 48		4					0.0						
6-8			6					0.0						STN8 6-8 PAH, RCRA
8-10	48 48		8					0.0						
10-12			10					0.0						
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Whitney Cull | Firm Stantec Consulting Services Inc. | Tel: | Fax:

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
C. Reiss Coal Dock	BRRTS # 02-16-589248	STN9

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Scott Klumb Soils & Engineering Services, Inc.	5/4/2022	5/4/2022	Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
STN9			Feet MSL	Feet MSL	2.3 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 309,649 N, 142,458 E S/C/N
NE 1/4 of NE 1/4 of Section 16, T 49 N, R 14 W
Lat ____° ____' ______"
Long ____° ____' ______"
Local Grid Location
Feet ☐ N ☐ S
Feet ☐ E ☐ W

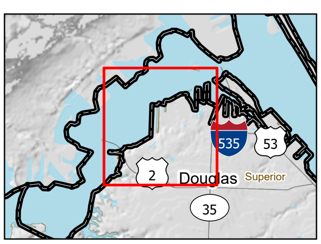
Facility ID	County	County Code	Civil Town/City/ or Village
	Douglas	16	Superior

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-1	48 36		0–1	ROOTED TOPSOIL, dark brown, moist, trace black fill pieces, no odor.				0.0						
1-2.5			1–1.5	BRICK, yellow, dry, pulverized, no odor.				0.0						STN9 1-2.5 PAH, RCRA
			1.5–2.5	FILL, black, moist, granular, some red-brown clay matrix, no odor.										
2.5-4.5			2.5–6.5	SILTY SAND, red-brown, moist, no odor. Clay seam ~4-4.25'.	SM			0.0						
4.5-6.5	48 36							0.0						STN9 4.5-6.5 PAH, RCRA
6.5-8			6.5–8	SAND, red-brown, moist, medium, uniform, no odor.	SP			0.0						
8-9	48 42		8–9	SAND, red-brown, wet, fine, uniform, no odor.	SP			0.0						
9-12			9–12	SAND, red-brown, saturated @ 9', medium, uniform, no odor.	SP			0.0						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Whitney Cull

Firm Stantec Consulting Services Inc.
Tel:
Fax:



Legend
- Project Boundary
- 1/2 Mile Project Buffer
- Previously Recorded Historic Structure
- Previously Recorded Archaeological Site
- Previous Survey

0 700 1,400 Feet

(At original document size of 8.5x11)
1:16,800

N

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, WDNR, WisDOT, WHPD
3. Orthophotography: ESRI World Imagery

Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

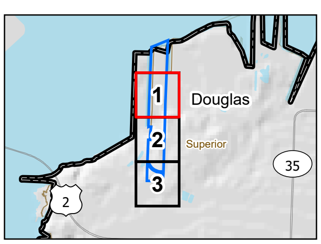
Prepared by AJS on 2022-05-09
TR by JS on 2022-05-09
IR by BB on 2022-05-19

Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Cultural Resources Report

Figure No.
2

Title
Wisconsin Historic Preservation Database (WHPD) File Search

V:\1937\Active\193707141\03_data\gis_cad\gis\mxds\Cultural_Report\C_Reiss_Superior_Dock_Project\C_Reiss_Superior_Dock_Project.aprx Revised: 2022-05-19 By: aswaim



Legend

Project Boundary

Photo Location

0 100 200 Feet

(At original document size of 8.5x11)
1:2,400

N

Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

Prepared by CA on 2022-07-28
TR by JS on 2022-07-28
IR by XX on 2022-XX-XX

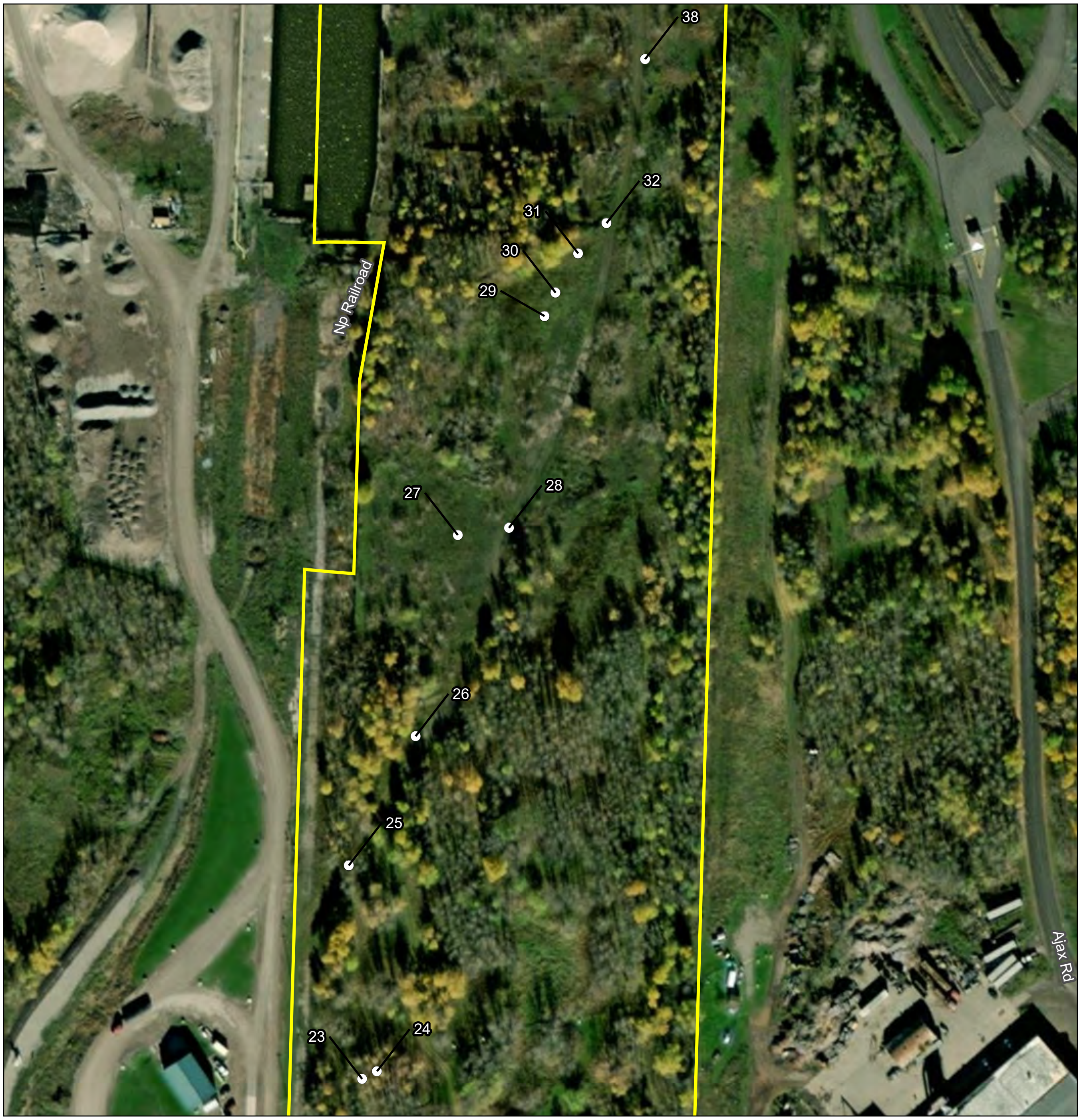
Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Cultural Resources Report

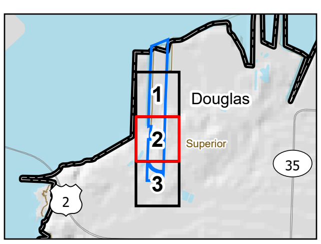
Figure No.
3

Title
Visual Inspection Photos

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, WDNR, WisDOT
3. Orthophotography: ESRI World Imagery

V:\1937\Active\193707141\03_data\gis_cad\gis\mxds\Cultural_Report\C_Reiss_Superior_Dock_Project\C_Reiss_Superior_Dock_Project.aprx Revised: 2022-07-29 By: carmer





Legend
Project Boundary
Photo Location

0 100 200 Feet
(At original document size of 8.5x11)
1:2,400

N

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, WDNR, WisDOT
3. Orthophotography: ESRI World Imagery

Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

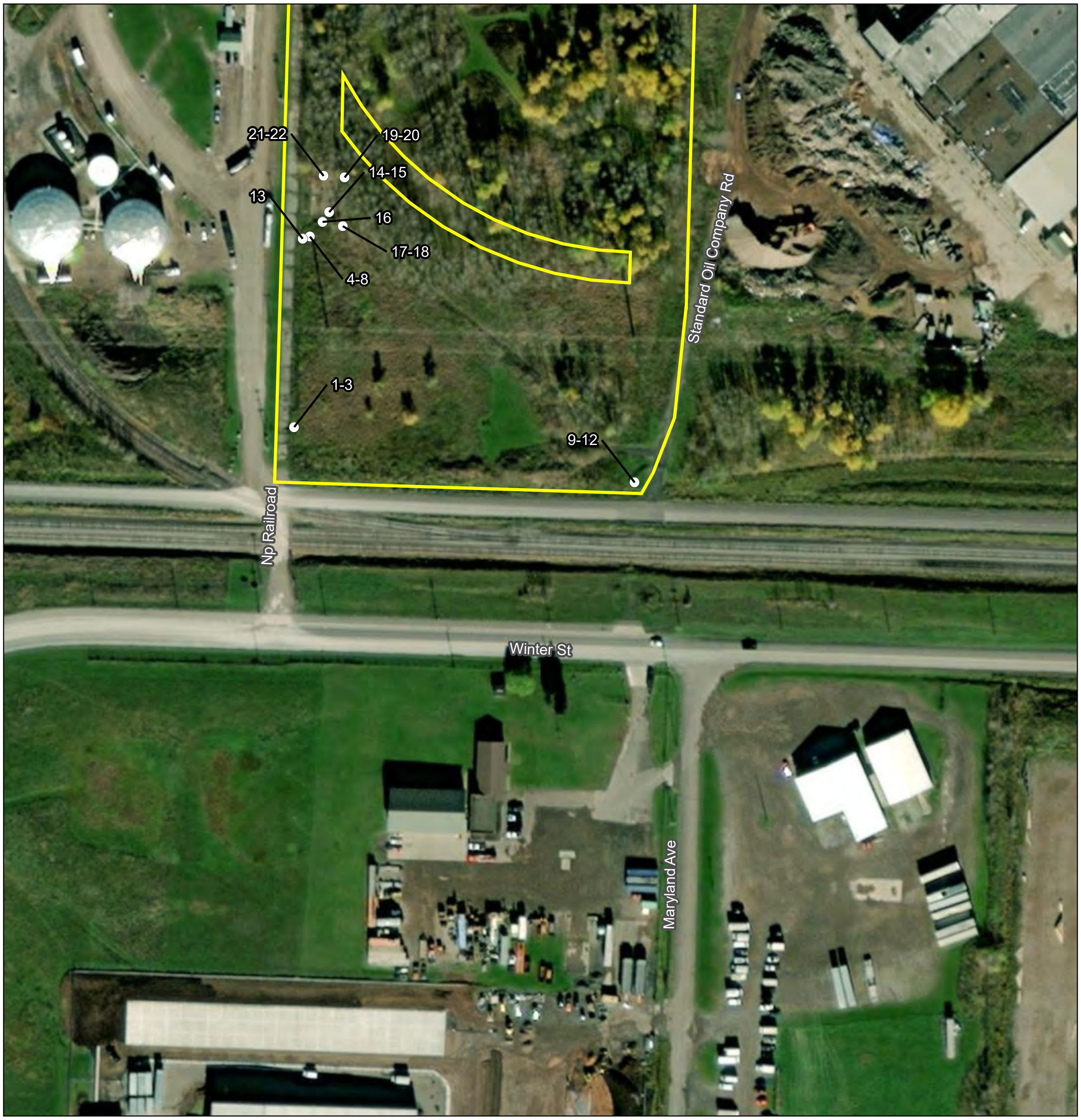
Prepared by CA on 2022-07-28
TR by JS on 2022-07-28
IR by XX on 2022-XX-XX

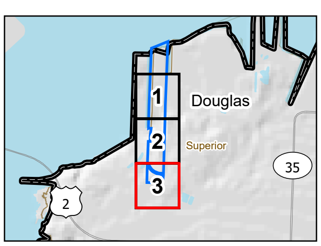
Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Cultural Resources Report

Figure No.
3

Title
Visual Inspection Photos

V:\1937\Active\193707141\03_data\gis_cad\gis\mxds\Cultural_Report\C_Reiss_Superior_Dock_Project\C_Reiss_Superior_Dock_Project.aprx Revised: 2022-07-29 By: carmer





Legend

Project Boundary

Photo Location

0 100 200 Feet

(At original document size of 8.5x11)
1:2,400

N

Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

Prepared by CA on 2022-07-28
TR by JS on 2022-07-28
IR by XX on 2022-XX-XX

Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Cultural Resources Report

Figure No.
3

Title
Visual Inspection Photos

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, WDNR, WisDOT
3. Orthophotography: ESRI World Imagery

V:\1937\Active\193707141\03_data\gis_cad\gis\mxds\Cultural_Report\C_Reiss_Superior_Dock_Project\C_Reiss_Superior_Dock_Project.aprx Revised: 2022-07-29 By: carmer

Figure 4: AHI # 17590, facing south

Figure 5: AHI # 17591, facing northeast

Figure 6: AHI # 17595, facing southeast

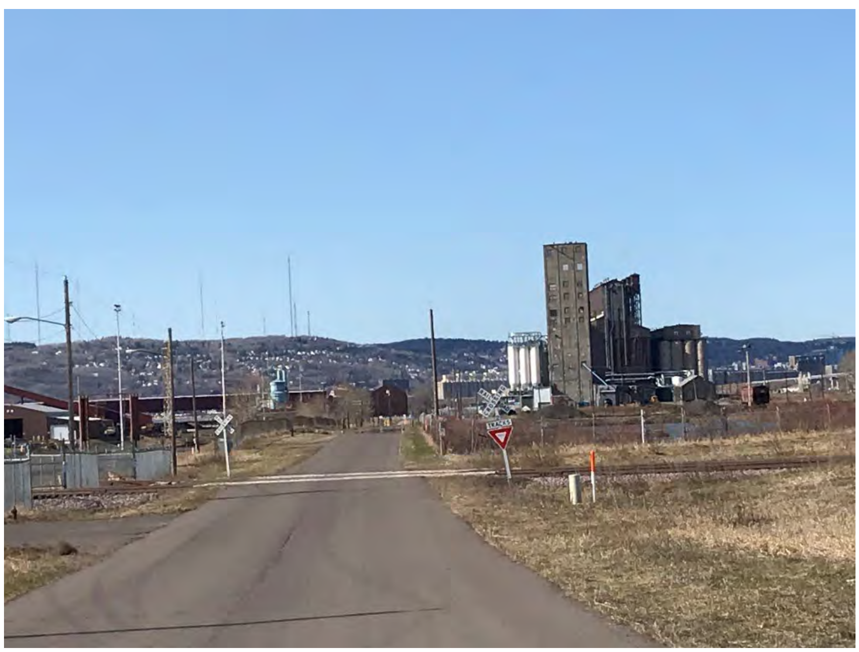


Figure 7: AHI #17783, facing north

Figure 8: AHI #17883, facing west

Figure 9: AHI #17895, facing north

Figure 10: AHI # 17896, facing southeast

Photograph 1. Overview of Project Area, as seen from Southwest corner of property. Note wetland vegetation. Looking Northeast.

Photograph 2. Overview of Project Area, as seen from Southeast corner of property. Note berms. Looking West.

Project No. 193707141

Figure 11a: Project Area Photographs, 22 June 2022

Port of Superior Infrastructure Improvements Project
C. Reiss Company
City of Superior, Douglas County, Wisconsin

Cardno now Stantec

6130 Cottonwood Dr., Fitchburg, WI 53719 USA
Phone (+1) 608-661-2955 Fax (+1) 608-661-2961
www.cardno.com

Photograph 3. Concrete foundation located along West edge of Project Area, as seen from South end of foundation. Looking North.

Photograph 4. Architectural debris located at ground surface just East of Southeast corner of concrete foundation. Facing East/Down.

Figure 11b: Project Area Photographs, 22 June 2022

Port of Superior Infrastructure Improvements Project
C. Reiss Company
City of Superior, Douglas County, Wisconsin

Project No. 193707141

Cardno now Stantec

6130 Cottonwood Dr., Fitchburg, WI 53719 USA
Phone (+1) 608-661-2955 Fax (+1) 608-661-2961
www.cardno.com

Photograph 5. Ferrous Metal Drum situated in woods East of gravel access lane. Looking Southeast.

Photograph 6. Metal gate and concrete blocks located along gravel access lane. Looking Southeast.

Figure 11c: Project Area Photographs, 22 June 2022

Port of Superior Infrastructure Improvements Project
C. Reiss Company
City of Superior, Douglas County, Wisconsin

Cardno now Stantec

6130 Cottonwood Dr., Fitchburg, WI 53719 USA
Phone (+1) 608-661-2955 Fax (+1) 608-661-2961
www.cardno.com

Project No. 193707141

Date Created: 7/25/2022 Date Revised: 7/25/2022 File Path: R:\Projects\15\15Y\15Y004M00_ATC Continued\13_Cardinal Hickory Creek_Cultural Resources\GIS\ArcGIS Online\CHC 2022 Map Update.aprx GIS Analyst: melanie.kohls
Data Sources:

Photograph 7. Concrete structural ruins situated north of gravel access lane. Looking North.

Photograph 8. Concrete structural rubble situated west of gravel access lane. Looking North.

Figure 11d: Project Area Photographs, 22 June 2022

Port of Superior Infrastructure Improvements Project
C. Reiss Company
City of Superior, Douglas County, Wisconsin

Project No. 193707141

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Phone (+1) 608-661-2955 Fax (+1) 608-661-2961
www.cardno.com

Photograph 9. Southern east-west oriented concrete wall.
Looking North-Northwest.

Photograph 10. Northern east-west oriented concrete wall.
Looking North-Northwest.

Figure 11e: Project Area Photographs, 22 June 2022

Port of Superior Infrastructure Improvements Project
C. Reiss Company
City of Superior, Douglas County, Wisconsin

Project No. 193707141

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Photograph 11. Remnant north-south oriented transportation track near east-west oriented concrete walls. Looking North.

Figure 11f: Project Area Photographs, 22 June 2022

Port of Superior Infrastructure Improvements Project
C. Reiss Company
City of Superior, Douglas County, Wisconsin

Project No. 193707141

Cardno now Stantec
6130 Cottonwood Dr., Fitchburg, WI 53719 USA
Phone (+1) 608-661-2955 Fax (+1) 608-661-2961
www.cardno.com

Date Created: 7/25/2022 Date Revised: 7/25/2022 File Path: R:\Projects\15\15Y\15Y004M00_ATC Continued\13_Cardinal Hickory Creek_Cultural Resources\GIS\ArcGIS Online\CHC 2022 Map Update.aprx GIS Analyst: melanie.kohls
Data Sources:

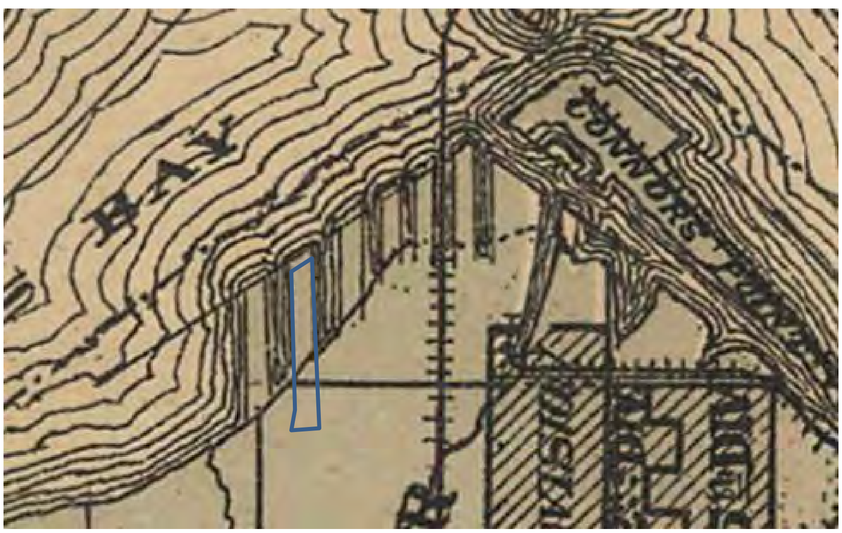
Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

Historical Maps and Aerial Images

Historical maps and aerial images reviewed as part of the desktop review are provided below. In all cases, the approximate Project Area boundary is depicted as a blue rectangle.

Historical Maps

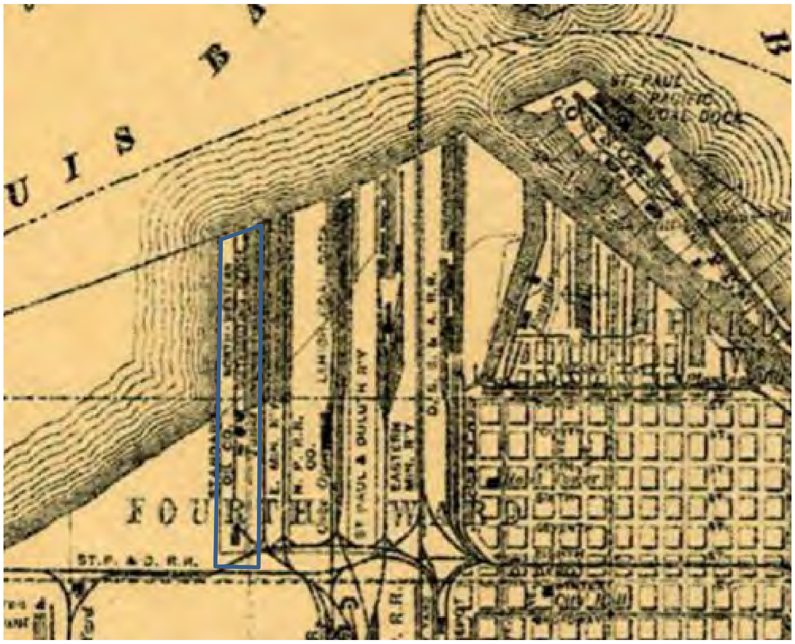
1871 Sectional Map (Mendel 1871)



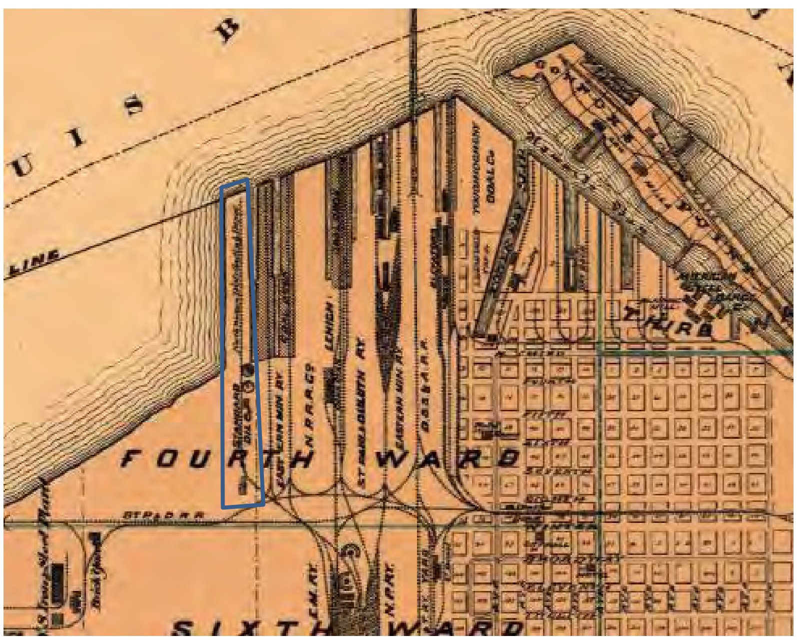
1889 Douglas County Map (Largo 1889)

August 5, 2022
Leslie Eisenberg

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin



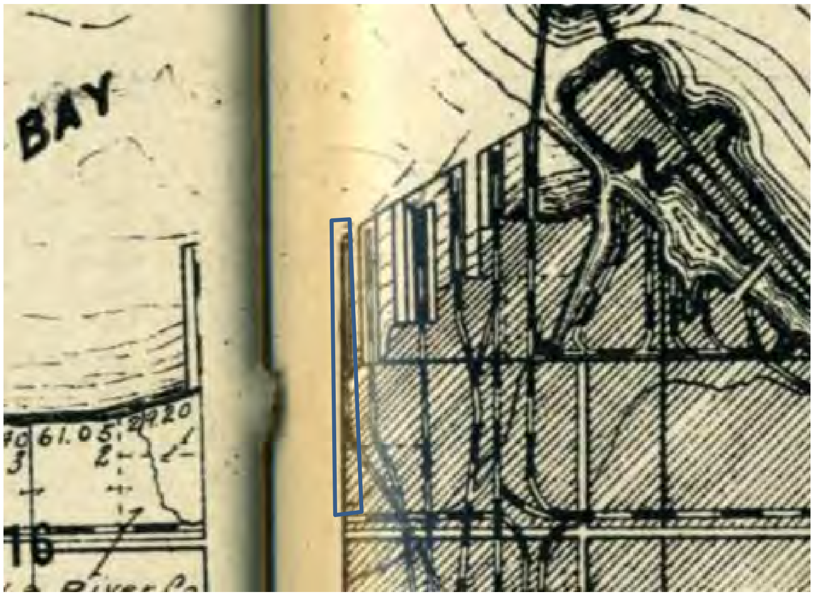
1890 Map of the City of Superior (Posen Printing House 1890)



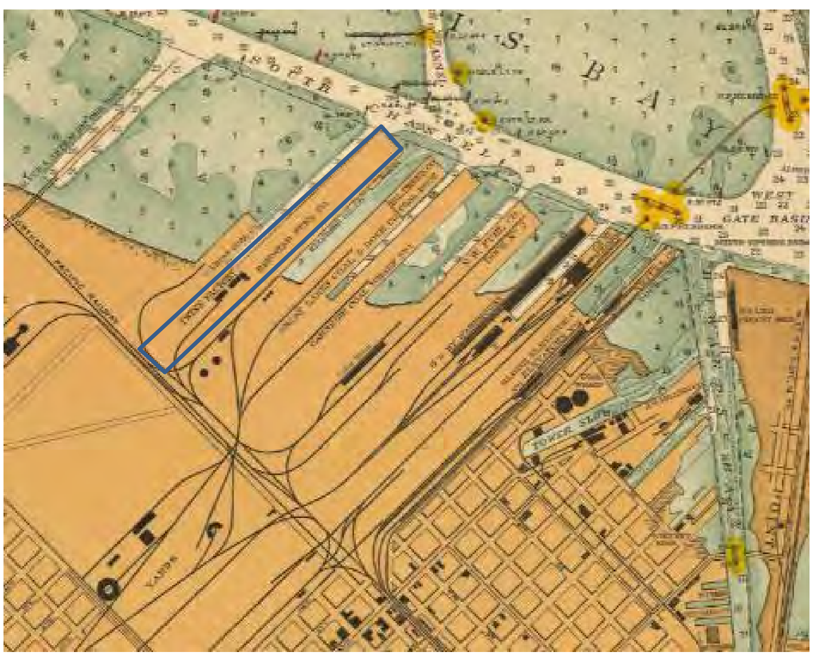
1891 Map of the City of Superior (Klovdahl 1891)

August 5, 2022
Leslie Eisenberg

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

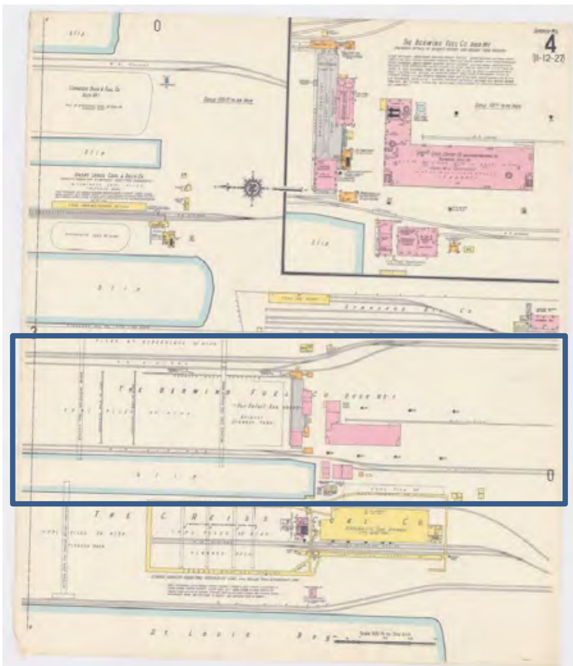


1906 Map of Douglas County (Doenitz 1906)

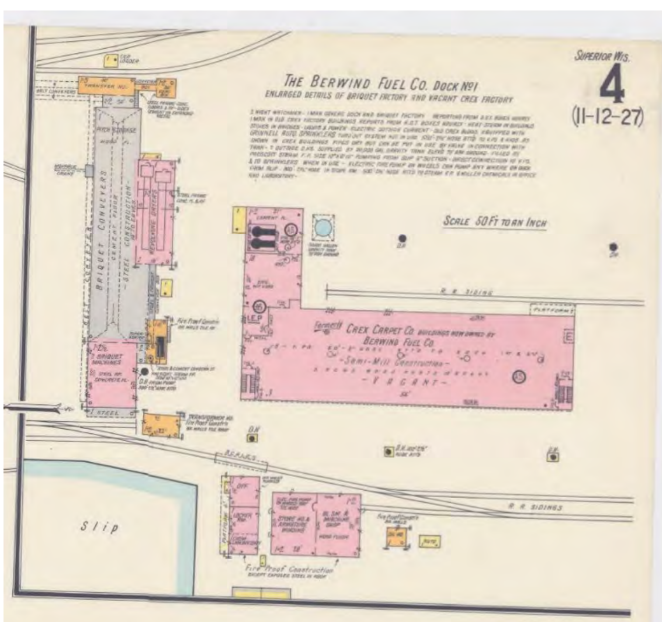

1914 Chart of Harbor at Duluth, Minnesota and Superior, Wisconsin (US War Department Corps of Engineers 1914)

August 5, 2022
Leslie Eisenberg

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin



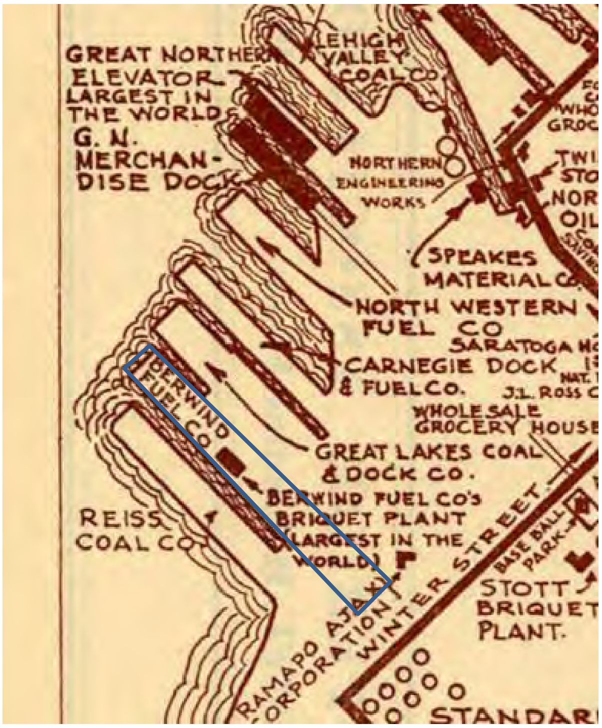
1914 Fire Insurance Map (Sanborn 1914)



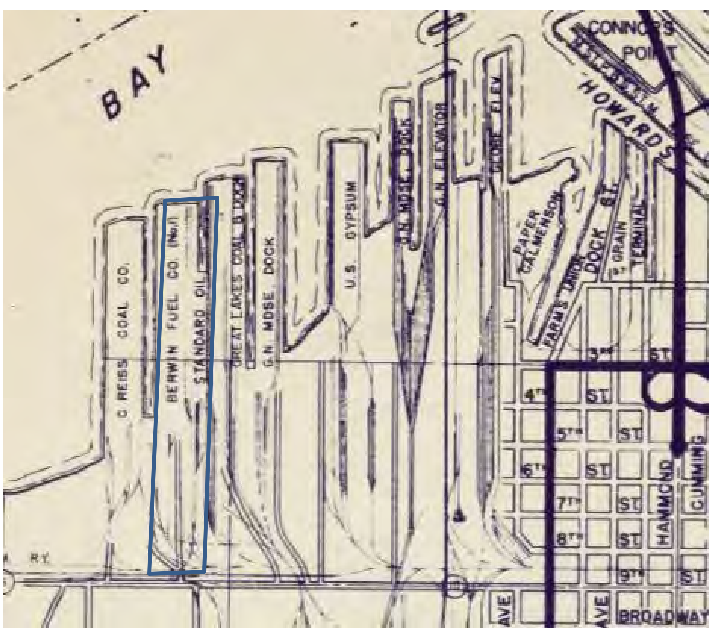
Enlarged View of Structures of Berwind Fuel Company Dock (Sanborn 1914)

August 5, 2022
Leslie Eisenberg

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin



1934 Industrial Areas of Superior, Wisconsin (Superior Association of Commerce 1934)



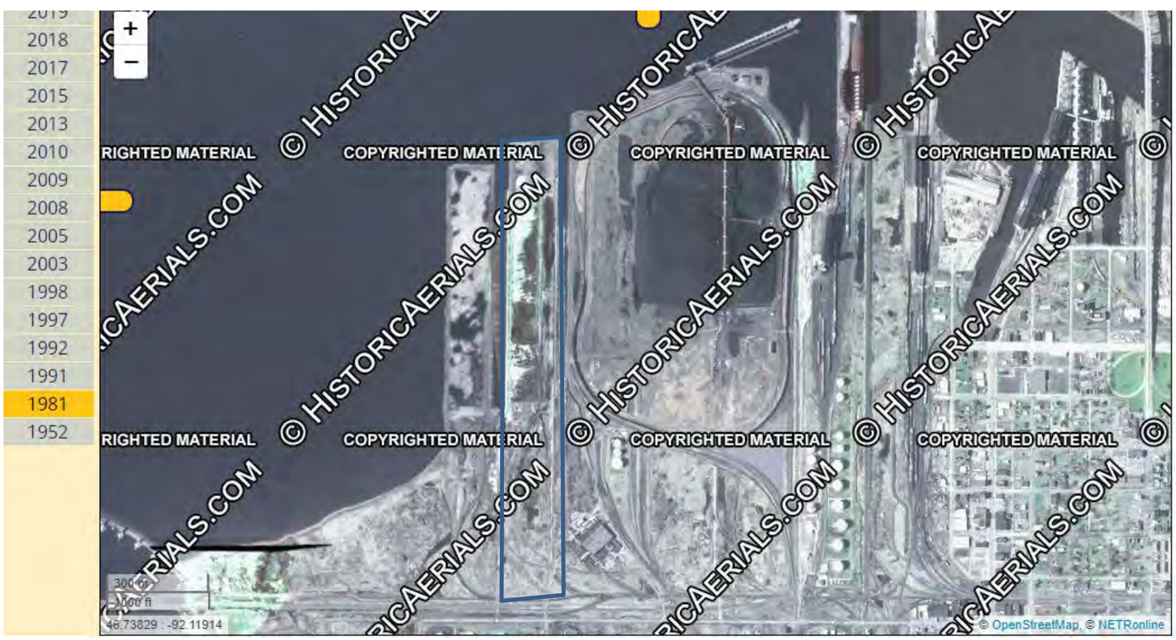
1966 Map of the City of Superior (Unknown 1966)

August 5, 2022
Leslie Eisenberg

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

Aerial Images

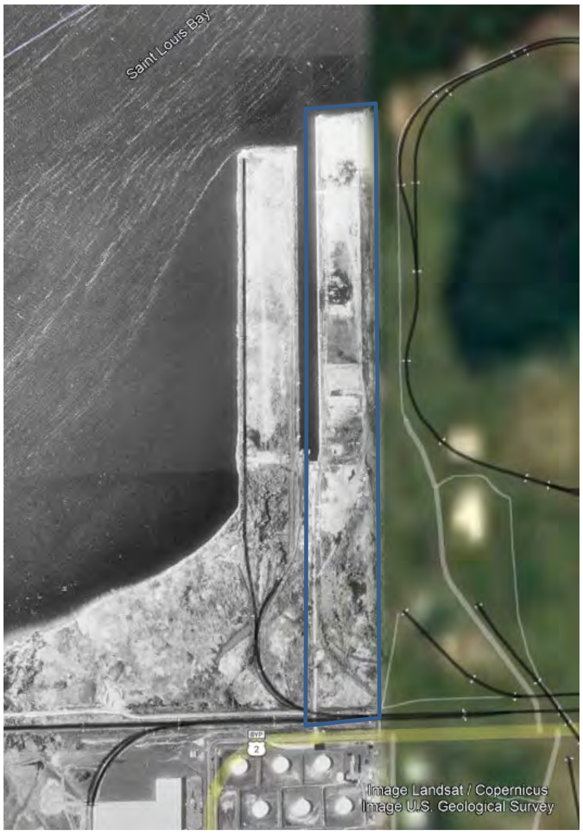
1952 aerial image (NETROnline 2022)



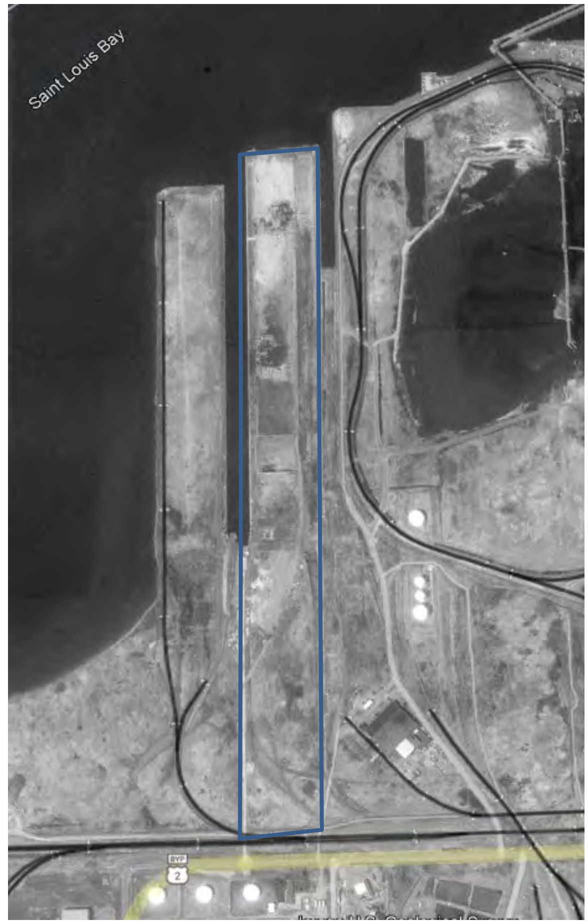
1981 aerial image (NETEROnline 2022)

August 5, 2022
Leslie Eisenberg

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin



1991 aerial image (Google Earth 2022)



1992 aerial image (Google Earth 2022)

August 5, 2022
Leslie Eisenberg

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

2003 aerial image (Google Earth 2022)

2008 aerial image (Google Earth 2022)

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

2013 aerial image (Google Earth 2022)

2020 aerial image (Google Earth 2022)

Stantec Consulting Services Inc.
322 East Michigan Street, Suite 200 Milwaukee, WI 53202-5005

May 19, 2022
File: 193707141

Attention: Christian Zuidmulder
C. Reiss Company, LLC
111 West Mason Street
Green Bay, Wisconsin 54303

Dear Mr. Zuidmulder

Reference: Cultural Resources Literature Review for the C. Reiss Port of Superior Infrastructure Improvement Project, Superior, Douglas County, Wisconsin

CONFIDENTIAL – NOT FOR PUBLIC DISCLOSURE

C. Reiss Company LLC (C. Reiss) and the City of Superior proposes the C. Reiss, Port of Superior, Infrastructure Improvements Project (the Project) in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin (Figure 1). The Project seeks to reactivate the existing C. Reiss Dock on Saint Louis Bay. The Project consists of approximately 53 acres of private land (Project Area) north of Winter Street and is the second dock east of US Highway 2. Rehabilitation will consist of reconstruction of a dockwall, dredging along the exterior of the dock, construction of a shop/office building, repair and extension of 7,060 linear feet of rail track and five switches and the installation of various loading and weighing equipment.

The Project plans to utilize federal funds from the U.S. Department of Transportation (DOT) Maritime Administration (MARAD) and constitutes an undertaking under Section 106 of the National Historic Preservation Act, as amended (54 U.S.C. § 300101 et seq.). At C. Reiss' request, Stantec Consulting Services Inc. (Stantec) conducted a cultural resources Literature Review of the Project's Area of Potential Effects (APE) to support review under Section 106. The APE for direct effects for archaeological resources and historic structures is defined as those areas where subsurface impacts can be anticipated during construction of the Project and includes the Project Area. The APE for visual effects on historical structures was defined as a 0.5-mile radius (buffer) surrounding the Project Area.

Wisconsin Historic Preservation Database Review

On April 1, 2022, Stantec performed a cultural resources review of the Wisconsin Historic Preservation Database (WHPD) for recorded historic structures, archaeological sites, cemeteries and burial sites, and other cultural resources within the Project Area and 0.5-mile buffer.

Previous Archaeological Surveys

No archaeological surveys have been conducted within the Project Area. Three previous archaeological surveys have been conducted within the 0.5-mile buffer (Table 1 and Figure 2). The surveys were undertaken for projects consisting of a proposed bridge, a Wisconsin DOT field report, and an extension of a railroad line. No archaeological sites were identified as a result of these three surveys.

Table 1. Previous Archaeological Surveys within the 0.5-Mile Buffer.

Survey Number	Year	Distance from Project Area	Results/Sites Found
12-0908	1978	1,800 feet South	No sites found within the Project Area; no further investigations recommended
79-0577	2012	1,900 feet South	No sites found within the Project Area; no further investigations recommended
94-0121	1994	2,100 feet East	No sites found within the Project Area; no further investigations recommended

Archaeological Sites

No archaeological sites have been recorded within the Project Area. One archaeological site has been recorded within the 0.5-mile buffer (Figure 2). Site DG-0111, is a shipwreck of a small vessel that exploded in 1938. The site is located approximately 1,000 feet east of the Project Area at the Standard Oil dock, Superior Harbor.

Cemeteries and Burial Sites

No recorded cemeteries or burial sites are located within the Project Area or the 0.5-mile buffer (Figure 2).

Historic Structures

There are no recorded historic structures within the Project Area. Twelve historic structures are recorded within the 0.5-mile buffer (Table 2 and Figure 2). These structures consist of three repair shops/roundhouses for railroad equipment, three warehouses, two industrial buildings, a water utility structure, a privy, a grain elevator, and a dock/pier. Five of the structures are associated with the Great Northern Railroad Yards, two with Galena Signal Oil Company, one with Ajax Forge Company, one with Stott Briquet, and one with Great Northern Elevators. When date of construction is known, these structures date between 1899 and 1975. The Wisconsin State Historic Preservation Office (SHPO) has determined that four of these structures, Wisconsin Architecture and History Inventory Number (AHI#) 17590, AHI# 17594, AHI# 17595, and AHI# 17783 are potentially eligible for listing in the National Register of Historic Places (NRHP). However, review of available aerial imagery indicates that all but AHI # 17783 have been demolished. The SHPO has also determined that the remaining eight structures are not eligible for listing in the NRHP.

Direct effects to these historic structures would not occur based on their distance from the Project Area. Indirect effects to the extant buildings would be confined to visual effects. Structures AHI# 17591, AHI# 17593, AHI# 17596, AHI# 17896, AHI# 17892 and AHI# 17893 are screened from the Project Area by vegetation and modern industrial buildings. Structures AHI# 17783 and AHI# 17883 are screened from the Project Area by the Midwest Energy Resources facilities which include a large area of coal storage. Structure AHI# 17895 is visible from the Project Area, however the proposed Project is in keeping with the industrial character of the surrounding area and would not create a negative visual impact to this structure.

Table 2. Recorded historic structures within the 0.5-Mile Buffer.

AHI Structure Number	Type of Structure	Year Built	Distance from APE	NRHP Status
17590	Repair shop/roundhouse--Demolished	1899	0.46 mile	Potentially Eligible
17591	Repair shop/roundhouse	1899	0.40 mile	Not Eligible
17593	Repair shop/roundhouse	1914	0.48 mile	Not Eligible
17594	Warehouse--Demolished	1899	0.48 mile	Potentially Eligible
17595	Water utility--Demolished	1899	0.41 mile	Potentially Eligible
17596	Privy--Demolished	1899	0.48 mile	Not Eligible
17783	Grain elevator	1900	0.50 mile	Potentially Eligible
17883	Dock/pier	1975	0.45 mile	Not Eligible
17892	Warehouse	1916	0.45 mile	Not Eligible
17893	Warehouse	1916	0.45 mile	Not Eligible
17895	Industrial building	1917	0.08 mile	Not Eligible
17896	Industrial building	1909	0.09 mile	Not Eligible

Note: Shaded cells denote structures within Project Area.

Historic Map and Atlas Review

The Atlas of Great Lakes Indian History (Tanner 1987) was reviewed for maps and land use of the Project Area prior to the historic period. Prehistoric groups hunted deer and moose along the shoreline of Lake Superior. In the Woodland Period between 1400 and 1700 AD the area was associated with the Algonquian people (Tanner 1987). Between 1641 and 1701 AD, during the Iroquois Wars, the area was occupied by the Cree. By 1768 the Ojibwa occupied the area and by 1810 two villages; Ford du Lac and Ft. St. Louis were located at the edge of Lake Superior near the Project Area (Tanner 1987). Between 1842 and 1872 the Project Area and the land surrounding Lake Superior was ceded to the United States. The Ojibwa lands was one of the last major cessions and occurred in 1863 (Tanner 1987). The Project Area does not retain any tribal lands today.

Historical plat and atlas maps were reviewed to provide greater detail on the nature of the Project Area. Historical maps depict the use of the Project Area as commercial docking and shipping. The original lake shoreline is depicted in a southwest to northeast orientation on the 1863 plat map. This shoreline was intact until approximately 1907 (Sigma 2019). The shoreline was then altered over the years by the construction of docks that were filled into the lake.

The first docks in this area of Superior were built in the mid-to-late 19th century and were first depicted on the 1889 map (Figure 4; Hendel 1871; Largo 1889). Around 1891 (Figure 6), the Standard Oil Co. built a narrow wharf along the eastern edge of the Project Area. The end of the wharf consisted of a 200 foot x 300 foot platform (Sigma 2019). The 1890 and 1891 historic maps (Posen Printing House 1890; Klovdahl 1891) depict the Eastern Minnesota and St. Paul and Duluth railyards south of the Project Area and several coal docks to the east of the Project Area (Figures 5 and 6). The 1891 maps also show the Northwestern Distribution Depot within the Project Area.

The 1906 map (Figure 7) continues to show the shipping docks (Doenitz 1906). In 1907, the Berwind Fuel Company filled the area to the west of the Standard Oil Co. wharf to form the present-day C. Reiss Coal Dock (Sigma 2019). The C. Reiss Coal Dock is first labeled on the dock to the west of the Project Area in the 1914 plat map (Figure 8). It is approximately half the size of the present-day dock. The Project Area is depicted as belonging to the Berwind Fuel Company at this time (U.S. War Department Corps of Engineers 1914).

By 1934, the dock to the west belonging to C. Reiss is depicted at its modern extent (Figure 9). The Project Area is still depicted as belonging to the Berwind Fuel Company as well as the Berwind Fuel Company's briquet plant, that is labeled the largest in the world (Superior Association of Commerce 1934). The Berwind briquet plant building was constructed at the base of the Project Area between 1892 and 1899. It was the site of either a charcoal plant or blast furnace for the York Co. from 1893 through 1895. It was then occupied by twine manufacturers between circa 1895 and 1912. In 1912, the Berwind Fuel Co. converted the building into a coal briquet plant, which at one point produced 3,300 tons of coal briquets per day (Sigma 2019). The briquet plant operated through circa 1965. The plant was demolished sometime between 1970 and 1975 (Sigma 2019). C. Reiss and the Berwind Fuel Company continued to occupy these docks until at least 1966 (Unknown 1966).

The 1954 Superior 7.5' US Geological Survey (USGS) topographic quadrangle (USGS 1954) depicts the docks with various buildings and rail lines running throughout the Project Area. Aerial photography shows that the Project Area was in use in 1952, however it fell into disuse sometime between 1981 and 1991. It continued to be unused between 1991 and the present day (NETROnline 2022).

The Project Area was used by the Standard Oil Co. and later by the Amoco Oil Co. to transfer petroleum products including kerosene and lubricant from 1891 through circa 1993. Oil was stored in aboveground storage tanks (ASTs) located to the south of the dock that were connected to an oil transfer building via pipeline and then to railcars. The oil transfer building ceased operations in the late 1950s and was later demolished (Sigma 2019).

The Project Area was used for open-air storage of up to 800,000 tons of coal from 1907 through sometime in the late 1960s. Dock occupants during this period included the Berwind Fuel Co. and later the C. Reiss Coal Co. The dock was then used by C. Reiss for the receipt of dry bulk goods from sometime between 1974 and 1987 through sometime after 1999 (Sigma 2019).

May 19, 2022
Christian Zuidmulder

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

Summary and Recommendations

Stantec conducted an initial cultural resources database review to identify cultural resources present within the Project Area. The results of the cultural resources database review indicate that no archaeological sites or historic structures are present within the Project Area.

One archaeological site and twelve historic structures are present within the 0.5-mile buffer. The archaeological site would not be impacted by the Project due to its distance from the Project. Three of the historic structures have been demolished. Direct impacts to the nine remaining structures would not occur based on their distance from the Project Area. Indirect (visual) impacts could occur to the nine remaining historic structures, but more modern structures are present between the Project and these structure and would provide some level of visual screening to reduce potential visual impacts. Additionally, the proposed Project would be in keeping with the surrounding industrial character of the area and would not result in an increased visual impact to these structures.

Based upon a review of the WHPD and historical maps and aerial images, the Project Area appears to have a low potential to contain prehistoric or historic properties eligible for listing in the NRHP. While the Project Area would have been utilized during the prehistoric period it is unlikely that significant prehistoric sites currently remain in the Project Area. The Project Area has been significantly altered by historical construction of the dock facility. Approximately the northern half of the Project Area was constructed into the lake in the early-1900s using imported fill material and analysis of modern aerial photography suggests that up to 65 percent of the APE is concrete. Industrial development within the Project Area caused significant disturbance to the southern portion of the Project Area. Continued operation and upgrades of the industrial facilities within the Project Area over time and subsequent abandonment and demolition has resulted in significant impacts to potential historical resources associated with the industrial use of the Project Area.

Therefore, Stantec recommends a finding of No Adverse Effects and further recommends that the Project be allowed to proceed as planned without additional cultural resources investigation.

Regards,

Stantec Consulting Services Inc.

Benjamin Banks, RPA
Archaeologist
Phone: 316-634-6218
benjamin.banks@stantec.com

Rebekah Gansemer
Archaeological Technician
rebekah.gansemer@stantec.com

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

Attachments: Figure 1. Project Location and Local Topography
Figure 2. Wisconsin Historic Preservation Division (WHPD) Database Review Results
Historical Maps and Aerial Images

References Cited

Doenitz, A.
1906 *Map of Douglas County, Wisconsin.* Van Valkenburgh Map & Litho. Co., Rockford, Illinois. Scale 1 1/8 inches to the mile. https://content.wisconsinhistory.org/digital/collection/maps/id/17510

Klovdahl, Simon
1891 *Map of the City of Superior, Douglas County, Wisconsin*. Simon Klovdahl, Unknown. Scale 4 inches to the mile. https://content.wisconsinhistory.org/digital/collection/maps/id/8195/rec/29

Largo, Charles
1889 *Map of Douglas County, Wisconsin.* Charles Lagro, Douglas County, Wisconsin. Scale 2/3 inches to the mile. https://content.wisconsinhistory.org/digital/collection/maps/id/1675/rec/5

Mendel, Ed
1871 *New Sectional Map of the Head of Lake Superior Comprising the Counties of Douglas, Bayfield, and Ashland, Wisconsin, and Parts of the Counties of St. Louis, Lake, Carlton, and Pine, Minnesota.* Ed Mendel, Chicago, Illinois. Scale Unknown. https://content.wisconsinhistory.org/digital/collection/maps/id/1169/rec/1

NETROnline
2022 *Historical Aerials*. Electronic document. https://www.netronline.com, accessed April 7, 2022.

Posen Printing House
1890 *Map of the City of Superior, Douglas County, Wisconsin.* Posen Printing House, Unknown. Scale Unknown. https://content.wisconsinhistory.org/digital/collection/maps/id/6157/rec/22

Superior Association of Commerce
1934 Twenty Five Miles of Industrial Tour Wholly within the City Limits of Superior. Superior Association of Commerce, Superior, Wisconsin. Unknown Scale. https://content.wisconsinhistory.org/digital/collection/maps/id/6162/rec/1

Sigma Group Inc. (Sigma)
2019 Historic Records Screening Report Winter Street North Task Area Superior, Wisconsin

Tanner, Helen Hornbeck.
1987 Atlas of Great Lakes Indian History. Oklahoma University Press, Norman, Oklahoma.

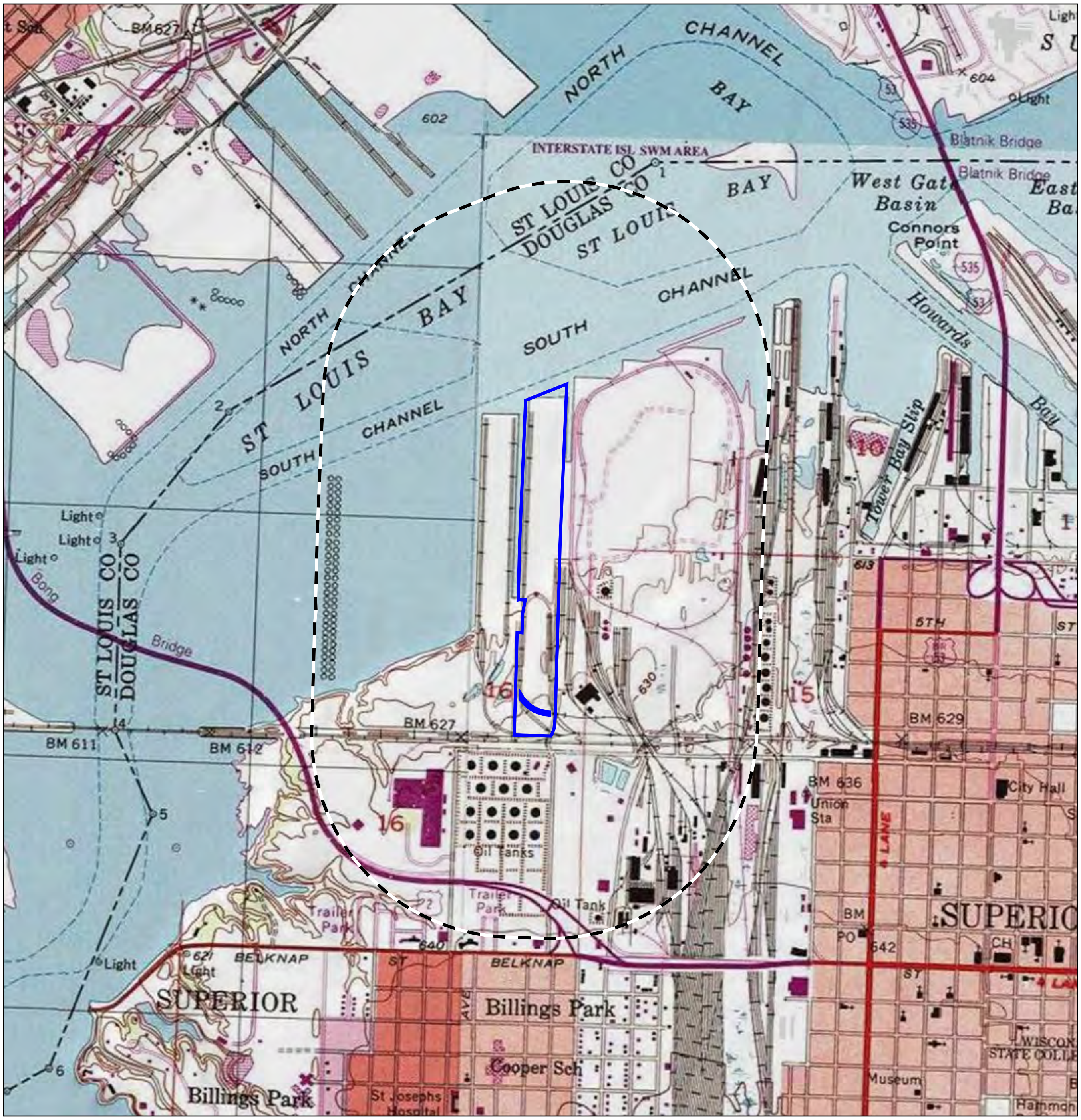
Unknown
1966 *Map of the City of Superior, Traveled Streets.* Unknown. Scale Unknown. https://content.wisconsinhistory.org/digital/collection/maps/id/16058/rec/104

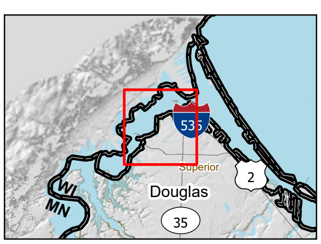
U.S. Geological Service (USGS)
1954 Superior, Wisconsin 7.5-minute quadrangle. Electronic document, https://apps.nationalmap.gov/downloader/#/

U.S. War Department Corps of Engineers
1914 *Chart of Harbor at Duluth, Minnesota and Superior, Wisconsin*. War Department Corps of Engineers, Washington, D.C., Scale Unknown. https://content.wisconsinhistory.org/digital/collection/maps/id/13194/rec/74

Wisconsin Historic Aerial Imagery Finder (WHAIF)
1938 Douglas County, Wisconsin. Scale 1:20,000. Electronic Document, https://search.library.wisc.edu/digital/AVEMVERW5A6NVV9C/full, accessed May 5, 2022.

Attachments





Legend

Project Boundary

1/2 Mile Project Buffer

0 1,000 2,000 Feet

(At original document size of 8.5x11)
1:24,000

N

Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

Prepared by AJS on 2022-05-09
TR by JS on 2022-05-09
IR by BB on 2022-05-19

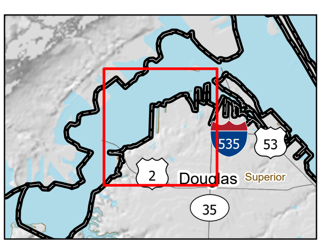
Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Cultural Resources Report

Figure No.
1

Title
Project Topography and Location

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, WDNR, WisDOT
3. Background: USGS 7.5' Topographic Quardangles

V:\1937\Active\193707141\03_data\gis_cad\gis\mxds\Cultural_Report\C_Reiss_Superior_Dock_Project\C_Reiss_Superior_Dock_Project.aprx Revised: 2022-05-19 By: aswaim



Legend

- Project Boundary
- 1/2 Mile Project Buffer
- Previously Recorded Historic Structure
- Previously Recorded Archaeological Site
- Previous Survey

0 700 1,400 Feet

(At original document size of 8.5x11)
1:16,800

N

Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

Prepared by AJS on 2022-05-09
TR by JS on 2022-05-09
IR by BB on 2022-05-19

Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Cultural Resources Report

Figure No.
2

Title
Wisconsin Historic Preservation Database (WHPD) File Search

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, WDNR, WisDOT, WHPD
3. Orthophotography: ESRI World Imagery

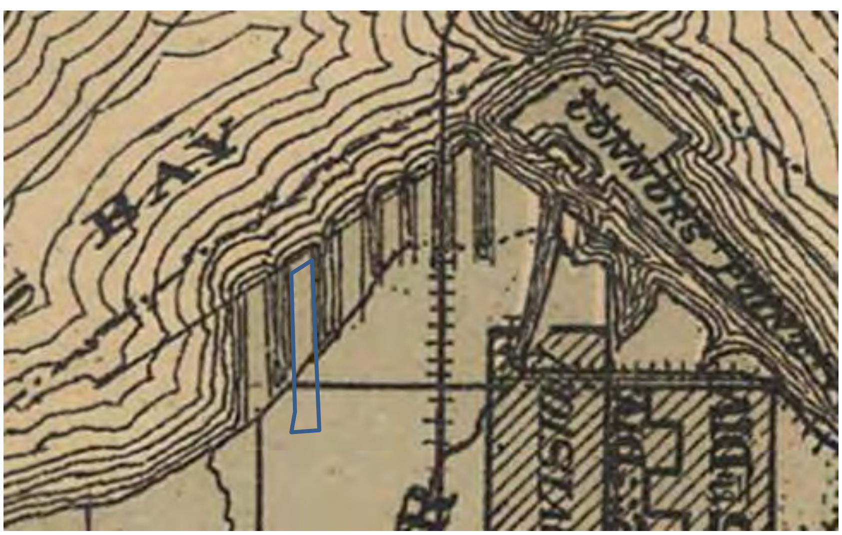
Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

Historical Maps and Aerial Images

Historical maps and aerial images reviewed as part of the desktop review are provided below. In all cases, the approximate Project Area boundary is depicted as a blue rectangle.

Historical Maps

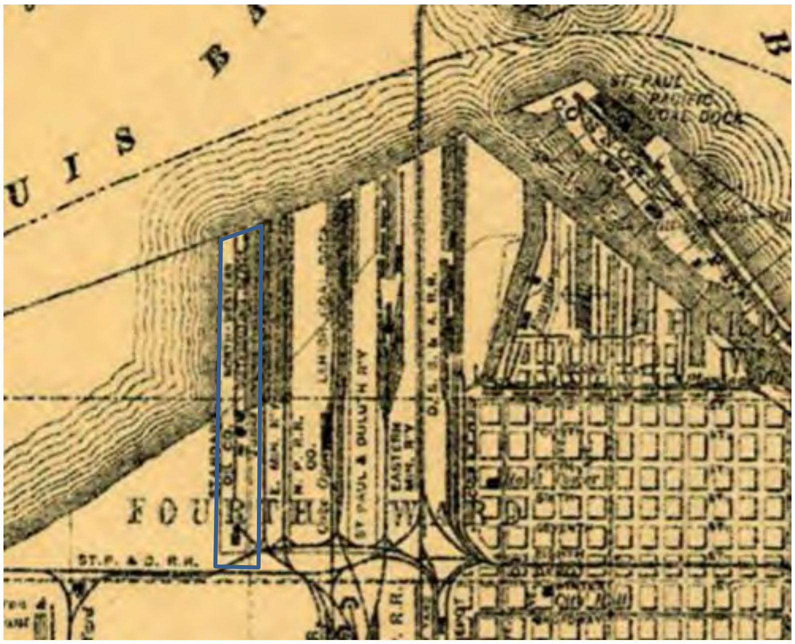
1871 Sectional Map (Mendel 1871)



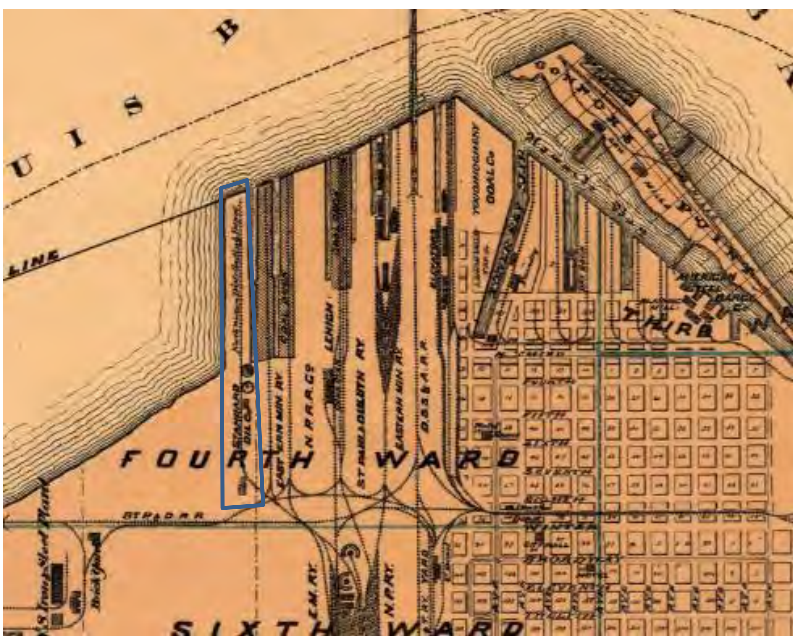
1889 Douglas County Map (Largo 1889)

May 19, 2022
Christian Zuidmulder

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin



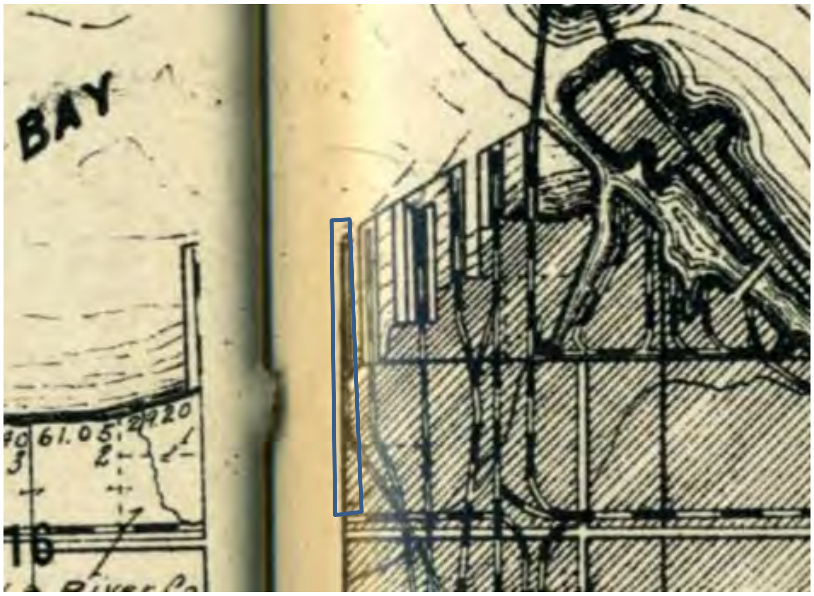
1890 Map of the City of Superior (Posen Printing House 1890)



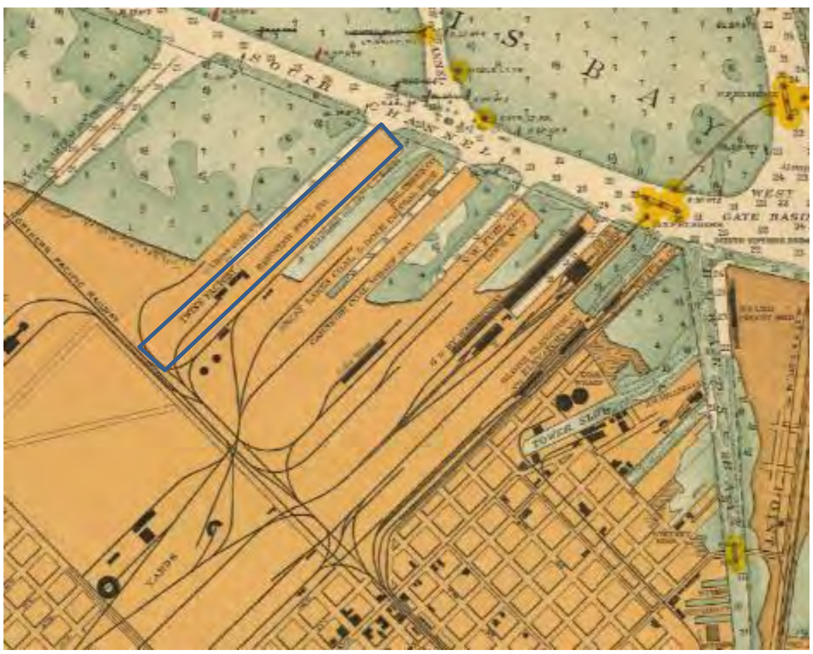
1891 Map of the City of Superior (Klovdahl 1891)

May 19, 2022
Christian Zuidmulder

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

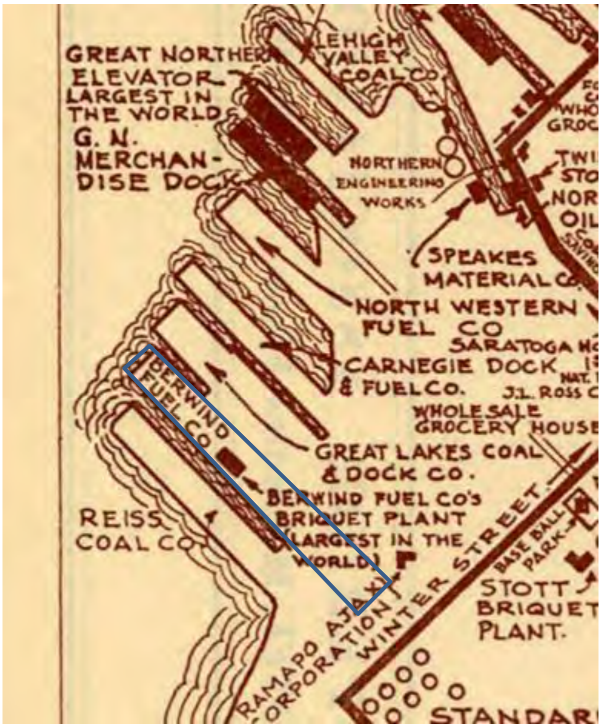


1906 Map of Douglas County (Doenitz 1906)

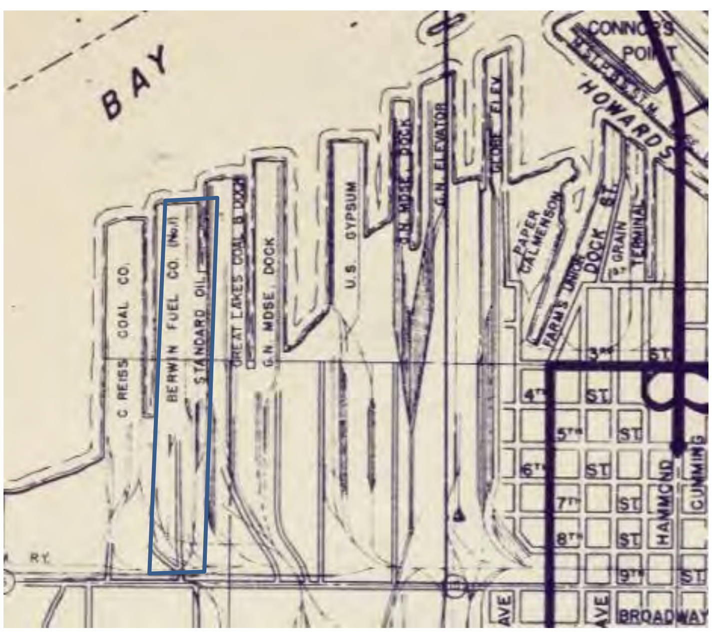

1914 Chart of Harbor at Duluth, Minnesota and Superior, Wisconsin
(U.S. War Department Corps of Engineers 1914)

May 19, 2022
Christian Zuidmulder

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin



1934 Industrial Areas of Superior, Wisconsin (Superior Association of Commerce 1934)



1966 Map of the City of Superior (Unknown 1966)

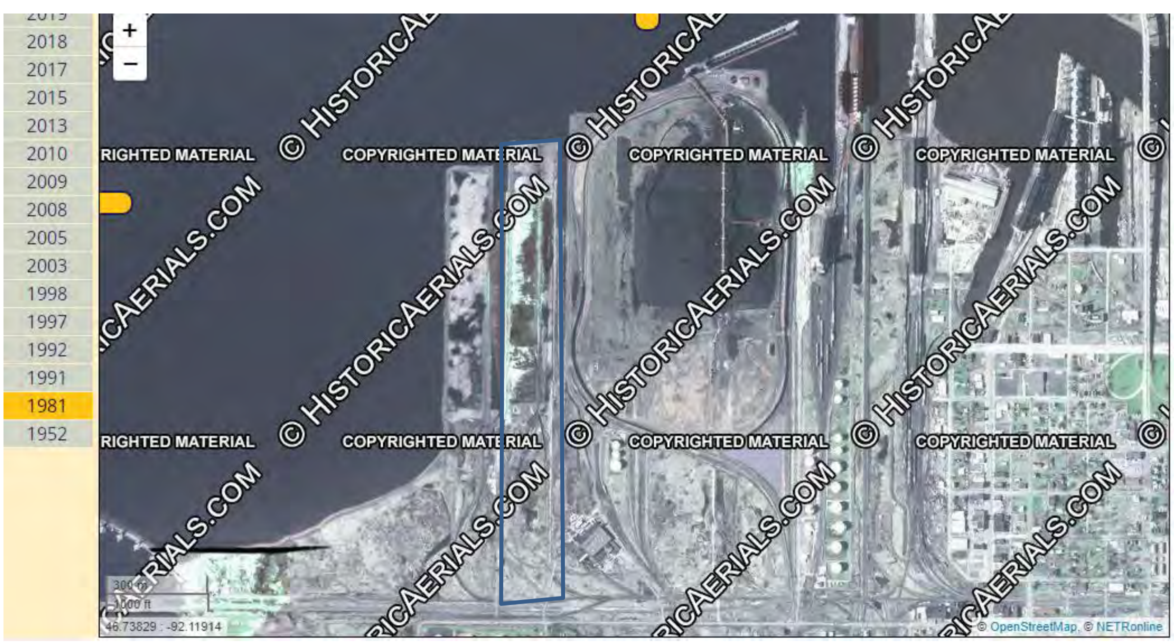
Design with community in mind

May 19, 2022
Christian Zuidmulder

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

Aerial Images

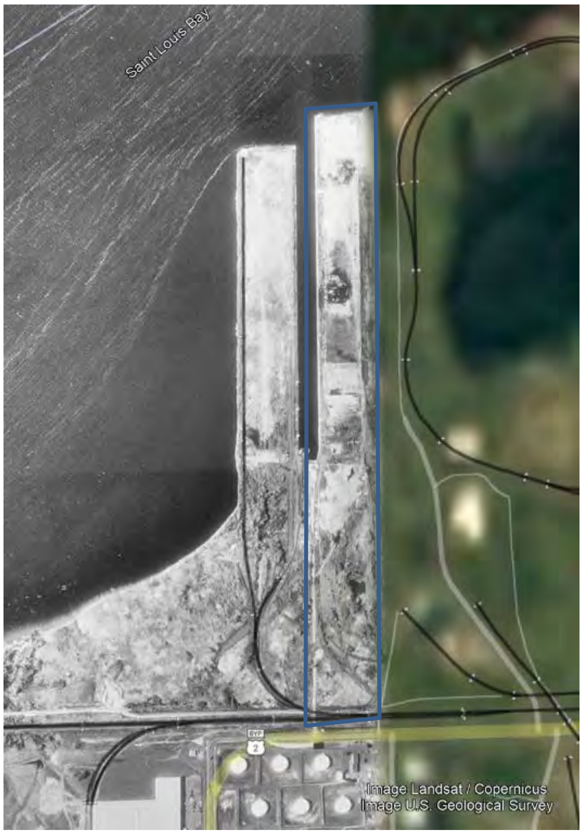
1952 aerial image (NETROnline 2022)



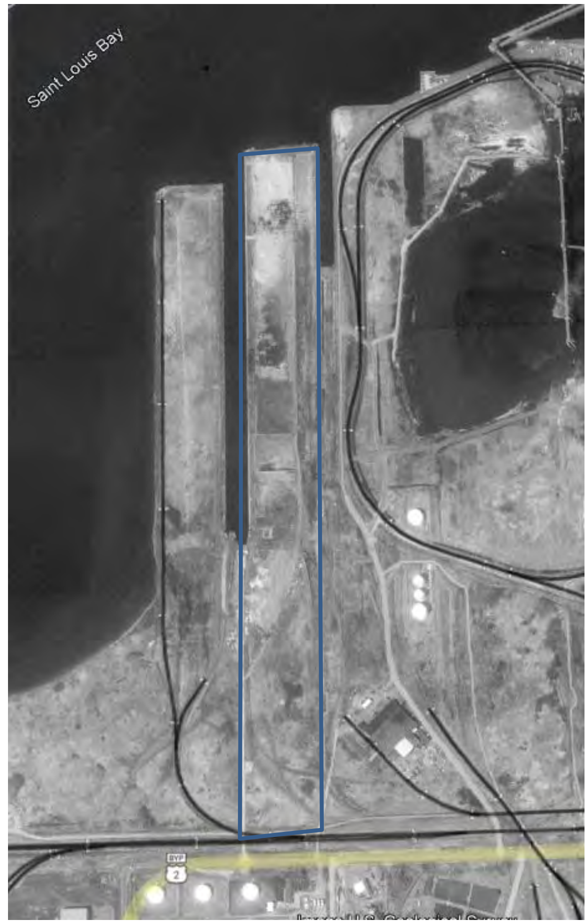
1981 aerial image (NETEROnline 2022)

May 19, 2022
Christian Zuidmulder

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin



1991 aerial image (Google Earth 2022)



1992 aerial image (Google Earth 2022)

May 19, 2022
Christian Zuidmulder

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

2003 aerial image (Google Earth 2022)

2008 aerial image (Google Earth 2022)

May 19, 2022
Christian Zuidmulder

Reference: Cultural Resource Database Review for C. Reiss Superior Dock, Superior, Douglas County, Wisconsin

2013 aerial image (Google Earth 2022)

2020 aerial image (Google Earth 2022)

APPENDIX H

SHPO

From: leslie.eisenberg@wisconsinhistory.org
To: Banks, Benjamin
Cc: william.m.sande@usace.army.mil
Subject: SHPO Review: 22-0991/DG - C. Reiss Port of Superior Infrastructure Improvement Project
Date: Friday, September 2, 2022 11:26:26 AM

Good morning, Mr. Banks,

I have completed my review of WHS #22-0991, C. Reiss Port of Superior Infrastructure Improvement Project and find that no eligible properties will be affected (i.e. none are present or there are historic properties present but the project will have no effect upon them). Please note, however, that the shipwreck, "Clarence," whose exact location is unknown, may be found during project activities. If dredging or end-wall construction, or any phase of this project encounters any evidence of this wreck (or any other unknown to us), work must stop immediately within 100-feet and you must contact me under Wisconsin Stat.44.47 and also under the Federal Abandoned Shipwreck Act for further guidance. If the wreck, or elements thereof, are discovered, an archaeological survey will be required.

If your plans change or cultural materials/human remains are found during the project, please halt all work and contact our office.

Please use this email as your official SHPO concurrence for the project. If you require a hard copy signed form, please contact me and I will provide you a signed copy as soon as possible.

Sincerely,

Leslie

Leslie Eisenberg
State Historic Preservation Office

Wisconsin Historical Society
816 State Street, Madison, WI 53706
608.264.6507
leslie.eisenberg@wisconsinhistory.org

Wisconsin Historical Society
Collecting, Preserving, and Sharing Stories Since 1846

U.S. Department
Of Transportation
Maritime
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL: compliance@wisconsinhistory.org

Daina Penkiunas
State Historic Preservation Officer
Wisconsin Historical Society
816 State Street
Madison, WI 53706

Subject: U.S. Department of Transportation Maritime Administration
Section 106 initiation
C. Reiss Coal Company, Superior Dock Rehabilitation Project, Harbor Assistance Program

Dear Ms. Penkiunas:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

This action constitutes an undertaking under Section 106 of the National Historic Preservation Act 1966, as amended (54 U.S.C. § 300101 et seq.). Pursuant to Section 106 and its implementing regulations, 36 CFR § 800, MARAD is initiating consultation with your office regarding this project.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Area of Potential Effects

Based on research of the property by the C. Reiss Coal Company, including local government tax records, the Area of Potential Effect (APE) for direct effects to archaeological resources and historic structures has been defined as those areas where subsurface impacts can be anticipated during construction of the Project and includes the Project Area as depicted in Figure 1. The APE for indirect (visual) effects on historical structures is defined as a 0.5-mile radius (buffer) surrounding the Project Area.

Identification of Historic Properties

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the APE. However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial use of the APE. Continued operation and upgrades of the industrial facilities within the APE over time and subsequent abandonment and demolition has resulted in significant impacts to potential historical resources associated with the industrial use of the APE.

On June 6, 2022 the following Indian tribes were notified about the Superior Dock Rehabilitation Project: Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Keweenaw Bay Indian Community, Michigan; Sokaogon Chippewa Community, Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Fort Belknap Indian Community of the Fort Belknap Reservation of Montana; Grand Portage Band of the Minnesota Chippewa Tribe St. Croix Chippewa Indians of Wisconsin; Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Leech Lake Band of the Minnesota Chippewa Tribe; Fond du Lac Band of the Minnesota Chippewa Tribe; Mille Lacs Band of Ojibwe (The Mille Lacs Band of the Minnesota Chippewa Tribe Mille Lacs Band of Ojibwe); Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Miami Tribe of Oklahoma; Menominee Indian Tribe of Wisconsin; and the White Earth Band of the Minnesota Chippewa Tribe.

Assessment of Effects

There is one historic property in the APE for indirect (visual) effects. However, it is screened from the Project by modern industrial facilities. The proposed Project would not have any potential to disturb historic resources due to the history of industrial impacts within the APE. Additionally, the proposed Project is in keeping with the industrial character of the surrounding area and would not create a negative visual impact to adjacent structures. As such, MARAD recommends a finding of No Historic Properties Affected.

Pursuant to 36 CFR 800.4(d)(1) MARAD seeks concurrence by your office with this finding.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA benjamin.banks@stantec.com, (316) 634-6218 to consult with your Agency on behalf of MARAD. We therefore request that you provide a copy of your response to them.

Due to the ongoing pandemic I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

For SHPO Use Only. Case # ________________

REQUEST FOR SHPO COMMENT AND CONSULTATION ON A FEDERAL UNDERTAKING

Submit one copy with each undertaking for which our comment is requested. Please print or type. Return to:
Wisconsin Historical Society, State Historic Preservation Office, 816 State Street, Madison, WI 53706
Please Check All Boxes and Include All of the Following Information, as Applicable.

I. GENERAL INFORMATION

☑ **This is a new submittal.**
☐ **This is supplemental information relating to Case #:____________, and title:______________________________**
☐ **This project is being undertaken pursuant to the terms and conditions of a programmatic or other interagency agreement. The title of the agreement is ______________________________**

a. Federal Agency Jurisdiction (Agency providing funds, assistance, license, permit): MARAD

b. Federal Agency Contact Person: Barbara Voulgaris Phone: 203-366-0866

c. Project Contact Person: Christian Zuidmulder Phone: ____________

d. Return Address: 111 West Mason Street City: Green Bay Zip Code: 54303

e. Email Address: Christian.Zuidmulder@Thecreiss.com

f. Project Name: C. Reiss Port of Superior Infrastructure Improvement Project

g. Project Street Address: ______________________________

h. County: Douglas County City: Superior Zip Code: 54880

i. Project Location: Township 49, Range 14, East ☐ or West ■, Section 9 & 16, Quarter Sections ______

j. Project Narrative Description—Attach Information as Necessary.

k. Area of Potential Effect (APE). Attach Copy of U.S.G.S. 7.5 Minute Topographic Quadrangle showing APE.

II. IDENTIFICATION OF HISTORIC PROPERTIES

☐ Historic Properties are located within the project APE per 36 CFR 800.4. Attach supporting materials, per 36 CFR 800.11.
☑ Historic Properties are not located within the project APE per 36 CFR 800.4. Attach supporting materials, per CFR 800.11.

III. FINDINGS

☐ No historic properties will be affected (i.e., none is present or there are historic properties present but the project will have no effect upon them). Attach necessary documentation, as described at 36 CFR 800.11.
☑ The proposed undertaking will have no adverse effect on one or more historic properties located within the project APE under 36 CFR 800.5. Attach necessary documentation, as described at 36 CFR 800.11.
☐ The proposed undertaking will result in an adverse effect to one or more historic properties and the applicant, or other federally authorized representative, will consult with the SHPO and other consulting parties to resolve the adverse effect per 36 CFR 800.6. Attach supporting documentation as described at 36 CFR 800.11.

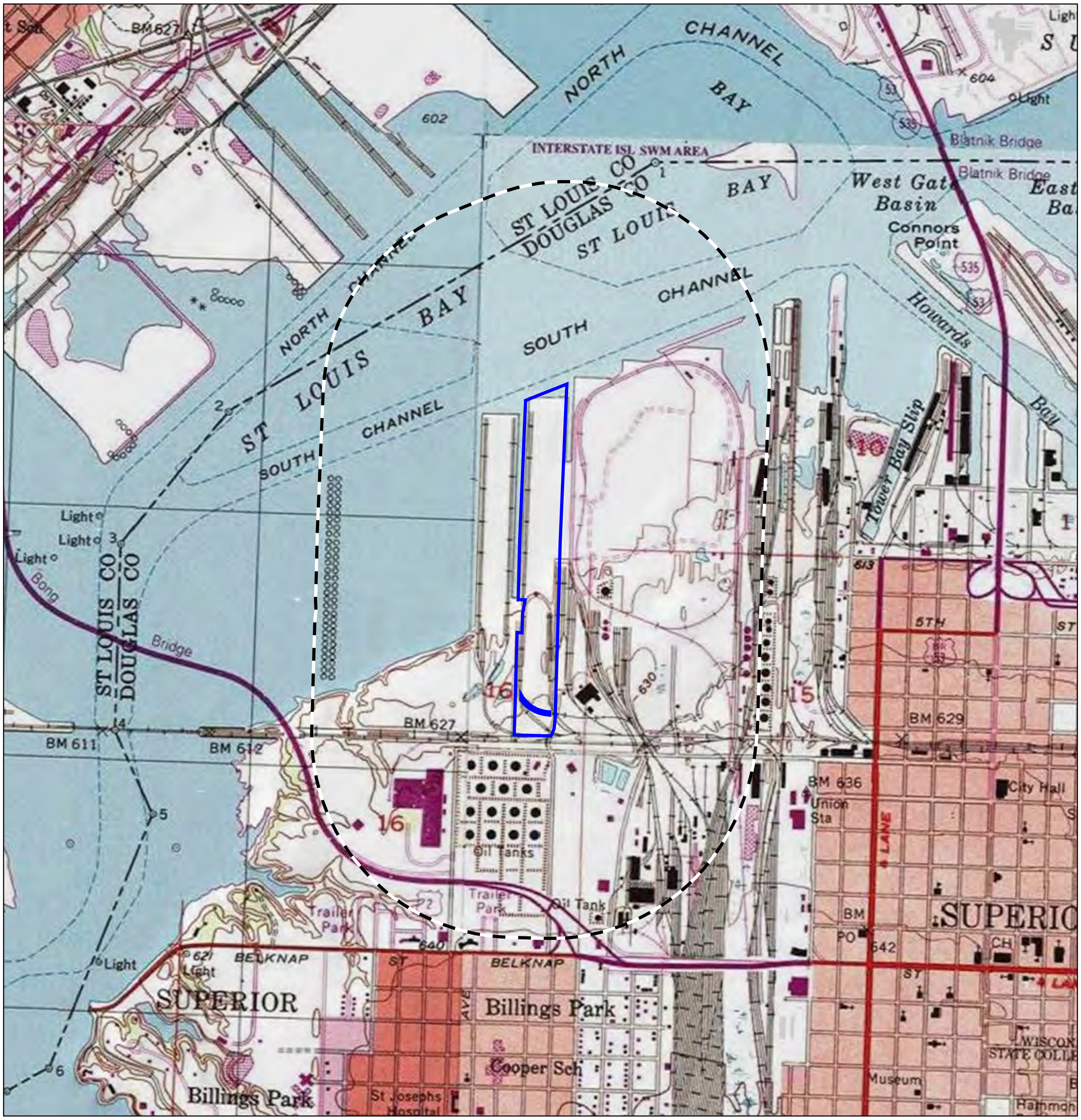
Authorized Signature: ______________________________ Date: ____________

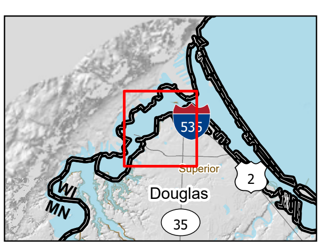
Type or print name: Barbra Voulgaris

IV. STATE HISTORIC PRESERVATION OFFICE COMMENTS

☐ Agree with the finding in section III above.
☐ Object to the finding for reasons indicated in attached letter.
☐ Cannot review until information is sent as follows: ______________________________

Authorized Signature: ______________________________ Date: ____________





Legend

Project Boundary

1/2 Mile Project Buffer

0 1,000 2,000
Feet

(At original document size of 8.5x11)
1:24,000

N

Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

Prepared by AJS on 2022-05-09
TR by JS on 2022-05-09
IR by BB on 2022-05-19

Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Cultural Resources Report

Figure No.
1

Title
Project Topography and Location

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, WDNR, WisDOT
3. Background: USGS 7.5' Topographic Quardangles

V:\1937\Active\193707141\03_data\gis_cad\gis\mxds\Cultural_Report\C_Reiss_Superior_Dock_Project\C_Reiss_Superior_Dock_Project.aprx Revised: 2022-05-19 By: aswaim

Client:	C. Reiss Company LLC	Project:	C. Reiss, Port of Superior, Infrastructure Improvements Project
Site Name:	C. Reiss Dock	Site Location:	Superior, WI

Photograph ID: 1

Photo Location:
North Half of Project Area

Direction:
SW

Survey Date:
5/4/2022

Comments:
West edge of Project Area with view of dock to the west. Border of the Project Area is lined with concrete.

Photograph ID: 2

Photo Location:
North Half of Project Area

Direction:
SE

Survey Date:
5/4/2022

Comments:
North half of the Project Area with view of grain elevators to the east. Ground surface is primarily asphaltic material and concrete with trees and grasses interspersed and growing through the cracks.

Client:	**C. Reiss Company LLC**	**Project:**	**C. Reiss, Port of Superior, Infrastructure Improvements Project**
Site Name:	**C. Reiss Dock**	**Site Location:**	**Superior, WI**

Photograph ID: 3 **Photo Location:** North Half of Project Area **Direction:** N **Survey Date:** 5/4/2022 **Comments:** North half of the Project Area with view of St. Louis Bay. Ground surface is primarily asphaltic material and concrete with trees and grasses interspersed. A fill pile is present the northern border of the Project Area.	
Photograph ID: 4 **Photo Location:** North Half of Project Area **Direction:** E **Survey Date:** 5/4/2022 **Comments:** North half of the Project Area with view of grain elevators to the east. Ground surface is primarily asphaltic material and concrete with trees and grasses interspersed and growing through the cracks.	

Client:	**C. Reiss Company LLC**	**Project:**	**C. Reiss, Port of Superior, Infrastructure Improvements Project**
Site Name:	**C. Reiss Dock**	**Site Location:**	**Superior, WI**

Photograph ID: 5

Photo Location:
South Half of Project Area

Direction:
W

Survey Date:
5/4/2022

Comments:
South half of the Project Area. Ground surface is primarily asphaltic material and concrete with trees and grasses interspersed and growing through the cracks.. A fill pile is visible in the background.

Photograph ID: 6

Photo Location:
South Half of Project Area

Direction:
N

Survey Date:
5/4/2022

Comments:
Miscellaneous concrete and metal debris in the south half of the Project Area. Ground surface is primarily asphaltic material with trees and grasses interspersed.

Client:	**C. Reiss Company LLC**	**Project:**	**C. Reiss, Port of Superior, Infrastructure Improvements Project**
Site Name:	**C. Reiss Dock**	**Site Location:**	**Superior, WI**

Photograph ID: 7

Photo Location:
South Half of Project Area

Direction:
E

Survey Date:
5/5/2022

Comments:
Existing utility lines and associated access structures are located throughout the south half of the Project Area. Ground surfaces are primarily covered in grasses and trees and exhibit evidence of prior disturbance.

Photograph ID: 8

Photo Location:
South Half of Project Area

Direction:
N

Survey Date:
5/5/2022

Comments:
Existing utility line and associated vent ports are located throughout the south half of the Project Area. Ground surfaces are primarily covered in grasses and trees and exhibit evidence of prior disturbance.

Client:	**C. Reiss Company LLC**	**Project:**	**C. Reiss, Port of Superior, Infrastructure Improvements Project**
Site Name:	**C. Reiss Dock**	**Site Location:**	**Superior, WI**

Photograph ID: 9

Photo Location:
WHPD Structure 17590

Direction:
S

Survey Date:
5/5/2022

Comments:
Former location of WHPD Structure 17590, view from Winter St. Located approximately 0.4 miles southeast of the Project Area. Structure has been demolished.

Photograph ID: 10

Photo Location:
WHPD Structure 17591

Direction:
NE

Survey Date:
5/5/2022

Comments:
West side of WHPD Structure 17591, Manion's Wholesale Building Supplies, view from inside the building complex. Located approximately 0.5 miles south of the Project Area.

Client:	**C. Reiss Company LLC**	**Project:**	**C. Reiss, Port of Superior, Infrastructure Improvements Project**
Site Name:	**C. Reiss Dock**	**Site Location:**	**Superior, WI**

Photograph ID: 11

Photo Location:
WHPD Structure 17593

Direction:
NE

Survey Date:
5/5/2022

Comments:
Southwest side of WHPD Structure 17593 located on BNSF railyard, view from Manion's Wholesale Building Supplies complex. Located approximately 0.5 miles southeast of the Project Area.

Photograph ID: 12

Photo Location:
WHPD Structure 17595

Direction:
SE

Survey Date:
5/5/2022

Comments:
Former location of WHPD Structure 17595, view from Garfield Ave. Structure has been demolished.

Client:	C. Reiss Company LLC	Project:	C. Reiss, Port of Superior, Infrastructure Improvements Project
Site Name:	C. Reiss Dock	Site Location:	Superior, WI

Photograph ID: 13

Photo Location:
WHPD Structure 17783

Direction:
N

Survey Date:
5/5/2022

Comments:
South side of WHPD Structure 17783, view from public access road. Located approximately 0.5 miles east of the Project Area.

Photograph ID: 14

Photo Location:
WHPD Structure 17883

Direction:
W

Survey Date:
5/5/2022

Comments:
East side of WHPD Structure 17883 located south of WHPD Structure 17783 (grain elevators), view from North 3rd St.

Client:	C. Reiss Company LLC	Project:	C. Reiss, Port of Superior, Infrastructure Improvements Project
Site Name:	C. Reiss Dock	Site Location:	Superior, WI

Photograph ID: 15

Photo Location:
WHPD Structure 17895

Direction:
N

Survey Date:
5/5/2022

Comments:
South side of WHPD Structure 17895, located at 2700 Winter St., view from Ajax Rd. Located approximately 0.1 miles east of the Project Area.

Photograph ID: 16

Photo Location:
WHPD Structure 17896

Direction:
SE

Survey Date:
5/5/2022

Comments:
Northwest side of WHPD Structure 17896, located at 2826 Winter St., view from Maryland Ave. Located approximately 0.1 miles south the Project Area.

APPENDIX I

THPOs

APPENDIX Ia

THPO letters

U.S. Department
Of Transportation
**Maritime
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Edith Leoso
THPO
Bad River Band of the Lake Superior Tribe of Chippewa Indians
of the Bad River Reservation, Wisconsin
P.O. Box 39
Odanah, WI 54861

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Ms. Leoso:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial

use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

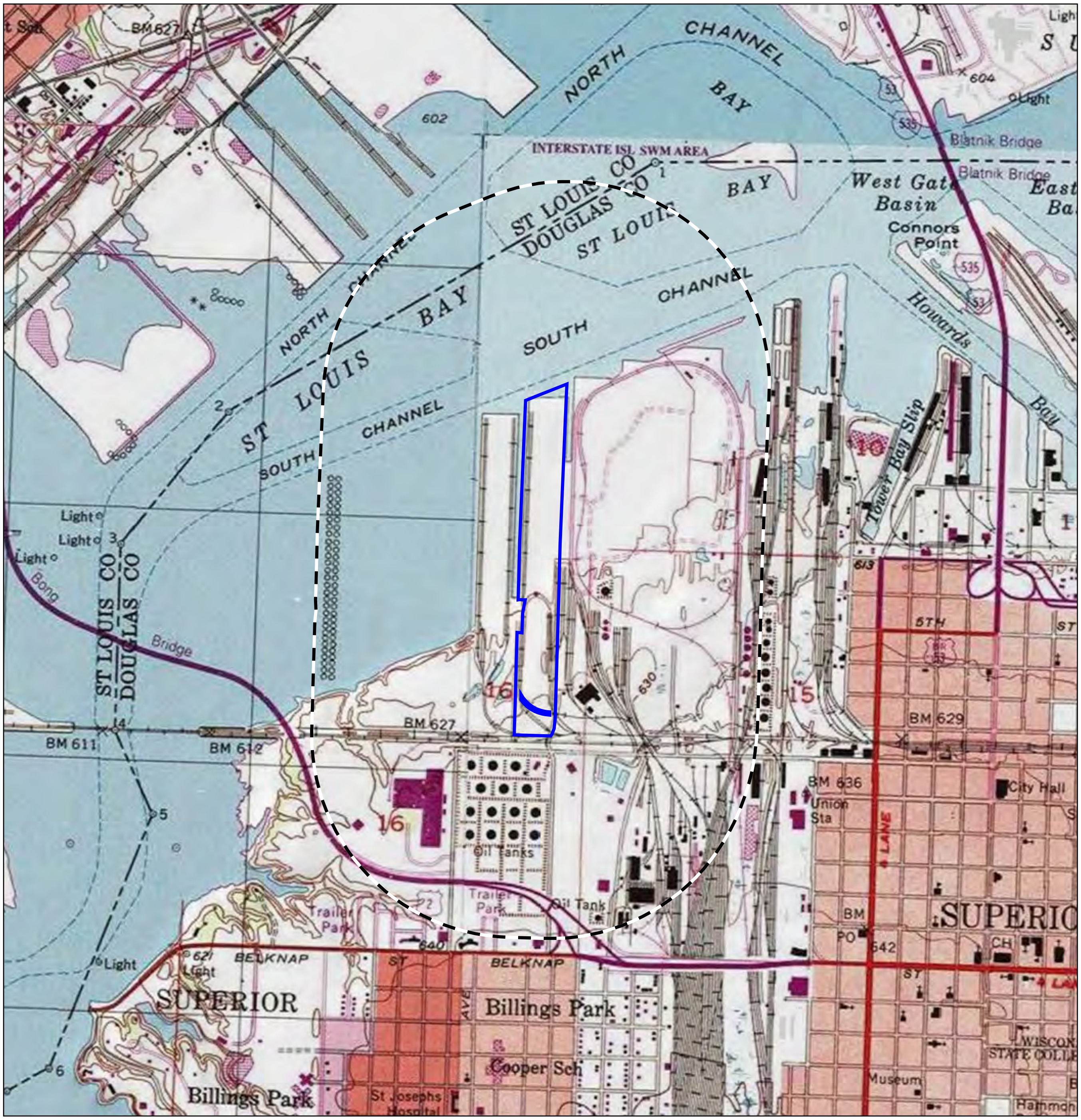
We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

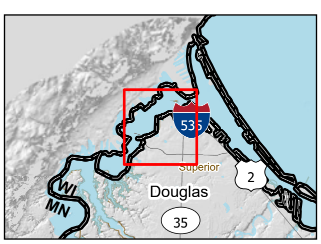
Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866





Legend

Project Boundary

1/2 Mile Project Buffer

0 1,000 2,000 Feet

(At original document size of 8.5x11)
1:24,000

N

Stantec

Project Location
T49N, R14W, S09 & S16
C. of Superior, Douglas Co., WI

Prepared by AJS on 2022-05-09
TR by JS on 2022-05-09
IR by BB on 2022-05-19

Client/Project
193707141
The C. Reiss Coal Company, LLC
Reiss Superior Dock
Cultural Resources Report

Figure No.
1

Title
Project Topography and Location

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin North FIPS 4801 Feet
2. Data Sources: Stantec, WDNR, WisDOT
3. Background: USGS 7.5' Topographic Quardangles

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Stantec **Photographic Log**

Client:	**C. Reiss Company LLC**	**Project:**	**C. Reiss, Port of Superior, Infrastructure Improvements Project**
Site Name:	**C. Reiss Dock**	**Site Location:**	**Superior, WI**

Photograph ID: 1

Photo Location:
North Half of Project Area

Direction:
SW

Survey Date:
5/4/2022

Comments:
West edge of Project Area with view of dock to the west. Border of the Project Area is lined with concrete.

Photograph ID: 2

Photo Location:
North Half of Project Area

Direction:
SE

Survey Date:
5/4/2022

Comments:
North half of the Project Area with view of grain elevators to the east. Ground surface is primarily asphaltic material and concrete with trees and grasses interspersed and growing through the cracks.

Client:	C. Reiss Company LLC	Project:	C. Reiss, Port of Superior, Infrastructure Improvements Project
Site Name:	C. Reiss Dock	Site Location:	Superior, WI

Photograph ID: 3 **Photo Location:** North Half of Project Area **Direction:** N **Survey Date:** 5/4/2022 **Comments:** North half of the Project Area with view of St. Louis Bay. Ground surface is primarily asphaltic material and concrete with trees and grasses interspersed. A fill pile is present the northern border of the Project Area.	
Photograph ID: 4 **Photo Location:** North Half of Project Area **Direction:** E **Survey Date:** 5/4/2022 **Comments:** North half of the Project Area with view of grain elevators to the east. Ground surface is primarily asphaltic material and concrete with trees and grasses interspersed and growing through the cracks.	

Client:	C. Reiss Company LLC	Project:	C. Reiss, Port of Superior, Infrastructure Improvements Project
Site Name:	C. Reiss Dock	Site Location:	Superior, WI

Photograph ID: 5

Photo Location:
South Half of Project Area

Direction:
W

Survey Date:
5/4/2022

Comments:
South half of the Project Area. Ground surface is primarily asphaltic material and concrete with trees and grasses interspersed and growing through the cracks.. A fill pile is visible in the background.

Photograph ID: 6

Photo Location:
South Half of Project Area

Direction:
N

Survey Date:
5/4/2022

Comments:
Miscellaneous concrete and metal debris in the south half of the Project Area. Ground surface is primarily asphaltic material with trees and grasses interspersed.

Client:	**C. Reiss Company LLC**	**Project:**	**C. Reiss, Port of Superior, Infrastructure Improvements Project**
Site Name:	**C. Reiss Dock**	**Site Location:**	**Superior, WI**

Photograph ID: 7

Photo Location:
South Half of Project Area

Direction:
E

Survey Date:
5/5/2022

Comments:
Existing utility lines and associated access structures are located throughout the south half of the Project Area. Ground surfaces are primarily covered in grasses and trees and exhibit evidence of prior disturbance.

Photograph ID: 8

Photo Location:
South Half of Project Area

Direction:
N

Survey Date:
5/5/2022

Comments:
Existing utility line and associated vent ports are located throughout the south half of the Project Area. Ground surfaces are primarily covered in grasses and trees and exhibit evidence of prior disturbance.

Client:	**C. Reiss Company LLC**	**Project:**	**C. Reiss, Port of Superior, Infrastructure Improvements Project**
Site Name:	**C. Reiss Dock**	**Site Location:**	**Superior, WI**

Photograph ID: 9 **Photo Location:** WHPD Structure 17590 **Direction:** S **Survey Date:** 5/5/2022 **Comments:** Former location of WHPD Structure 17590, view from Winter St. Located approximately 0.4 miles southeast of the Project Area. Structure has been demolished.	
Photograph ID: 10 **Photo Location:** WHPD Structure 17591 **Direction:** NE **Survey Date:** 5/5/2022 **Comments:** West side of WHPD Structure 17591, Manion's Wholesale Building Supplies, view from inside the building complex. Located approximately 0.5 miles south of the Project Area.	

Stantec

Photographic Log

Client:	**C. Reiss Company LLC**	**Project:**	**C. Reiss, Port of Superior, Infrastructure Improvements Project**
Site Name:	**C. Reiss Dock**	**Site Location:**	**Superior, WI**

Photograph ID: 11

Photo Location:
WHPD Structure 17593

Direction:
NE

Survey Date:
5/5/2022

Comments:
Southwest side of WHPD Structure 17593 located on BNSF railyard, view from Manion's Wholesale Building Supplies complex. Located approximately 0.5 miles southeast of the Project Area.

Photograph ID: 12

Photo Location:
WHPD Structure 17595

Direction:
SE

Survey Date:
5/5/2022

Comments:
Former location of WHPD Structure 17595, view from Garfield Ave. Structure has been demolished.

Stantec **Photographic Log**

Client:	**C. Reiss Company LLC**	**Project:**	**C. Reiss, Port of Superior, Infrastructure Improvements Project**
Site Name:	**C. Reiss Dock**	**Site Location:**	**Superior, WI**

Photograph ID: 13

Photo Location:
WHPD Structure 17783

Direction:
N

Survey Date:
5/5/2022

Comments:
South side of WHPD Structure 17783, view from public access road. Located approximately 0.5 miles east of the Project Area.

Photograph ID: 14

Photo Location:
WHPD Structure 17883

Direction:
W

Survey Date:
5/5/2022

Comments:
East side of WHPD Structure 17883 located south of WHPD Structure 17783 (grain elevators), view from North 3rd St.

Client:	**C. Reiss Company LLC**	**Project:**	**C. Reiss, Port of Superior, Infrastructure Improvements Project**
Site Name:	**C. Reiss Dock**	**Site Location:**	**Superior, WI**

Photograph ID: 15

Photo Location:
WHPD Structure 17895

Direction:
N

Survey Date:
5/5/2022

Comments:
South side of WHPD Structure 17895, located at 2700 Winter St., view from Ajax Rd. Located approximately 0.1 miles east of the Project Area.

Photograph ID: 16

Photo Location:
WHPD Structure 17896

Direction:
SE

Survey Date:
5/5/2022

Comments:
Northwest side of WHPD Structure 17896, located at 2826 Winter St., view from Maryland Ave. Located approximately 0.1 miles south the Project Area.

U.S. Department
Of Transportation
Maritime
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Jill Hoppe
Tribal Historic Preservation Officer
Fond du Lac Band of the Minnesota Chippewa Tribe
1720 Big Lake Rd
Cloquet, MN 55720

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Ms. Hoppe:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Fond du Lac Band of the Minnesota Chippewa Tribe that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
Maritime
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Michael Blackwolf
Tribal Historic Preservation Officer
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
656 Agency Main Street
Harlem, MT 59526-9455

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Mr. Blackwolf:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Fort Belknap Indian Community of the Fort Belknap Reservation of Montana that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
**Maritime
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Mary Ann Gagnon
Tribal Historic Preservation Officer
Grand Portage Band of the Minnesota Chippewa Tribe
P.O. Box 428
Grand Portage, MN 55605

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Ms. Gagnon:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Grand Portage Band of the Minnesota Chippewa Tribe that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

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Maritime
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Alden Connor
Tribal Historic Preservation Officer
Keweenaw Bay Indian Community, Michigan
16429 Beartown Rd.
Baraga, MI 49908

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Mr. Connor:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Keweenaw Bay Indian Community, Michigan that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
Maritime
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Brian Bisonette
Tribal Historic Preservation Officer
Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin
13394 West Trepania Road
Hayward, WI 54843

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Mr. Bisonette:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

<u>Project Description</u>

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

<u>Previous surveys</u>

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
**Maritime
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Melina Young
Tribal Historic Preservation Officer
Lad du Flambeau Band of Lake Superior Chippewa Indians
of the Lac du Flambeau Reservation of Wisconsin
P.O. Box 67
Lac du Flambeau, WI 54538

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Ms. Young:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial

use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
Maritime
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Alina Shively
Tribal Historic Preservation Office Director
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
P.O. Box 249
Watersmeet, MI 49969

Dear Ms. Shively:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19^{th} century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20^{th} century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
Maritime
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Amy Burnette
Tribal Historic Preservation Officer
Leech Lake Band of the Minnesota Chippewa Tribe
190 Sailstar Drive NE
Cass Lake, MN 56633

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Ms. Burnette:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Leech Lake Band of the Minnesota Chippewa Tribe that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
Maritime
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

David Grignon
Director
Tribal Historic Preservation Office
Menominee Indian Tribe of Wisconsin
P.O. Box 910
Keshena, WI 54135

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Mr. Grignon:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Menominee Indian Tribe of Wisconsin that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial

use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
**Maritime
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL: dhunter@miamination.com

Diane Hunter
Tribal Historic Preservation Officer
Miami Tribe of Oklahoma
P.O. Box 1326
Miami, OK 74355

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Ms. Hunter:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Miami Tribe of Oklahoma that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
Maritime
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Terry Kemper
Tribal Historic Preservation Officer
Mille Lacs Band of Ojibwe (The Mille Lacs Band of the
Minnesota Chippewa Tribe Mille Lacs Band of Ojibwe)
43408 Oodena Drive
Onamia, MN 56539

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Mr. Kemper:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Mille Lacs Band of Ojibwe (The Mille Lacs Band of the Minnesota Chippewa Tribe Mille Lacs Band of Ojibwe) that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial

use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
**Maritime
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Marvin DeFoe
Tribal Historic Preservation Officer
Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin
36750 Hwy 13
Red Cliff, WI 54814

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Mr. DeFoe:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
Maritime
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Michael LaRonge
Tribal Historic Preservation Officer
Sokaogon Chippewa Community, Wisconsin
3051 Sand Lake Rd.
Crandon, WI 54520

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Mr. LaRonge:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the Sokaogon Chippewa Community, Wisconsin that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

<u>Project Description</u>

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

<u>Previous Surveys</u>

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19^{th} century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20^{th} century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
Maritime
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Wanda McFaggen
Tribal Historic Preservation Officer
St. Croix Chippewa Indians of Wisconsin
24663 Angeline Ave.
Webster, WI 54893

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Ms. McFaggen:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the St. Croix Chippewa Indians of Wisconsin that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

U.S. Department
Of Transportation
**Maritime
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

June 6, 2022

VIA ELECTRONIC MAIL

Jaime Arsenault
Tribal Historic Preservation Officer
White Earth Band of the Minnesota Chippewa Tribe
P.O. Box 418
White Earth, MN 56591

Subject: C. Reiss Coal Company, Superior Dock Rehabilitation Project, Douglas County, Wisconsin

Dear Ms. Arsenault:

The U.S. Department of Transportation (DOT) Maritime Administration (MARAD) awarded funds to the C. Reiss Coal Company under the Port Infrastructure Development Program (PIDP) for improvements to the Superior Dock. The project is located in the City of Superior, Douglas County, Wisconsin. The project location is entirely urbanized and contains existing commercial docking development.

In keeping with a government-to-government relationship, and in compliance with the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and it's implementing regulations, 36 CFR § 800, we invite you to participate in the Section 106 process as a consulting party. As part of the review process, we request information that identifies any resources that may hold traditional religious or cultural significance to the White Earth Band of the Minnesota Chippewa Tribe that could be affected by the proposed work, and, if applicable, assist in developing alternatives that would avoid, minimize, or mitigate any adverse effects.

Project Description

The Superior Dock Rehabilitation Project (Project) seeks to reactivate the C. Reiss Coal Dock on Saint Louis Bay in Township 49 North, Range 14 West, Sections 9 and 16 in the City of Superior, Douglas County, Wisconsin. The Project consists of approximately 53 acres north of Winter Street and is the second dock east of Highway 2. Rehabilitation will consist of reconstruction of a dockwall and rail lines as well as dredging along the exterior of the dock. A Project location map and photographic log with photographs of the Project are attached.

Previous Surveys

A desktop survey has been completed and is attached for your reference. The results indicate that no previously identified historic structures, archaeological sites, burial sites, or cemeteries are located within the Area of Potential Effect (APE). However, the APE has never been surveyed for the presence of cultural material. The APE has been subjected to extensive industrial impacts beginning in the late 19th century. These impacts include the importation of fill material to construct the dock and the installation of industrial facilities such as rail lines and pipelines to support 20th century industrial use of the APE. The Wisconsin State Historic Preservation Office (SHPO) has been contacted to provide comment on this Project.

Please note that for the purposes of this project, MARAD has authorized Benjamin Banks, RPA, benjamin.banks@stantec.com, (316) 634-6218 to consult with your Tribe on behalf of MARAD. We therefore request that you provide a copy of your response to them.

We value your assistance and look forward to consulting further if there are historic properties of religious and/or cultural significance to your Tribe that may be affected by this project. To meet project timeframes, if you would like to participate or provide information regarding this project, MARAD respectfully requests that you notify us within 30 days.

Due to the ongoing pandemic, I am working remotely and request that all communication be sent electronically. If you have additional questions or comments, please contact me and/or the consultant for the action proponent, Benjamin Banks, benjamin.banks@stantec.com, (316) 634-6218.

Sincerely,

Barbara Voulgaris

Barbara Voulgaris
Federal Preservation Officer
Barbara.Voulgaris@dot.gov
202.366.0866

APPENDIX Ib

THPO receipts

7021 0950 0001 6041 2673

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
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For delivery information, visit our website at www.usps.com®.

Hayward, WI 54843

OFFICIAL USE

Certified Mail Fee	$ $3.75
Extra Services & Fees (check box, add fee as appropriate)	$3.05
☐ Return Receipt (hardcopy)	$ $0.00
☐ Return Receipt (electronic)	$ $0.00
☐ Certified Mail Restricted Delivery	$ $0.00
☐ Adult Signature Required	$ $0.00
☐ Adult Signature Restricted Delivery	$
Postage	$ $2.16
Total Postage and Fees	$ $8.96

Postmark Here: 0143 88 — WICHITA, KS MUNGER STATION 67208 — JUN 09 2022 — 06/09/2022 — USPS

Sent To: Brian Brisonette
Street and Apt. No., or PO Box No.: 13394 W. Trepania Rd
City, State, ZIP+4®: Hayward, WI 54843

PS Form 3800, April 2015 PSN 7530-02-000-9047 — See Reverse for Instructions

7021 0950 0001 6041 2659

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For delivery information, visit our website at www.usps.com®.

Harlem, MT 59526

OFFICIAL USE

Certified Mail Fee	$ $3.75
Extra Services & Fees (check box, add fee as appropriate)	$3.05
☐ Return Receipt (hardcopy)	$ $0.00
☐ Return Receipt (electronic)	$ $0.00
☐ Certified Mail Restricted Delivery	$ $0.00
☐ Adult Signature Required	$ $0.00
☐ Adult Signature Restricted Delivery	$
Postage	$ $2.16
Total Postage and Fees	$ $8.96

Postmark Here: 0143 88 — WICHITA, KS MUNGER STATION 67208 — JUN 09 2022 — 06/09/2022 — USPS

Sent To: Michael Blackwolf
Street and Apt. No., or PO Box No.: 656 Agency Main St.
City, State, ZIP+4®: Harlem, MT 59526-9455

PS Form 3800, April 2015 PSN 7530-02-000-9047 — See Reverse for Instructions

7021 0950 0001 6041 2697

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Onamia, MN 56359

OFFICIAL USE

Certified Mail Fee	$ $3.75
Extra Services & Fees (check box, add fee as appropriate)	$3.05
☐ Return Receipt (hardcopy)	$ $0.00
☐ Return Receipt (electronic)	$ $0.00
☐ Certified Mail Restricted Delivery	$ $0.00
☐ Adult Signature Required	$ $0.00
☐ Adult Signature Restricted Delivery	$
Postage	$ $2.16
Total Postage and Fees	$ $8.96

Postmark Here: 0143 88 — WICHITA, KS MUNGER STATION 67208 — JUN 09 2022 — 06/09/2022 — USPS

Sent To: Terry Kemper
Street and Apt. No., or PO Box No.: 43408 Oodena Dr 56359
City, State, ZIP+4®: Onamia, MN 56539

PS Form 3800, April 2015 PSN 7530-02-000-9047 — See Reverse for Instructions

7021 0950 0001 6041 2680

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Cass Lake, MN 56633

OFFICIAL USE

Certified Mail Fee	$ $3.75
Extra Services & Fees (check box, add fee as appropriate)	$3.05
☐ Return Receipt (hardcopy)	$ $0.00
☐ Return Receipt (electronic)	$ $0.00
☐ Certified Mail Restricted Delivery	$ $0.00
☐ Adult Signature Required	$ $0.00
☐ Adult Signature Restricted Delivery	$
Postage	$ $2.16
Total Postage and Fees	$ $8.96

Postmark Here: 0143 88 — WICHITA, KS MUNGER STATION 67208 — JUN 09 2022 — 06/09/2022 — USPS

Sent To: Amy Burnette
Street and Apt. No., or PO Box No.: 190 Sailstar Dr. NE
City, State, ZIP+4®: Cass Lake, MN 56633

PS Form 3800, April 2015 PSN 7530-02-000-9047 — See Reverse for Instructions

6041 2642

U.S. Postal Service™
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Baraga, MI 49908

OFFICIAL USE

Certified Mail Fee	$ $3.75
Extra Services & Fees (check box, add fee as appropriate)	$3.05

0143 88 — MUNGER STATION

1 6041 2666

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Cloquet, MN 55720

OFFICIAL USE

Certified Mail Fee	$ $3.75
Extra Services & Fees (check box, add fee as appropriate)	$3.05
☐ Return Receipt (hardcopy)	$ $0.00

0143 88 — KS MUNGER STATION — Postmark

7021 0950 0001 6041 2703

U.S. Postal Service™
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Bayfield, WI 54814

OFFICIAL USE

Certified Mail Fee $ $3.75

Extra Services & Fees *(check box, add fee as appropriate)* $3.05
- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00
- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $

Postage $ $2.16

Total Postage and Fees $ $8.96

0143
88

WICHITA, KS MUNGER STATION 67208
JUN 09 2022
USPS

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06/09/2022

Sent To Marvin De Foe

Street and Apt. No., or PO Box No. 36750 Hwy 13 Bayfield

City, State, ZIP+4® ~~Red Cliff~~ WI 54814

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7021 0950 0001 6041 2628

U.S. Postal Service™
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White Earth, MN 56591

OFFICIAL USE

Certified Mail Fee $ $3.75

Extra Services & Fees *(check box, add fee as appropriate)* $3.05
- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00
- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $

Postage $ $2.16

Total Postage and Fees $ $8.96

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WICHITA, KS MUNGER STATION 67208
JUN 09 2022
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06/09/2022

Sent To Jaime Arsenault

Street and Apt. No., or PO Box No. P.O. Box 418

City, State, ZIP+4® White Earth, MN 56591

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7021 0950 0001 6041 2635

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Crandon, WI 54520

OFFICIAL USE

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Extra Services & Fees *(check box, add fee as appropriate)* $3.05
- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00
- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $

Postage $ $2.16

Total Postage and Fees $ $8.96

0143
88

WICHITA, KS MUNGER STATION 67208
JUN 09 2022
USPS

Postmark Here

06/09/2022

Sent To Michael LaRonge

Street and Apt. No., or PO Box No. 305[illegible]1 Sand Lake Rd

City, State, ZIP+4® Crandon, WI 54520

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7021 0950 0001 6041 2611

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Webster, WI 54893

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Extra Services & Fees *(check box, add fee as appropriate)* $3.05
- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00
- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $

Postage $ $2.16

Total Postage and Fees $ $8.96

0143
88

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JUN 09 2022
USPS

Postmark Here

06/09/2022

Sent To Wanda McFaggen

Street and Apt. No., or PO Box No. 24663 Angeline Ave

City, State, ZIP+4® Webster, WI 54893

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

01 6041 2598

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Odanah, WI 54861

OFFICIAL USE

Certified Mail Fee $ $3.75

0143
88

Extra Services & Fees *(check box, add fee as appropriate)* $3.05
- ☐ Return Receipt (hardcopy) $0.00
- ☐ Return Receipt (electronic) $0.00

MUNGER STATION

Postmark

1 6041 2604

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Grand Portage, MN 55605

OFFICIAL USE

Certified Mail Fee $ $3.75

0143
88

Extra Services & Fees *(check box, add fee as appropriate)* $3.05
- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00

KS MUNGER STATION

Postmark

7021 0950 0001 6041 2574

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Lac Du Flambeau, WI 54538

OFFICIAL USE

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- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00
- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $

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WICHITA, KS MUNGER STATION 67208 JUN 09 2022 USPS

Postage $ $2.16 | 06/09/2022

Total Postage and Fees $ $8.96

Sent To Melina Young

Street and Apt. No., or PO Box No. P.O. Box 67

City, State, ZIP+4® LAC du Flambeau, WI 54538

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7021 0950 0001 6041 2581

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Miami, OK 74355

OFFICIAL USE

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- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00
- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $

Postmark Here

WICHITA, KS MUNGER STATION 67208 JUN 09 2022 USPS

Postage $ $2.16 | 06/09/2022

Total Postage and Fees $ $8.96

Sent To Diane Hunter

Street and Apt. No., or PO Box No. P.O. Box 1326

City, State, ZIP+4® Miami, OK 74355

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

0950 0001 6041 2550

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For delivery information, visit our website at *www.usps.com®*.

Keshena, WI 541[illegible]

OFFICIAL USE

Certified Mail Fee $ $3.75 | 0143 | 88

Extra Services & Fees *(check box, add fee as appropriate)* $3.05
- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00
- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $

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WICHITA, KS MUNGER STATION 67208 JUN 09 2022

Postage $ $2.16 | 06/09/2022

Total Postage and Fees

950 0001 6041 2567

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For delivery information, visit our website at *www.usps.com®*.

Watersmeet, MI 49969

OFFICIAL USE

Certified Mail Fee $ $3.75 | 0143 | 88

Extra Services & Fees *(check box, add fee as appropriate)* $3.05
- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00
- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $

Postmark Here

WICHITA, KS MUNGER STATION 67208 JUN 09 2022

Postage $ $2.16 | 06/09/2022

UNITED STATES POSTAL SERVICE.

MUNGER
1314 N OLIVER AVE
WICHITA, KS 67208-2804
(800)275-8777

06/09/2022 03:45 PM

Product	Qty	Unit Price	Price
First-Class Mail® Large Envelope	1		$2.16
Harlem, MT 59526			
Weight: 0 lb 5.20 oz			
Estimated Delivery Date			
Mon 06/13/2022			
Certified Mail®			$3.75
Tracking #:			
70210950000160412659			
Return Receipt			$3.05
Tracking #:			
9590 9402 6413 0303 4516 53			
Total			$8.96
First-Class Mail® Large Envelope	1		$2.16
Hayward, WI 54843			
Weight: 0 lb 5.20 oz			
Estimated Delivery Date			
Mon 06/13/2022			
Certified Mail®			$3.75
Tracking #:			
70210950000160412673			
Return Receipt			$3.05
Tracking #:			
9590 9402 6413 0303 4516 39			
Total			$8.96
First-Class Mail® Large Envelope	1		$2.16
Cass Lake, MN 56633			
Weight: 0 lb 5.10 oz			
Estimated Delivery Date			
Mon 06/13/2022			
Certified Mail®			$3.75
Tracking #:			
70210950000160412680			
Return Receipt			$3.05
Tracking #:			
9590 9402 6413 0303 4516 22			
Total			$8.96
First-Class Mail® Large Envelope	1		$2.16
Onamia, MN 56359			
Weight: 0 lb 5.20 oz			
Estimated Delivery Date			
Mon 06/13/2022			
Certified Mail®			$3.75
Tracking #:			
70210950000160412697			
Return Receipt			$3.05
Tracking #:			
9590 9402 6413 0303 4516 15			
Total			$8.96
First-Class Mail® Large Envelope	1		$2.16
Cloquet, MN 55720			
Weight: 0 lb 5.20 oz			
Estimated Delivery Date			
Mon 06/13/2022			
Certified Mail®			$3.75
Tracking #:			
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Return Receipt $3.05
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APPENDIX Ic

THPO responses

Miami Tribe of Oklahoma

3410 P St. NW, Miami, OK 74354 ● P.O. Box 1326, Miami, OK 74355
Ph: (918) 541-1300 ● Fax: (918) 542-7260
www.miamination.com

Via email: benjamin.banks@stantec.com

June 16, 2022

Ben Banks RPA
Senior Archeologist
Stantec
8200 East 34th Street Circle North, Suite 1201
Wichita KS 67226-1363

Re: C. Reiss Coal Company, Superior Dock Rehabilitation, Douglas County, Wisconsin – Comments of the Miami Tribe of Oklahoma

Dear Mr. Banks:

Aya, kikwehsitoole – I show you respect. The Miami Tribe of Oklahoma, a federally recognized Indian tribe with a Constitution ratified in 1939 under the Oklahoma Indian Welfare Act of 1936, respectfully submits the following comments regarding C. Reiss Coal Company, Superior Dock Rehabilitation in Douglas County, Wisconsin.

The Miami Tribe offers no objection to the above-referenced project at this time, as we are not currently aware of existing documentation directly linking a specific Miami cultural or historic site to the project site. However, given the Miami Tribe's deep and enduring relationship to its historic lands and cultural property within present-day Wisconsin, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case, please contact me at 918-541-8966 or by email at THPO@miamination.com to initiate consultation.

The Miami Tribe accepts the invitation to serve as a consulting party to the proposed project. In my capacity as Tribal Historic Preservation Officer I am the point of contact for consultation.

Respectfully,

Diane Hunter

Diane Hunter
Tribal Historic Preservation Officer

LEECH LAKE BAND OF OJIBWE
Tribal Historic Preservation Office

Amy Burnette, Tribal Historic Preservation Officer
Sheila Gotchie, Office Manager

June 15, 2022

US DOT Maritime Administration
Attn: Barbara Voulgaris, Federal Preservation Officer
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: Proposed Superior Dock Rehabilitation Project
Douglas County, Wisconsin
LL THPO No. 22-284-NCRI

Dear Ms. Voulgaris,

Thank you for the opportunity to comment on the above referenced project. It has been reviewed pursuant to the responsibilities given the Tribal Historic Preservation Officer (THPO) by the National Historic Preservation Act of 1966, as amended in 1992, and the Procedures of the Advisory Council on Historic Preservation (38CFR800).

I have reviewed the documentation. After careful consideration of our records, I have determined that the Leech Lake Band of Ojibwe does not have any known recorded sites of religious or cultural importance in this area.

Should any human remains or suspected human remains be encountered, all work shall cease and the following personnel should be notified immediately: County Sheriff's Office and the Office of the State Archaeologist. If any human remains or culturally affiliated objects are inadvertently discovered, this will prompt the process to which the Band will become informed.

Please note the above determination does not "exempt" future projects from Section 106 review. In the event of any other tribe notifying us of concerns for a specific project, we may reenter into the consultation process.

You may contact me at (218) 335-2940 if you have questions regarding our review of this project. Please refer to the LL-THPO Number as stated above in all correspondence with this project.

Respectfully submitted,

Amy Burnette
Tribal Historic Preservation Officer

From: Michael LaRonge
To: Banks, Benjamin
Subject: RE: Section 106 consultation - C. Reiss Coal Company, Superior Dock Rehabilitation Project, Harbor Assistance Program
Date: Friday, July 15, 2022 12:10:04 PM

Good Morning Mr. Banks,

The Sokaogon Chippewa Community does not wish to consult on this project. The Tribe yields to the Ojibwe groups more proxmite to the project area.

Thank You,

Michael LaRonge, THPO
Sokaogon Chippewa Community
3051 Sand Lake Road
Crandon, Wisconsin 54520
Phone: (715) 478-6448
Email: Michael.LaRonge@SCC-nsn.gov

From: Banks, Benjamin <Benjamin.Banks@stantec.com>
Sent: Friday, July 15, 2022 9:39 AM
To: Michael LaRonge <michael.laronge@scc-nsn.gov>
Cc: Sutherland, Adam CTR (MARAD) <adam.sutherland.ctr@dot.gov>; Lennie, Brian <Brian.Lennie@stantec.com>; Waller, Hiedi <Hiedi.Waller@stantec.com>
Subject: FW: Section 106 consultation - C. Reiss Coal Company, Superior Dock Rehabilitation Project, Harbor Assistance Program

Good morning,
I am providing a follow-up email regarding the attached letter initiating Section 106 consultation for the C. Reiss Coal Company, Superior Dock Rehabilitation Project in the City of Superior, Douglas County, Wisconsin. This email is to follow-up on the email below and also on a hard copy of the attached letter that was received by your office on June 13, 2022. At this time, we have not received a response regarding this project, and I would like to inquire if your office plans to submit comments on this undertaking.

Regards,

Ben Banks RPA
Senior Archeologist

Mobile: 316 253-6414
benjamin.banks@stantec.com

From: Banks, Benjamin
Sent: Monday, June 13, 2022 11:13 AM
To: michael.laronge@scc-nsn.gov
Cc: Sutherland, Adam CTR (MARAD) <adam.sutherland.ctr@dot.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Lennie, Brian <Brian.Lennie@stantec.com>
Subject: Section 106 consultation - C. Reiss Coal Company, Superior Dock Rehabilitation Project, Harbor Assistance Program

Good morning,
On behalf of the U.S. Department of Transportation, Maritime Administration, I am submitting the attached letter initiating Section 106 consultation for the proposed C. Reiss Coal Company, Superior Dock Rehabilitation Project in the City of Superior, Douglas County, Wisconsin. This email is a follow-up to a hard copy version of the letter that was mailed to your office on June 9, 2022.

Please feel free to contact me if you have any questions or need for clarification as you review this information.

Regards,

Ben Banks RPA
Senior Archeologist

Direct: 316 634-6218
Mobile: 316 253-6414
benjamin.banks@stantec.com

Stantec
8200 East 34th Street Circle North Suite 1201
Wichita KS 67226-1363

APPENDIX J

Traffic Study

C. REISS COMPANY, PORT OF SUPERIOR, INFRASTRUCTURE IMPROVEMENTS PROJECT

Environmental Assessment Traffic Study

June 6, 2022

Prepared for:
C. Reiss Company LLC
111 West Mason Street
Green Bay, Wisconsin 54303

City of Superior Port Division
1316 North 14th Street
Superior, Wisconsin 54880

Prepared by:
Stantec Consulting Services Inc.
12080 Corporate Parkway, Suite 200
Mequon Wisconsin 53092

Project Number:
193707141

The conclusions in the Report titled C. Reiss Company, Port of Superior, Infrastructure Improvements Project are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from C. Reiss Company (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

Prepared by: Kellie L Reep
Signature

Kellie L. Reep
Kellie Reep, PE

Reviewed by: Samuel K Williams
Signature

Samuel K Williams
Sam Williams, PE

Approved by: Matt R. C
Signature

Matthew R Crim
Matt Crim, PE, PTOE

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1 Introduction

The C. Reiss Company LLC (C. Reiss) currently operates a dock in Duluth, Minnesota. This report evaluates the relocation of that port from Duluth, Minnesota to their vacant dock site in Superior, Wisconsin. The locations of the current dock site and the proposed dock site are shown in **Figure 1**.

Figure 1: Existing & Proposed Dock Site Locations

1.1 Project Background and Purpose

C. Reiss currently operates a stone and coal shipping marine facility in the Port of Duluth-Superior under the Duluth Seaway Port Authority (DSPA). The facility handles 650,000 tons of material per year – 550,000 tons of stone, 40,000 tons of coal, and 60,000 tons of road salt. The existing facility is subject to flooding events which result in the suspension of shipping operations for up to seven days at a time and immediate rail repairs due to the softened ground. As a result, C. Reiss is proposing to relocate their shipping operations to their existing dock on the Superior, Wisconsin side of the Saint Louis River which has been vacant for 30-years. As part of the proposed Project, C Reiss will update the Superior location to meet current regulatory standards.

The purpose of this report is to evaluate the impacts to adjacent roadways, rail lines, and shipping lanes as a result of this relocation and redevelopment project. This traffic study will explore existing and future conditions to ensure that impacts are mitigated appropriately. The amount of material processed at the Superior site is expected to be similar to that processed at the Duluth, Minnesota site, meaning this study does not assume an increase in traffic of any type at the proposed facility; only a redistribution of that traffic to facilities into and out of the Superior, Wisconsin site.

1.2 Study Area

The following intersections are included in the project study area:

- US 2 Bypass (Susquehanna Ave) @ US 2 WB On-Ramp
- US 2 @ Belknap St / Garfield Ave
- US 2 Bypass (Winter St) @ State Highway 35 (Tower Ave)
- US 2 Bypass (Winter St) @ Hammond Ave
- US 2 Bypass (Winter St) @ Site Driveway (new intersection)

Figure 2 shows a map of the study intersections

Figure 2: Study Intersections Map

1.2.1 STUDY AREA ROADWAYS

Winter Street is a minor arterial[1] that runs east-west from Susquehanna Avenue to Hill Avenue on the east side of Superior. It is a two-lane facility with a 2019 Average Annual Daily Traffic (AADT)[2] of 1,800 vehicles per day (vpd) near the study area. The speed limit on Winter Street is 25 miles per hour (mph) within the study area. It serves primarily industrial uses near the proposed site and crosses a major rail yard, which lies on its south side. It continues into the northern part of downtown Superior where it transitions to a more urban industrial and retail/office landscape.

Susquehanna Avenue is a minor arterial[1] that travels north-south between Winter Street and Wellington Street. It is a two-lane undivided roadway with a 2019 AADT[2] of 3,000 vpd near the study area. The speed limit along Susquehanna Avenue is 25 mph within the study area. Susquehanna Avenue primarily serves industrial land uses within the study area north of US 2 and transitions to a residential area south of US 2.

US 2 is a principal arterial[1] that connects Superior, Wisconsin to Duluth, Minnesota via Bong Bridge across the Saint Louis River. It is a four-lane divided roadway with a 2019 AADT[2] of 14,200 vpd in the study area. The speed limit along US 2 is 55 mph west of Susquehanna Avenue, 40 mph between Susquehanna Avenue and Belknap Street, and 30 mph east of Belknap Street. Grade-separated interchanges are present on either side of the Saint Louis River, but US 2 transitions to an at-grade corridor just east of the Susquehanna Avenue partial interchange, where it intersects Belknap Street at a roundabout.

State Highway 35 (Tower Avenue) is a principal arterial[1] that runs from the southern border of Wisconsin northward until it terminates at I-535 and US 53 in Superior. It is primarily a two-lane median-divided roadway with turn lanes, bike lanes, and wide sidewalks through the study area. The 2019 AADT[2] on the facility was 6,700 vpd and it operates at a 25 mph speed limit within the study area. The roadway runs through downtown Superior as Tower Avenue and serves as the main downtown artery, providing access to urban retail and office land uses through the study area.

Hammond Avenue is a minor arterial[1] that travels north-south from N 37th Street south of downtown Superior northward through downtown until it turns into I-535 just south of the Minnesota state line and the Saint Louis River. Hammond Avenue had a 2019 AADT[2] of 10,700 vpd and operates with a 30 mph speed limit within the study area. It is a two-lane roadway with a center turn lane and mainly provides access to residential homes on the south side of the city. It transitions briefly to a retail corridor before turning into I-535.

Belknap Street is a minor arterial[1] that runs east-west from the Saint Louis River to US 2 and runs with US 2 through downtown Superior. Belknap Street had a 2016 AADT[2] of 3,800 vpd and operates with a 25

---

[1] Wisconsin DOT Functional Classification Maps – Superior, https://wisconsindot.gov/Documents/projects/data-plan/plan-res/functional/urban/superior.pdf
[2] WisDOT Traffic Counts – TCMap https://wisdot.maps.arcgis.com/apps/webappviewer/index.html?id=2e12a4f051de4ea9bc865ec6393731f8

mph speed limit south of US 2. The portion of the facility that is located south and west of US 2 contains adjacent residential properties and eventually provides access to Billings Park at its west end.

Garfield Avenue is a local street (planned as a future collector)[1] that runs north-south between US 2 and Winter Street. There is no available AADT station on Garfield Avenue and the speed limit is 25 mph. The ½ mile stretch of roadway services several industrial businesses and is adjacent to the BNSF 17th Street Railyard.

1.3 Scope of Work

The scope of work included a review of the Benefit-Cost Analysis (BCA) prepared by Stantec for the 2021 MARAD Port Infrastructure Development Program Grant Application. This report was reviewed for information on the current site and future plans for the Superior site, including number of tons processed, typical daily traffic to and from the site, information on the shipping and locomotive modes of transportation, and other information. The BCA report is included in **Appendix A**.

Models were created using Synchro 11 for the Existing, Future No Build, and Future Build scenarios. Existing traffic signal phasing was able to be determined from Google StreetView© imagery. Once the models were developed and existing and future projected traffic was entered in, the operations were reviewed to determine if any improvements were required to mitigate the additional traffic generated in the Superior area by the proposed site.

1.4 Study Analysis Period

The base year for this study was 2022, which is when traffic counts were collected. The 20-year design year utilized was 2042. The design year reflects the full build-out for the site and allowed for evaluation of background (non-site related) impacts beyond when the port transition is made. Because the site operates from 7:00 AM to 3:00 PM, analyses were performed for the AM and Mid-day peak hours.

2 Traffic Volumes

2.1 Data Collection

In order to determine existing roadway demand and capacity constraints, existing traffic volume data collection was necessary. In addition, a methodology was required for estimating future design year traffic volumes to determine any future capacity requirements.

2.1.1 TRAFFIC COUNT METHODOLOGY

As previously noted, the proposed site operates from 7:00 AM to 3:00 PM; therefore, a traditional PM count is not appropriate in this case. For this project, AM and Mid-day peak periods were evaluated. Turning movement counts were collected at the following four (4) intersections on Tuesday, May 18th, 2022 from 6:30 AM to 9:30 AM and from 11:00 AM to 2:00 PM:

- US 2 Bypass (Susquehanna Ave) @ US 2 WB On-Ramp
- US 2 @ Belknap St / Garfield Ave
- US 2 Bypass (Winter St) @ State Highway 35 (Tower Ave)
- US 2 Bypass (Winter St) @ Hammond Ave

Traffic counts indicated that the AM and Mid-day peak hours for the majority of the study area intersections were 7:15 AM – 8:15 AM and 11:30 AM – 12:30 PM. For consistency, this peak hour was used for all of the study intersections. These counts were used as the 2022 base year volumes for the study intersections. The raw intersection turning movement counts are included in **Appendix B**.

Traffic counts were also collected at the existing site driveway in Duluth, Minnesota on Thursday, May 26, 2022 from 11:00 AM to 1:00 PM and on Tuesday, May 31, 2022 from 6:30 AM to 9:00 AM. These were used to determine the typical number of trucks entering and exiting the site during the peak hours. The peak hours at the site driveway were observed to be from 6:30 AM to 7:30 AM for the AM peak and from 11:00 AM to 12:00 PM for the Mid-day peak. Although these peak hours do not perfectly line up with the peak hours observed at the study area intersections, the peak site volumes were used for the trip generation at the proposed site driveway to provide a more conservative analysis. The site trip generation is shown in **Table 1**. The raw driveway counts are included in **Appendix B**.

Table 1: C. Reiss Site Trip Generation

	Entering		Exiting		Total
	# Cars	# Trucks	# Cars	# Trucks	
AM Peak	1	3	0	3	**7**
Mid-Day Peak	1	1	2	2	**6**

2.1.2 VOLUME FORECASTING METHODOLOGY

The 20-year design year for the traffic study was identified as 2042. Historical WisDOT AADT[3] data for roadways within the study area show short-term (generally from 2016 to present) annual growth rates ranging from -0.1 percent to +6.7 percent. Long-term growth rates (generally 2010 to present) ranged from -2.0 percent to +4.1 percent. The rates within the study area as a whole average to approximately 2 percent per year, with some of the higher values occurring on Route 2 or access points to Route 2.

[3] WisDOT Traffic Count Map (TCMap), Wisconsin Department of Transportation, 2022, https://wisdot.maps.arcgis.com/apps/webappviewer/index.html?id=2e12a4f051de4ea9bc865ec6393731f8

2 Traffic Volumes

A review of census data for the city of Superior[4] showed that the population decreased between 2010 and 2020 by approximately 2 percent, or 0.2 percent per year. Census data shows that the Douglas County population[5] stayed nearly constant between 2010 and 2020.

Based on this information, a 1.5 percent annual growth rate was assumed. This growth rate was used in developing the future year volumes for all 2042 scenarios.

Figure 3 shows the existing (2022) turning movement volumes without the proposed project at the study intersections. Due to the presence of driveway or other roadways in between count locations, existing traffic volumes were not balanced between intersections.

Site traffic was distributed through the network using engineering judgment combined with data provided by C. Reiss regarding where their truck traffic primarily travels to and from within the greater Duluth-Superior area. The overall distribution percentages for the existing Duluth site were re-applied for the proposed Superior site. The distributions used are as follows:

- 50 percent to/from the west on US 2
- 20 percent to/from the south on State Route 35
- 20 percent to/from the north on I-535
- 10 percent to/from the east on US 53

Figure 4 shows the detailed distributions as they were applied to the study area network.

Site trips were applied to the network by combining the trip generation values presented in **Table 1** with the distributions shown in **Figure 4**. It should be noted that by simply multiplying the distribution percentage by the estimated trip generation, some values ended up being 0. In these cases, the site trips were rounded up to 1 and the upstream/downstream values were adjusted to ensure the site trips within the network balanced. Making this adjustment resulted in the number of trips at the site driveway being slightly higher than what is shown in **Table 1**, which provides a more conservative analysis.

Figures 5 and 6 show the future 2042 No Build volumes, projected site trips, and resulting future 2042 Build volumes for the AM and Mid-day peak periods, respectively.

---

[4] Quick Facts: Superior city, Wisconsin, United States Census Bureau, July 1, 2021, https://www.census.gov/quickfacts/superiorcitywisconsin
[5] Quick Facts: Douglas County, Wisconsin, United States Census Bureau, July 1, 2021, https://www.census.gov/quickfacts/fact/table/douglascountywisconsin/PST045221

2 Traffic Volumes

Figure 3: Existing AM and Mid-day Peak Hour Volumes

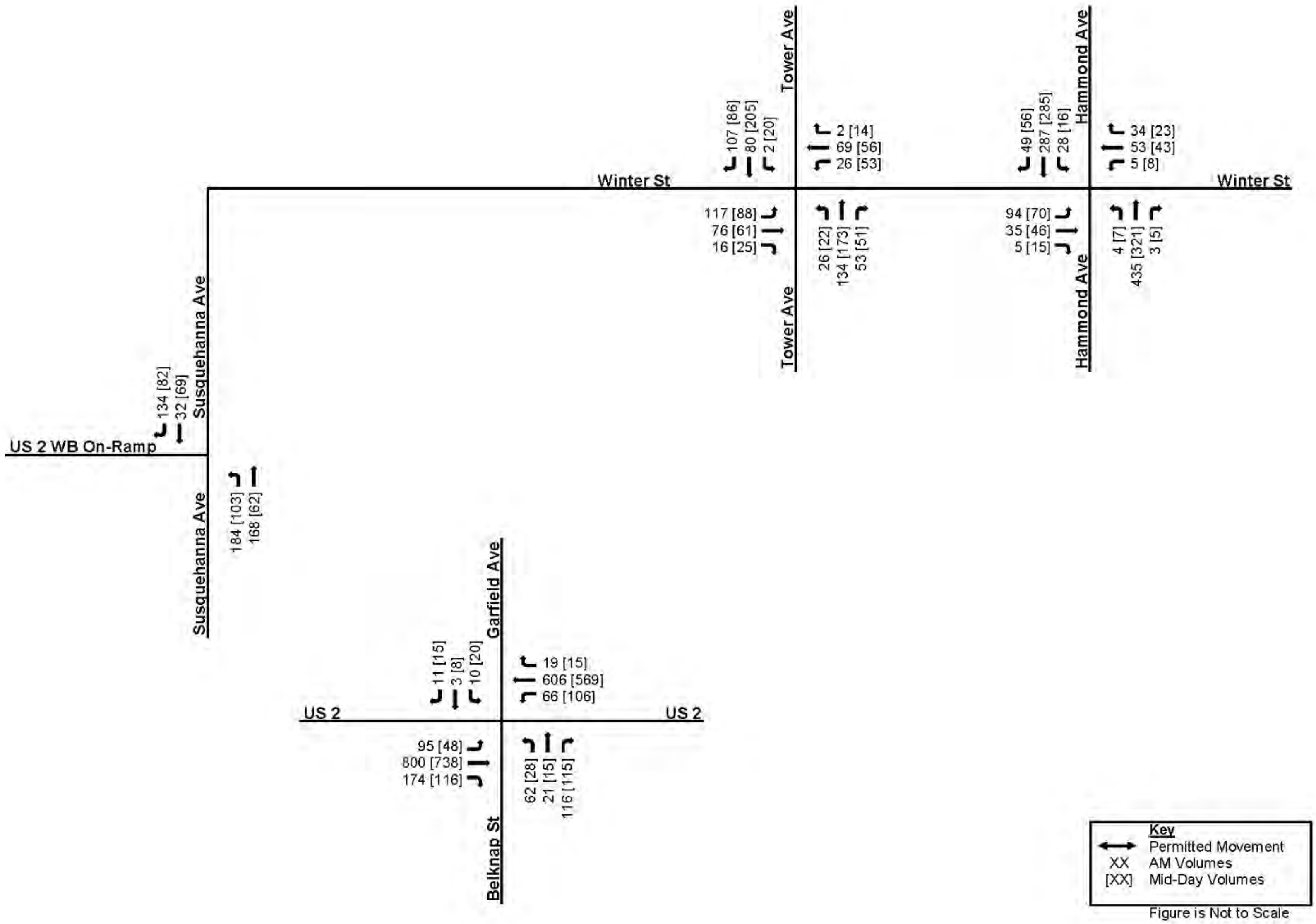


Figure 4: Site Trip Distributions

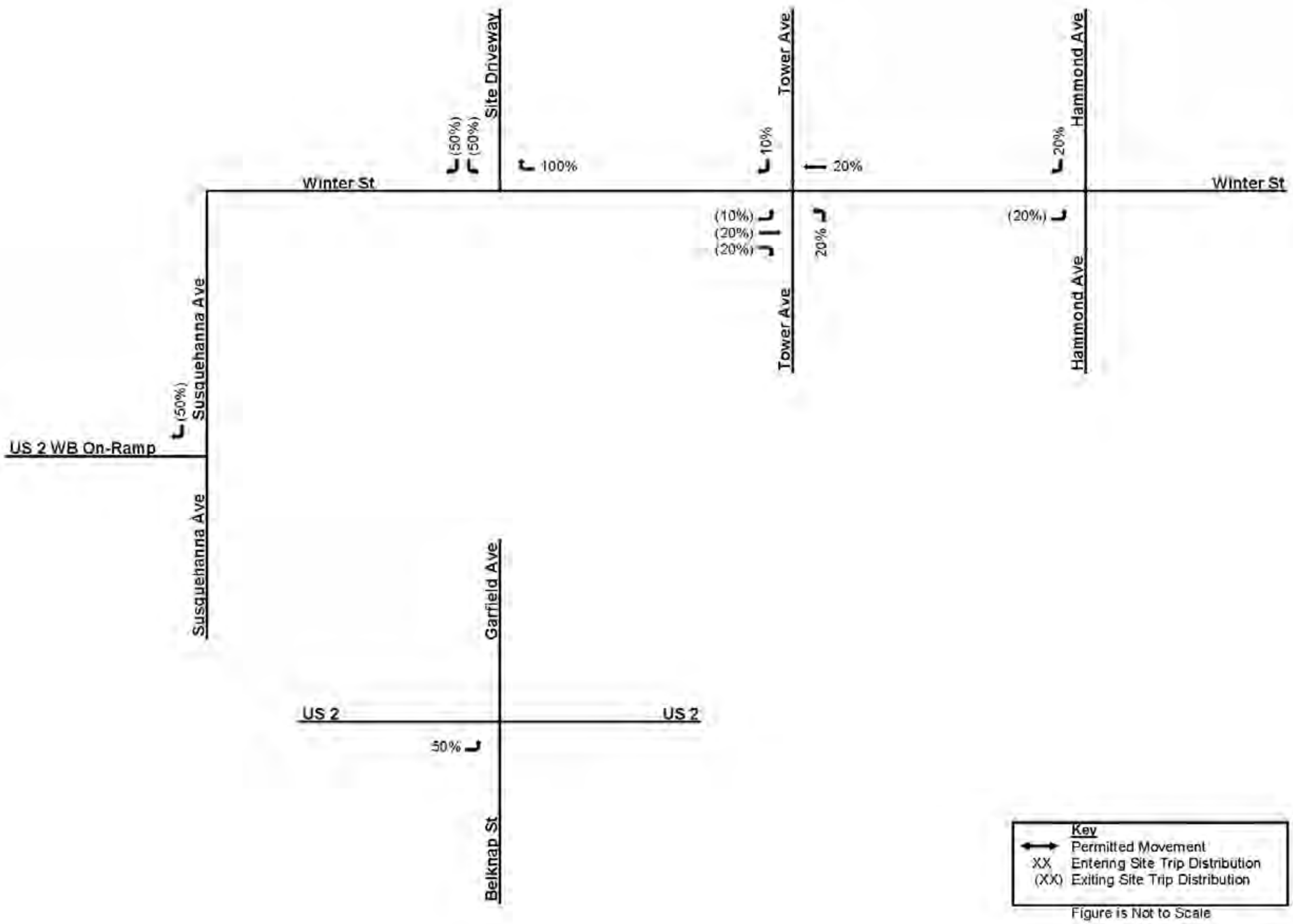


Figure 5: 2042 No Build and Build AM Peak Hour Volumes

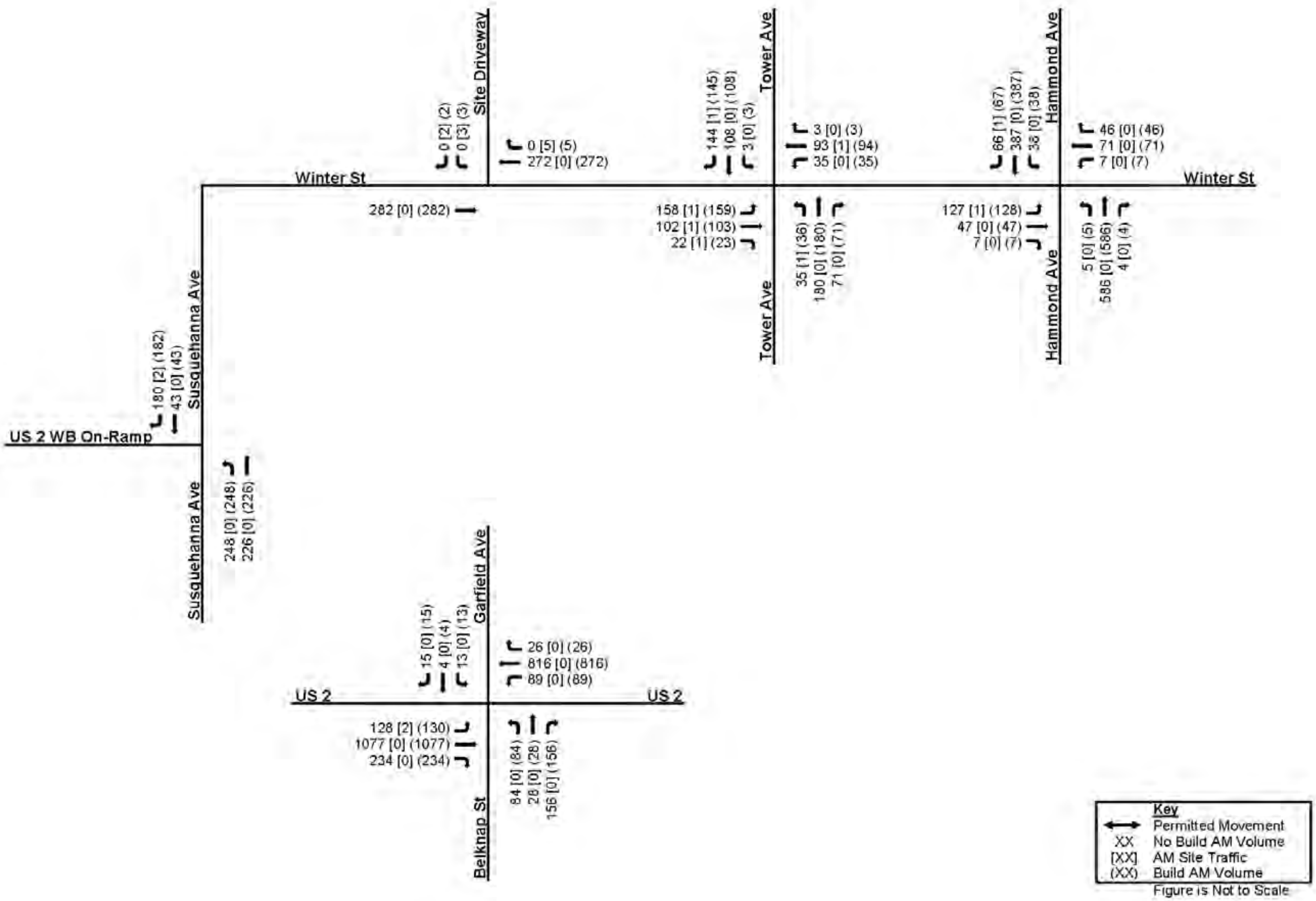
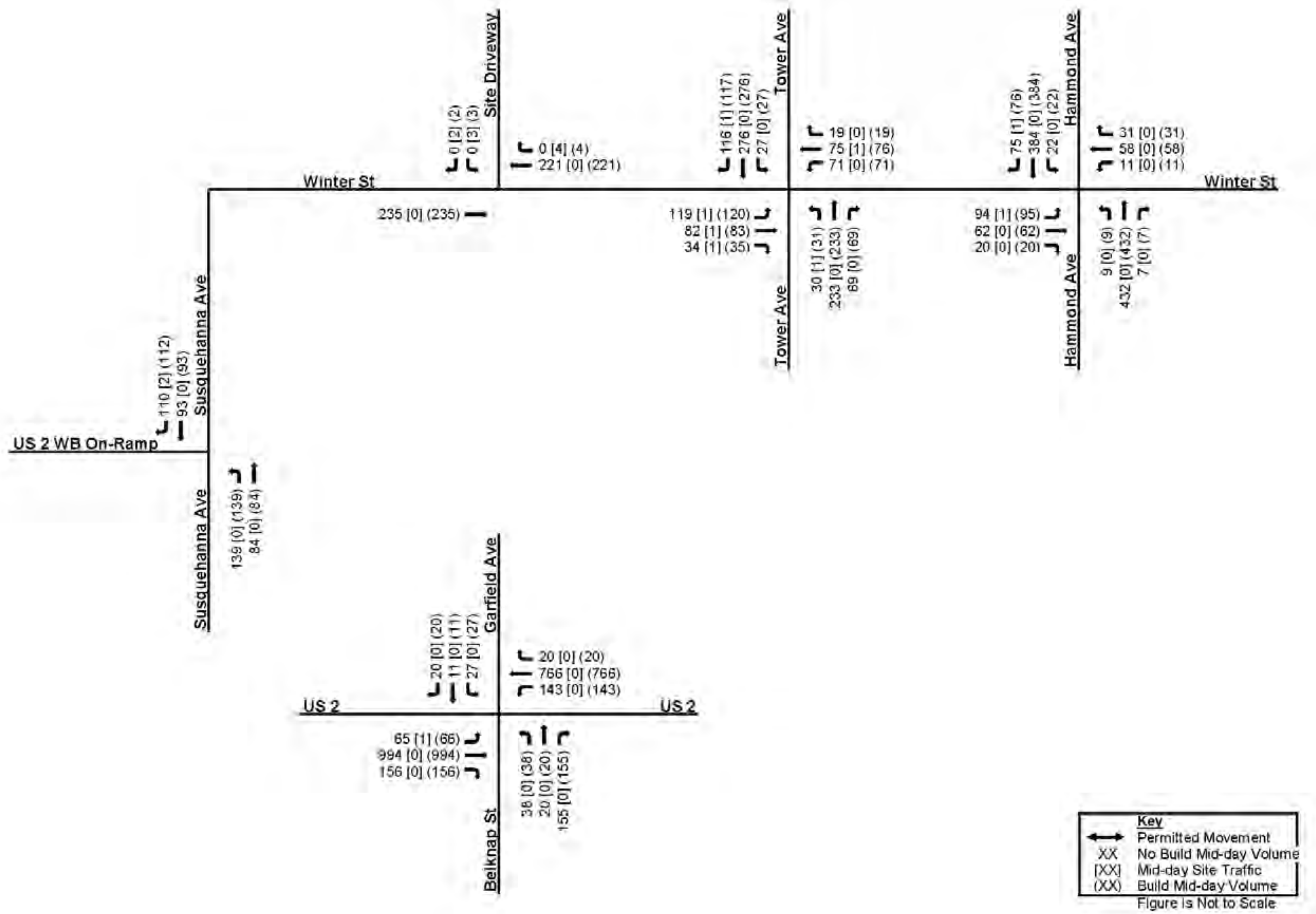


Figure 6: 2042 No Build and Build Mid-day Peak Hour Volumes



3 Operational Analysis

3.1 Purpose and Methodology

Operational analyses were performed to evaluate existing conditions and to determine future capacity requirements. Traffic analysis models were developed to evaluate the vehicular travel mode. These models generated values such as average intersection delay and level of service (LOS), which were used to compare the various alternatives. The models informed decisions such as the length of existing and proposed turn lanes. Rail and maritime travel modes were evaluated on a qualitative basis based on available data.

3.2 Vehicular Mode

Synchro 11 was used to develop the analysis models. Synchro is a microscopic traffic analysis software program which analyzes traffic operations based on inputs such as number of lanes, volume, speed, signal timing, and other metrics. Synchro was chosen as the preferred software based on its capabilities and the belief that it would adequately perform the level of analysis required for this study. Synchro is also widely accepted in the traffic engineering industry for this type of analysis.

Detailed signal timings were unavailable, but the signal phasing at the two signalized intersections (Winter Street at Tower Avenue and Winter Street at Hammond Avenue) was determined based on Google StreetView© imagery. Because the area surrounding the site is generally industrial in nature, resulting in higher-than-normal truck percentages, the observed truck percentages were assigned on a per-movement basis, based on the traffic counts collected in May 2022. The truck percentages on the movements entering and exiting the site in the Build scenario were calculated based on the site driveway counts collected in Duluth, Minnesota. It is not expected that the truck percentages will vary significantly in the future, so the existing truck percentages were carried through the 2042 design year scenarios.

The base year (2022) and design year (2042) were analyzed to determine the average delay for each movement and overall intersection in the study area. Based on Highway Capacity Manual (HCM) methodology, a level of service (LOS) is assigned to each delay for the AM and PM peak hours. Levels of service range from A (representing minimal delay) to F (very poor operations and excessive delay). **Tables 2 and 3** show the HCM LOS criteria for unsignalized and signalized intersections, respectively.

Table 2: Unsignalized Intersection LOS Criteria[6]

Level of Service (LOS)	Unsignalized Intersection Control Delay (seconds / vehicle)
A	≤ 10
B	>10 and ≤ 15
C	>15 and ≤ 25
D	>25 and ≤ 35
E	>35 and ≤ 50
F	>50

Table 3: Signalized Intersection LOS Criteria[6]

Level of Service (LOS)	Signalized Intersection Control Delay (seconds / vehicle)
A	≤ 10.0
B	>10.0 and ≤ 20.0
C	>20.0 and ≤ 35.0
D	>35.0 and ≤ 55.0
E	>55.0 and ≤ 80.0
F	>80.0

[6] ***HCM 7: Highway Capacity Manual***. Washington D.C.: Transportation Research Board, 2022.

3.2.1 EXISTING (2022) CONDITIONS

The model shows that all of the study intersections operate at LOS C or better in both peak periods. Additionally, no intersection approach currently operates at worse than LOS D in either peak hour. The simulation also indicates that there are no existing queuing concerns at any of the study intersections. **Table 4** shows a summary of the overall intersection levels of service and delays. The full Synchro results can be found in **Appendix C**. The Synchro files are included electronically in **Appendix D.**

Table 4: Existing (2022) Delay and LOS Summary

Intersection	Intersection Type	Intersection LOS (Delay [sec])	
		AM Peak	Mid-Day Peak
Susquehanna Ave @ US 2 WB On-Ramp	Unsignalized	A (1.3)*	A (0.7)*
US 2 @ Belknap St	Roundabout	A (6.7)	A (6.5)
Winter St @ Tower Ave	Signalized	C (20.2)	B (18.0)
Winter St @ Hammond Ave	Signalized	B (17.5)	B (15.0)

* HCM methodology does not provide an overall LOS and delay for unsignalized intersections. Therefore, the delay and LOS shown are for the minor movement, which in this case is the northbound left-turn

3.2.2 FUTURE NO BUILD (2042) CONDITIONS

The No Build scenario assumes that the C. Reiss site has not relocated to Superior by 2042. The model shows that the intersection delays increase slightly compared to the existing scenario. All intersection levels of service remain the same except for the AM peak hour at Winter Street and Hammond Street, which goes from an LOS B in 2022 to an LOS C in 2042. All of the study intersections continue to operate at LOS C or better in both peak periods. The simulation also indicates that there are not expected to be any queuing concerns at the study intersections. **Table 5** shows a summary of the overall intersection levels of service and delays. The full Synchro results can be found in **Appendix C**. The Synchro files are included electronically in **Appendix D.**

Table 5: Future No Build (2042) Delay and LOS Summary

Intersection	Intersection Type	Intersection LOS (Delay [sec])	
		AM Peak	Mid-Day Peak
Susquehanna Ave @ US 2 WB On-Ramp	Unsignalized	A (2.1)*	A (1.0)*
US 2 @ Belknap St	Roundabout	A (9.7)	A (9.1)
Winter St @ Tower Ave	Signalized	C (21.1)	B (19.7)
Winter St @ Hammond Ave	Signalized	C (20.3)	B (16.1)

* HCM methodology does not provide an overall LOS and delay for unsignalized intersections. Therefore, the delay and LOS shown are for the minor movement, which in this case is the northbound left-turn

3.2.3 FUTURE BUILD (2042) CONDITIONS

The Build scenario assumes that the C. Reiss site has been relocated to Superior by 2042. The model shows that the intersection delays remain very similar to the 2042 No Build scenario, with a couple of intersections increasing in delay by no more than 0.1 second in the Build condition. All of the study intersections are expected to continue to operate at LOS C or better in both peak periods with the Superior C. Reiss site in place. The simulation also indicates that there are not expected to be any queuing concerns at the study intersections. **Table 6** shows a summary of the overall intersection levels of service and delays. The full Synchro results can be found in **Appendix C**. The Synchro files are included electronically in **Appendix D.**

Table 6: Future Build (2042) Delay and LOS Summary

Intersection	Intersection Type	Intersection LOS (Delay [sec])	
		AM Peak	Mid-Day Peak
Susquehanna Ave @ US 2 WB On-Ramp	Unsignalized	A (2.1)*	A (1.0)*
US 2 @ Belknap St	Roundabout	A (9.8)	A (9.1)
Winter St @ Tower Ave	Signalized	C (21.1)	B (19.7)
Winter St @ Hammond Ave	Signalized	C (20.4)	B (16.1)
Winter St @ Site Driveway	Stop-Controlled	B (13.8)**	B (11.6)**

* HCM methodology does not provide an overall LOS and delay for unsignalized intersections. Therefore, the delay and LOS shown are for the minor movement, which in this case is the northbound left-turn

** HCM methodology does not provide an overall LOS and delay for unsignalized intersections. Therefore, the delay and LOS shown are for the minor movement, which in this case is the southbound stop-controlled approach

3.2.4 VEHICULAR OPERATIONS ANALYSIS SUMMARY AND RECOMMENDATIONS

The analysis presented above indicates that the proposed relocation of the C. Reiss site from Duluth, Minnesota to Superior, Wisconsin will have a very minimal impact on the surrounding roadway network. The site currently generates less than 10 vehicles per hour in the peak hours and the volume is not expected to grow after the site relocates to its new location. Therefore, no roadway improvements are recommended as part of this study.

3.3 Locomotive

The existing C. Reiss facility is connected to a Burlington Northern – Santa Fe (BNSF) rail yard. The proposed facility in Superior, Wisconsin will also connect to an existing BNSF rail line. Trains currently travel from the south through Superior and traverse the Grassy Point Railroad Bridge to access the facility in Duluth. The BCA notes that the travel distance via rail to the proposed facility is approximately 3 miles less than the distance to reach the existing port. A map of the Duluth-Superior Rail Lines from the Duluth-Superior Metropolitan Interstate Council is included in **Appendix E**.

According to the BCA, the existing C. Reiss facility receives 185 trains per year, with an average of about 25 cars per train. As previously noted, it is expected that the port will continue to process 650,000 tons of material per year; therefore, no change in rail traffic compared to that currently using the existing port is anticipated.

3.4 Maritime

As previously mentioned, the proposed facility in Superior, Wisconsin is not expected to process additional material compared to the existing facility. Therefore, the existing shipping traffic is not anticipated to increase; rather, ships would still continue down the Saint Louis River, but navigate to the Superior port on the east side of the river rather than the Duluth port on the west side of the river. According to the BCA, the travel distance required for ships would be reduced by approximately 2.5 miles with the relocation of the port to Superior. The BCA also notes that there are 29 ships per year that travel to and from the C. Reiss port in Duluth. C. Reiss plans to dredge the proposed facility in Superior deeper than the existing facility in Duluth. The additional depth will allow for larger ships to use the port, creating a potential for up to 3,000 tons of additional capacity on each ship. This would reduce the number of necessary vessels by up to 2 ships per year. A conservative estimate would be to assume the number of ships will not change from what is currently being accommodated by the existing facility. Regardless, the number of ships entering and exiting the Superior port is not expected to increase as a result of the move from Duluth.

4 Summary and Conclusions

The analysis presented in this report shows that the proposed relocation of the C. Reiss site from Duluth, Minnesota to Superior, Wisconsin will have a very minimal impact on the surrounding transportation network. The vehicular analysis indicates that intersection delays with the C. Reiss site in place will increase by no more than 0.1 second as compared to the No Build scenario. Additionally, all study intersections are expected to continue to operate at LOS C or better through the 2042 design year.

The locomotive and maritime modes of transportation are also expected to be minimally impacted by the site relocation. The rail route is shorter to the Superior facility than it is to the existing Duluth port location, and shipping traffic has the potential to be reduced due to the increased tonnage capacity at the Superior facility.

APPENDIX A: BCA REPORT

Appendix

Benefit-Cost Analysis

2021 MARAD Port Infrastructure Development Program Grant Application

Prepared for:

Superior Port and C. Reiss Company Infrastructure Improvements

Prepared by:

Adam Capets EIT, Stantec Consulting

July 30, 2021

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1.0 INTRODUCTION

The C. Reiss Coal Company (C. Reiss) currently operates at a dock facility in Duluth, Minnesota. They are considering the rehabilitation of a dock in Superior, Wisconsin and moving operations there. The locations of the current dock site and the proposed dock site are shown in **Figure 1**. Stantec completed a benefit-cost analysis to determine if the relocation to the proposed facility is economically justified. The analysis followed USDOT's guidance document *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*[1].

Figure 1: Location Map, Superior WI/Duluth MN

1.1 BACKGROUND & PURPOSE

C. Reiss currently operates a stone and coal shipping marine facility in the Port of Duluth-Superior under the Duluth Seaway Port Authority (DSPA). The facility handles 650,000 tons of material per year – 550,000 tons of stone, 40,000 tons of coal, and 60,000 tons of road salt. The terminal's largest customer, American Crystal Sugar, receives 500,000 tons of stone per year by rail from C. Reiss. In July 2022, DSPA will increase the rail switching fees at the existing marine terminal by approximately $500,000 per year which is passed along to the customers that use the facility. The increase in fees at the existing facility risks the loss of customers such as American Crystal Sugar, who may switch to

[1] (*Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, U.S. Department of Transportation, 2021)

trucking as the preferred method of transport. Additionally, the existing facility is subject to an increase in flooding events, resulting in suspension of shipping operations for up to seven days at a time and immediate rail repairs due to the softened ground. As a result, C. Reiss is considering relocating their shipping operations to a new dock on the Superior side of the Saint Louis River.

The objective of the Benefit-Cost Analysis is to account for the benefits and costs of the relocation over an analysis period of 20-years (2023 to 2042). The net present value and benefit-cost ratio determine whether relocating shipping operations would balance competing needs and be economically viable.

1.2 SCOPE

Two alternatives were explored in the Benefit-Cost Analysis, including a Baseline Alternative in which the existing facility remains at its current location. No improvements will be made over the 20-year analysis period other than routine operation and maintenance costs to maintain serviceability of the existing facility. The Build Alternative consists of rehabilitating the proposed new marine terminal site and moving shipping operations to the new location.

The scope of the Benefit-Cost Analysis involved the following tasks:

1. Gathering information on operation and maintenance costs and other data at the existing facility
2. Determining benefits of relocating operations to the proposed facility
3. Economic analysis of alternatives to determine cost-effectiveness

1.3 BASELINE & BUILD ALTERNATIVE

Under the Baseline Alternative, C. Reiss will continue shipping operations at the existing facility in Duluth. The facility is located on the Saint Louis River upstream of the Bong Bridge (U.S. Route 2) and Grassy Point Railroad Bridge. The facility is connected to a Burlington Northern – Santa Fe (BNSF) rail yard. Routine maintenance and rehabilitation to the existing facility will continue. A $350,000 repair was made in 2019 to the primary berth dock bulkhead wall. Despite the $500,000 annual switching fee from the DSPA, for the purposes of the benefit-cost analysis it was assumed that operations will continue normally at 650,000 tons of material per year. Operations will occur 246 days per year, seven days fewer than the typical 253-day per year operating schedule due to flooding at the facility.

Under the Build Alternative, C. Reiss will sell the existing facility relocate shipping operations to the proposed facility in Superior. The proposed facility is located on the mouth of the Saint Louis River, approximately 2.5 miles northeast of the existing facility. The proposed facility will connect rail service to a BNSF rail line. The distance to travel to the proposed facility by rail is approximately 3.0 miles less than the distance to reach the existing marine facility. The proposed facility will be substantially rehabilitated. 2,500 feet of bulkhead dock wall repairs will be completed, 48,000 cubic yards of capital dredging will take place to deepen the berth, port equipment will be installed, and various landside port improvements will be made. Scheduled rail and port maintenance projects at the existing facility will not be required at the proposed facility due to these improvements. C. Reiss expects to operate normally at 650,000 tons of material per year. Operations will occur normally at 253 days per year and will be able to operate during high water events. Construction is anticipated to be complete in 2022.

1.4 PROJECT FUNDING

C. Reiss is requesting federal grant funding under the 2021 MARAD Port Infrastructure Development Program (PIDP) Grant Application totaling **$8,368,000**. The remaining funding comes from C. Reiss, the U.S. Army Corps of Engineers (USACE), and the 2020/2021 WisDOT Harbor Assistance Program (HAP). See **Table 1** for project funding sources.

Table 1: Project Funding Sources

Funding Sources	Amount	Status	Purpose
Private – C. Reiss	$3,963,000 (23%)	Committed	Construction, Rehabilitation
Federal – USACE	$2,016,000 (12%)	Committed	Dredging/Capping
State – WisDOT HAP	$3,000,000 (17%)	$1.5M Granted (2020), $1.5M Requested (2021)	Construction, Rehabilitation
Federal – MARAD PIDP	$8,368,000 (48%)	Requested	Construction, Rehabilitation
Total Project Funding	**$17,347,000**		

2.0 METHODOLOGY & ASSUMPTIONS

The Benefit-Cost Analysis assesses the differences of potential benefits and costs between the Baseline and Build Alternatives. The methodology and assumptions are summarized below:

1. The analysis timeframe was assumed to be 20-years, from 2023 to 2042. The number of days in the analysis was assumed to be 253 to reflect the days C. Reiss operates.
2. The analysis assumed that the Build Alternative would be constructed in a single year (2022) with the first full year of benefits of operations at the proposed facility being 2023.
3. The discount rate was assumed to be 7% (3% for carbon dioxide (CO_2) emissions benefits)[2] as outlined in the USDOT Benefit-Cost Analysis guidance document. All costs and benefits were discounted to 2022.
4. The benefit-cost ratio was calculated by dividing the sum of discounted benefits by the sum of discounted costs. Since the project is proposing funding from a discretionary grant program, the denominator of the benefit-cost ratio only includes initial capital costs. Other costs are added/subtracted to the numerator[2].
5. The main benefit and cost components analyzed included:
    a. Shipping Emissions Reduction Benefits
    b. Locomotive Travel Distance Savings
    c. Truck Travel Reduction Benefits
    d. Initial Capital Costs and Residual Capital Value
    e. Maintenance Project Cost Savings
6. Other benefits not quantified in the analysis included:
    a. Building climate resilient infrastructure unaffected by flooding
    b. Removal of contaminated underwater sediment
    c. Unquantified truck travel reduction benefits
    d. Rehabilitating and operating in a formerly vacant dock

To calculate the monetary values of each benefit and cost, calculation input values were assumed. **Table 2** contains a complete list of parameters and their associated values used in the Benefit-Cost Analysis.

[2] (*Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, U.S. Department of Transportation, 2021)

Table 2: Benefit-Cost Analysis Calculation Input Values

Parameters	Value	Source
Discount Rate (Rate for CO_2 emissions benefits)	7% (3%)[3]	USDOT – Benefit-Cost Analysis Guidance for Discretionary Grant Programs
Inflation Rate (from 2014 & 1994)	1.6%, 1.9%[3]	Calculated from USDOT – Benefit-Cost Analysis Guidance for Discretionary Grant
Benefit-Cost Analysis Period	20 years[3]	USDOT – Benefit-Cost Analysis Guidance for Discretionary Grant Programs
Number of Normal Operating Days	253 days / year	C. Reiss
Number of Flooding Days (total operating days)	3 – 7 days / year	C. Reiss
Road distance between Material Origin/Destination (Stoneport, MI to Crookston, MN)	750 miles	C. Reiss, Google Earth
Distance between Origin to Port (by ship) & Port to Destination (by rail)	490 miles, 250 miles	C. Reiss, Google Earth
Shipping Distance Travel Reduction	2.5 miles	Google Earth
Locomotive Distance Travel Reduction	3.0 miles	Google Earth
Current Capacity of Existing Facility	650,000 tons of material / year	C. Reiss
American Crystal Sugar Annual Cargo	500,000 tons / year	C. Reiss
Number of Ships for Operations at Existing Facility	29 ships (at max 23k tons/ship)	C. Reiss
Number of Ships reduced for American Crystal Sugar Operations at Proposed Facility	2 ships (3k tons/ship increase)	C. Reiss
Rates of Shipping Vessel Emissions	See Table 4[4]	Dr. James Corbett et al. – Emissions Analysis of Freight Transport Comparing Land-Side and Water-Side Short-Sea Routes
Damage Costs for Emissions Monetized Values (per metric ton)	Refer to Table A-6 in USDOT guidance[5]	USDOT – Benefit-Cost Analysis Guidance for Discretionary Grant Programs
Annual Number of Trains Entering Facility	185 trains at 25 cars / train	C. Reiss
Empty Weight of Hopper Train Car	61,800 pounds[6]	BNSF Railway

[3] (*Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, U.S. Department of Transportation, 2021)
[4] (*Emissions Analysis of Freight Transport Comparing Land-Side and Water-Side Short-Sea Routes*, Corbett et al., 2007)
[5] (*Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, U.S. Department of Transportation, 2021)
[6] (*100 Ton Open Top Hopper – ATSF 179800-179964*, BNSF Railway, 2021)

Locomotive Freight Transport External Costs* (Pavement damage only & Total costs)	\$0.0005 – \$0.0006 / ton-mile (2014), \$0.003 – \$0.0082 / ton-mile (2014)[7]	David Austin – Congressional Budget Office – Pricing Freight Transport to Account for External Costs
Number of Trucks Required Annually for American Crystal Sugar Operations	20,408 trucks (at 24.5 tons/truck)	C. Reiss
Freight Transport Pavement Damage Costs* (60 kip 4-axle S.U. Truck, Rural Interstate)	\$0.056 / mile (1994)[8]	FHWA – Addendum to the 1997 Federal Highway Cost Allocation Study Final Report
Freight Transport User Fees* (25 – 50 kip S.U. Truck)	\$0.0388 / mile (1994)[8]	FHWA – Addendum to the 1997 Federal Highway Cost Allocation Study Final Report
Total Project Cost for Proposed Facility	\$17,347,000	Krech Ojard & Associates, Inc, J.F. Brennan Company, Inc
Service Life for Dock Wall Replacement	50 years	Stantec
Existing Facility Maintenance Project Costs	\$1.4M for rail improvements initially, \$7.0M for dock wall and portside repairs over 10 years	C. Reiss

*USDOT recommended monetary values are not available

3.0 ECONOMIC EVALUATION

The net present value of benefits and costs were determined by converting benefits and costs to monetary values that can be evaluated over the Benefit-Cost Analysis period and discounted. Economic parameters for Benefit-Cost Analysis of benefits and costs are outlined in **Table 3**.

Table 3: Overall Economic Parameters

Variable	Assumed Value
Analysis Period	20 years
Base Year	2022
Discount Rate[5]	7% (3% for CO_2 reduction)

[7] (*Pricing Freight Transport to Account for External Costs*, Austin, 2015)
[8] (*Addendum to the 1997 Federal Highway Cost Allocation Study Final Report*, Federal Highway Administration, 2000)

3.1 ECONOMIC EVALUATION OF BENEFITS

3.1.1 Shipping Emissions Reduction Benefit

The proposed facility will be dredged deeper than the existing facility and will be able to accommodate vessels with 2 feet of additional draft. This allows for an increase of 3,000 tons of capacity on each ship, thus reducing the number of vessels required for American Crystal Sugar by two per year. As a result, a reduction in emissions produced by shipping is experienced. Additionally, the 27 remaining ships that travel to the proposed facility will travel 2.5 fewer miles from the entrance of the port each trip, further reducing emissions. The present value of the reduced shipping emissions benefits was calculated by the following steps:

1. Multiply the shipping distance between the origin and port (490 miles) by the number of ships reduced annually. Multiply the distance from the port entrance reduced (2.5 miles) by the number ships expected at the proposed facility annually. Sum the values to obtain annual ship-miles saved.

2. Multiply the annual ship-miles saved by the rate of shipping vessel emissions (see Table 4) and the monetized value for emissions damage costs. Repeat with each pollutant and sum the resultant shipping emissions benefit.

3. Calculate the discounted annual benefit by discounting the shipping emissions benefit each year using the discount rate of 7% for nitrogen oxides (NO_x) and sulfur dioxide (SO_2) pollutants. USDOT Benefit-Cost Analysis guidance states that due to the long-lasting impacts of CO_2 emissions, discounting reductions in CO_2 can be performed at a rate of 3%.

4. Sum the total discounted benefits to obtain the present value of shipping emissions reduction benefits to be used in the Benefit-Cost ratio calculation.

Table 4: Rates of Shipping Vessel Emissions

Pollutant	Rate of Emissions (grams/ship-mile)[9]
Nitrogen Oxides (NO_x)	39,626
Sulfur Dioxide (SO_2)	19,559
Carbon Dioxide (CO_2)	1,464,151

The present value of shipping emissions reduction benefits was determined to be **$19,257,259**. See **Table 5** for a yearly breakdown of the benefits of shipping emissions reduction.

Table 5: Shipping Emissions Reduction Benefits

Year		Ship Miles Saved	NO_x Value (/metric ton)	SO_2 Value (/metric ton	CO_2 Value (/metric ton	Ship Emissions (NO_x/SO_2)	Ship Emissions (CO_2)	Disc. Factor (NO_x/ SO_2)	Disc. Factor (CO_2)	Disc. Total Benefits
0	2022	0	$16,100	$42,100	$53	$0	$0	1.000	1.000	$0
1	2023	1,047.5	$16,400	$43,000	$54	$1,561,721	$82,820	0.935	0.971	$1,539,960
2	2024	1,047.5	$16,600	$43,900	$55	$1,588,462	$84,353	0.873	0.943	$1,466,936

[9] (*Emissions Analysis of Freight Transport Comparing Land-Side and Water-Side Short-Sea Routes*, Corbett et al., 2007)

3	2025	1,047.5	$16,800	$44,900	$56	$1,617,252	$85,887	0.816	0.915	$1,398,758
4	2026	1,047.5	$17,000	$45,500	$57	$1,637,846	$87,421	0.763	0.888	$1,327,177
5	2027	1,047.5	$17,300	$46,200	$58	$1,664,640	$88,954	0.713	0.863	$1,263,599
6	2028	1,047.5	$17,500	$46,900	$59	$1,687,284	$90,488	0.666	0.837	$1,200,091
7	2029	1,047.5	$17,700	$47,600	$60	$1,709,927	$92,022	0.623	0.813	$1,139,679
8	2030	1,047.5	$18,000	$48,200	$61	$1,734,672	$93,556	0.582	0.789	$1,083,449
9	2031	1,047.5	$18,000	$48,200	$62	$1,734,672	$95,089	0.544	0.766	$1,016,425
10	2032	1,047.5	$18,000	$48,200	$63	$1,734,672	$96,623	0.508	0.744	$953,716
11	2033	1,047.5	$18,000	$48,200	$64	$1,734,672	$98,157	0.475	0.722	$895,041
12	2034	1,047.5	$18,000	$48,200	$66	$1,734,672	$101,224	0.444	0.701	$841,212
13	2035	1,047.5	$18,000	$48,200	$67	$1,734,672	$102,758	0.415	0.681	$789,800
14	2036	1,047.5	$18,000	$48,200	$68	$1,734,672	$104,291	0.388	0.661	$741,685
15	2037	1,047.5	$18,000	$48,200	$69	$1,734,672	$105,825	0.362	0.642	$696,650
16	2038	1,047.5	$18,000	$48,200	$70	$1,734,672	$107,359	0.339	0.623	$654,496
17	2039	1,047.5	$18,000	$48,200	$71	$1,734,672	$108,893	0.317	0.605	$615,035
18	2040	1,047.5	$18,000	$48,200	$72	$1,734,672	$110,426	0.296	0.587	$578,091
19	2041	1,047.5	$18,000	$48,200	$73	$1,734,672	$111,960	0.277	0.570	$543,501
20	2042	1,047.5	$18,000	$48,200	$75	$1,734,672	$115,027	0.258	0.554	$511,960
Totals		**20,950**				**$34,017,874**	**$1,963,134**			**$19,257,259**

3.1.2 Locomotive Travel Distance Savings

Trains that use the existing facility enter from the south through Superior and cross the Grassy Point Railroad Bridge into Duluth. The rail route to the proposed facility is approximately 3.0 miles shorter than to the existing facility. Trains travelling a shorter distance would result in benefits such as reduced wear to public infrastructure, reduced traffic congestion at railroad crossings, lower accident risk involving vehicles, and fewer emissions. The economic benefit of these reductions was determined to equal $0.003 – $0.0082 per ton-mile in 2014 dollars[10]. The present value of this benefit was calculated by the following steps:

1. Convert the upper limit of total external costs from 2014 to 2022 dollars using the inflation rate of 1.6%. The 2022 external cost rate is $0.0094 per ton-mile
2. Calculate the annual tonnage of train cars by multiplying the weight of one train car of 61,800 pounds by 25 train cars per train and by 185 trains using the facility per year. Convert weight to tons and multiply by 2 to account for both the full and empty train car trips
3. Calculate the annual benefit by multiplying the external cost rate by the distance savings of 3.0 miles and by the annual tonnage of material transferred at the proposed facility of 650,000 tons plus the annual tonnage of train cars of 285,825 tons
4. Discount the benefit each year using the discount rate of 7%.
5. Sum the total discounted benefits to obtain the present value of locomotive travel distance savings to be used in the Benefit-Cost ratio calculation.

[10] (*Pricing Freight Transport to Account for External Costs*, Austin, 2015)

The present value of locomotive travel distance savings was determined to be **$276,911**. See **Table 6** for a yearly breakdown of the benefits of locomotive travel distance savings.

Table 6: Locomotive Travel Savings Benefits

Year		Material Tonnage	Train Car Tonnage (2x)	Benefits	Discount Factor	Discounted Total Benefits
0	2022	0	0	$0	1.000	$0
1	2023	650,000	285,825	$26,138	0.935	$24,428
2	2024	650,000	285,825	$26,138	0.873	$22,830
3	2025	650,000	285,825	$26,138	0.816	$21,337
4	2026	650,000	285,825	$26,138	0.763	$19,941
5	2027	650,000	285,825	$26,138	0.713	$18,636
6	2028	650,000	285,825	$26,138	0.666	$17,417
7	2029	650,000	285,825	$26,138	0.623	$16,278
8	2030	650,000	285,825	$26,138	0.582	$15,213
9	2031	650,000	285,825	$26,138	0.544	$14,218
10	2032	650,000	285,825	$26,138	0.508	$13,287
11	2033	650,000	285,825	$26,138	0.475	$12,418
12	2034	650,000	285,825	$26,138	0.444	$11,606
13	2035	650,000	285,825	$26,138	0.415	$10,847
14	2036	650,000	285,825	$26,138	0.388	$10,137
15	2037	650,000	285,825	$26,138	0.362	$9,474
16	2038	650,000	285,825	$26,138	0.339	$8,854
17	2039	650,000	285,825	$26,138	0.317	$8,275
18	2040	650,000	285,825	$26,138	0.296	$7,733
19	2041	650,000	285,825	$26,138	0.277	$7,227
20	2042	650,000	285,825	$26,138	0.258	$6,755
	Totals	**13,000,000**	**5,716,500**	**$522,768**		**$276,911**

3.1.3 Truck Travel Reduction Benefits

Passing along the $500,000 annual switching fee to customers at the existing facility has the potential to steer them away from using the port as a means of shipping stone. The alternative shipping method to port and rail would be using trucks. C. Reiss estimates that if American Crystal Sugar were to shift shipping operations to trucks, they would add approximately 20,400 truck trips per year to the highway system. Over a 300-day working year, that equates to 68 truck trips per day.

The economic benefit of reducing this magnitude of truck travel on highways is decreased vehicle-miles traveled leading to less wear on public infrastructure. The present value of this benefit was calculated by the following steps:

1. Net the infrastructure wear external costs for trucks with the highway user fees for trucks
2. Convert the net truck costs from 1994 to 2022 dollars using the inflation rate of 1.9%. Convert the upper limit of infrastructure wear external costs for locomotives from 2014 to 2022 dollars using the inflation rate of 1.6%. The 2022 external cost rates are $0.0291 per mile for trucks and $0.0007 per ton-mile for locomotives.

3. Multiply the annual number of trucks for American Crystal Sugar by the truck external cost rate and the distance of truck travel to obtain annual truck costs. Multiply the annual tonnage for American Crystal Sugar by the locomotive external cost rate and the distance of train travel to obtain annual locomotive costs

4. Calculate the net annual benefit by subtracting the annual locomotive costs from the annual truck costs.

5. Discount the benefit each year using the discount rate of 7%.

6. Sum the total discounted benefits to obtain the present value of infrastructure wear savings to be used in the Benefit-Cost ratio calculation.

The present value of infrastructure wear savings was determined to be **$3,822,098**. See **Table 7** for a yearly breakdown of the benefits of infrastructure wear savings.

Table 7: Infrastructure Wear Savings Benefits

Year		Material Tonnage*	Number of Trucks	Truck Miles Traveled	Truck External Costs	Locomotive External Costs	Net Benefits	Disc. Factor	Disc. Total Benefits
0	2022	0	0	0	$0	$0	$0	1.000	$0
1	2023	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.935	$337,177
2	2024	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.873	$315,118
3	2025	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.816	$294,503
4	2026	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.763	$275,237
5	2027	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.713	$257,230
6	2028	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.666	$240,402
7	2029	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.623	$224,675
8	2030	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.582	$209,977
9	2031	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.544	$196,240
10	2032	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.508	$183,402
11	2033	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.475	$171,404
12	2034	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.444	$160,190
13	2035	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.415	$149,710
14	2036	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.388	$139,916
15	2037	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.362	$130,763
16	2038	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.339	$122,208
17	2039	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.317	$114,213
18	2040	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.296	$106,742
19	2041	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.277	$99,758
20	2042	500,000	20,408	15,306,122	$445,934	-$85,155	$360,779	0.258	$93,232
Totals		10,000,000	408,163	306,122,449	$8,918,684	-$1,703,103	$7,215,581		$3,822,098

*American Crystal Sugar only

3.2 ECONOMIC EVALUATION OF COSTS

3.2.1 Initial Capital Costs

Capital costs were determined by using the project cost estimate of the proposed facility developed by Krech Ojard & Associates and J.F. Brennan Company. The cost estimate includes elements of the project such as dock wall repairs, dredging, port equipment, and landside port improvements. The summary of project costs is shown in **Table 8**.

Table 8: Project Cost Summary of Proposed Facility

Project Element	Cost
Dredging & Dock Wall Repair	$7,993,000
Rail Service & Storage Track	$2,463,000
Stormwater Storage and Control	$750,000
Site Electrical	$430,000
Roads and Other Utilities	$567,000
Dust Control System	$60,000
Material Scales	$340,000
Ship Loader	$1,250,000
Buildings	$500,000
Miscellaneous (Erosion Ctrl., Dewatering, Mobilization)	$316,000
Project Subtotal	$14,669,000
Engineering	$536,000
Contingency	$2,142,000
Project Total	**$17,347,000**

The total project cost was estimated to be $17,347,000. Construction is expected to be completed in 2022, therefore the initial capital cost of the project is **$17,347,000**.

3.2.2 Residual Capital Value

The residual capital value was estimated for the proposed facility based on a 20-year analysis period and remaining service life assumptions. The existing facility is assumed to have a negligible residual capital value. The present value of residual capital value of the proposed facility was calculated by the following steps:

1. Determine the service life of the proposed facility improvements.
2. Determine the percent of useful life remaining after the 20-year period.
3. Calculate the residual value by multiplying the percent of useful life by the project cost of the proposed facility.
4. Discount the residual value by 20 years using the discount rate of 7%.

The residual capital value of the proposed facility was determined to be **$2,689,677**, which factors into the benefit-cost ratio as a benefit. See **Table 9** for the residual value calculation for the proposed facility.

Table 9: Residual Value Calculation for Proposed Facility

Proposed Facility	
Service Life	50 years
Percent Life Remaining	60%
Project Cost	$17,347,000
Residual Value (2042)	$10,408,200
Present Residual Value	$2,689,677

3.2.3 Maintenance Project Costs

Annual operating costs between the existing facility and proposed facility are similar, however the existing facility will require additional costs for maintenance projects throughout the 20-year analysis period. The proposed facility will not incur additional maintenance costs due to the proposed improvements. The maintenance project costs for the existing facility consist of $1,400,000 in initial rail improvements and $7,000,000 in dock wall and portside repairs over the next ten years. The present value of maintenance project costs of the existing facility was calculated by the following steps:

1. Determine the initial and annual maintenance project costs for the existing facility for each year.
2. Discount the maintenance project costs using the discount rate of 7%.
3. Sum the total discounted costs to obtain the present value of maintenance project cost savings for the proposed facility to be used in the Benefit-Cost ratio calculation.

The present value of the maintenance project cost savings of the proposed facility was determined to be **$6,316,507**. See **Table 10** for a yearly breakdown of maintenance project costs for the existing facility.

Table 10: Operation and Maintenance Annual Costs

Year		Existing Facility Maintenance Costs	Discount Factor	Discounted Net Total Cost Benefit
0	2022	$1,400,000	1.000	$1,400,000
1	2023	$700,000	0.935	$654,206
2	2024	$700,000	0.873	$611,407
3	2025	$700,000	0.816	$571,409
4	2026	$700,000	0.763	$534,027
5	2027	$700,000	0.713	$499,090
6	2028	$700,000	0.666	$466,440
7	2029	$700,000	0.623	$435,925
8	2030	$700,000	0.582	$407,406
9	2031	$700,000	0.544	$380,754
10	2032	$700,000	0.508	$355,845
11	2033	$0	0.475	$0
12	2034	$0	0.444	$0

13	2035	$0	0.415	$0
14	2036	$0	0.388	$0
15	2037	$0	0.362	$0
16	2038	$0	0.339	$0
17	2039	$0	0.317	$0
18	2040	$0	0.296	$0
19	2041	$0	0.277	$0
20	2042	$0	0.258	$0
	Totals	**$8,400,000**		**$6,316,507**

3.3 UNQUANTIFIED BENEFITS

Other benefits to the rehabilitation and relocation to the proposed facility were determined but were unquantified due to lack of information and modeling results necessary to assign a monetary benefit. Although these benefits were not included in the Benefit-Cost Analysis, it is important to note them due to their relation to the project.

Shipping operations at the existing facility are suspended for up to seven days in a year due to an increase in flooding events on the Saint Louis River. Climate change has brought in the question of whether shoreline flooding on Lake Superior will become more prevalent in the future. Many past studies indicate that as climate change continues to worsen over time and temperatures in the region increase, Lake Superior will experience an overall decrease in water levels due to increased evaporation but will still experience periodic higher than average levels.[11] More recent studies propose that precipitation increases have a significant chance of outpacing evaporation increases, leading to an increase in water levels.[12] The proposed facility infrastructure will be more climate resilient than the existing facility. Relocating to the proposed facility will allow for operations during the present-day flooding events and will withstand the potential increase in flooding frequency due to climate change.

The U.S. Environmental Protection Agency (EPA) lists the Saint Louis River as a Great Lakes Area of Concern (AOC). Samples of the material to be dredged at the proposed site identified the sediment as containing high levels of polycyclic aromatic hydrocarbons (PAHs), which are toxic to aquatic invertebrates and the animal populations in their food chain. The Wisconsin Department of Natural Resources requires confined disposal of the dredged material from this site. The removal and onsite capping of this contaminated sediment will provide environmental remediation, prevent the degradation of PAHs, and restore the beneficial uses to the site. The project will also ultimately help in delisting the Saint Louis River as an AOC as similar projects take place. An application was submitted to the EPA to deem this port rehabilitation a Great Lakes Legacy Act Project.

Along with reduced wear on roadway infrastructure, there are additional unquantified benefits to having no annual switching fees and thus continued use of the port for material transport. Avoiding using trucks for shipping decreases traffic density, congestion, and delay on major arterials, reduces CO_2 emissions and noise pollution, and decreases the risk for truck-related vehicular crashes, which have a higher chance of resulting in fatal and serious injuries. These benefits require large scale regional truck travel modeling to quantify and monetize; general assumptions do not reliably capture the variability of truck travel to estimate these benefits.

[11] (*Lake Superior Climate Change Impacts and Adaptation*, Huff and Thomas, 2014)
[12] (*Physically Plausible Methods for Projecting Changes in Great Lakes Water Levels under Climate Change Scenarios*, Lofgren and Rouhana, 2016)

The dock site of the proposed facility has been vacant and non-functioning for at least 30 years. Plans for occupancy were absent and the site would otherwise remain vacant. Rehabilitating and relocating operations to the proposed facility would give the site a new purpose. This revitalizes the port infrastructure and may help revitalize surrounding communities in Superior. This also has the potential to create new economic opportunity and business for the community.

4.0 CONCLUSION

The benefit-cost ratio for the Build Alternative was calculated by dividing the sum of discounted benefits by the sum of discounted costs. If the ratio is greater than or equal to 1.0 than the increase in benefits is equal to or greater than the initial costs associated with the project.

The total benefits included a combination of shipping travel savings benefits, locomotive travel savings benefits, and truck travel reduction benefits. USDOT guidance dictates that if funding from a discretionary grant program is used, costs that are not initial capital costs are included in the numerator as an addition/subtraction to the benefits[13]. This includes residual capital value and annual operation and maintenance costs. The total costs in the denominator only accounted for initial capital costs. See the benefit-cost ratio calculation below.

Build Alternative

Shipping Emissions Reduction Benefits	=	$19,257,259
Locomotive Travel Savings Benefits	=	$ 276,911
Truck Travel Reduction Benefits	=	$ 3,822,098
Residual Capital Cost (Benefit)	=	$ 2,689,677
Maintenance Project Cost Savings	=	$ 6,316,507
Total Benefits	=	**$32,362,452**

Project Cost Estimate
Total Costs = **$17,347,000**

Benefit-Cost Ratio = $\mathbf{\$32,362,452/\$17,347,000 = 1.87}$

The benefit-cost ratio for the Build Alternative was found to be **1.87**. This suggests that rehabilitating the proposed facility and relocating C. Reiss shipping operations is cost-effective and is economically justified.

The net present value was determined by subtracting the sum of discounted costs from the sum of discounted benefits. A positive net present value is another indication that the project is cost-effective. The net present value for the Build Alternative was found to be **$15,015,452**. See the net present value calculation below.

Net Present Value = $\mathbf{\$32,362,452 - \$17,347,000 = \$15,015,452}$

[13] (*Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, U.S. Department of Transportation, 2021)

APPENDIX – BENEFIT COST ANALYSIS

Table 11 shows a summary of all benefits and costs over the 20-year analysis period and the calculation of the discounted net present value. **Table 12** shows a summary of impacts that each benefit provides to its respective population.

Table 11: Benefit-Cost Summary Table

Yr.	Shipping Emissions Benefit	Locomotive Travel Benefit	Truck Travel Reduction Benefit	Initial & Residual Cap Value	Maint. Cost Benefit	Total Undiscounted Net Benefits	Discounted Net Present Value
2022	$0	$0	$0	- $17,347,000	$1,400,000	- $15,947,000	- $15,947,000
2023	$1,644,541	$26,138	$360,779	$0	$700,000	$4,376,000	$2,555,771
2024	$1,672,816	$26,138	$360,779	$0	$700,000	$4,432,549	$2,416,291
2025	$1,703,139	$26,138	$360,779	$0	$700,000	$4,493,195	$2,286,007
2026	$1,725,267	$26,138	$360,779	$0	$700,000	$4,537,452	$2,156,382
2027	$1,753,595	$26,138	$360,779	$0	$700,000	$4,594,107	$2,038,556
2028	$1,777,772	$26,138	$360,779	$0	$700,000	$4,642,461	$1,924,350
2029	$1,801,949	$26,138	$360,779	$0	$700,000	$4,690,815	$1,816,556
2030	$1,828,228	$26,138	$360,779	$0	$700,000	$4,743,373	$1,716,045
2031	$1,829,762	$26,138	$360,779	$0	$700,000	$4,746,441	$1,607,636
2032	$1,831,295	$26,138	$360,779	$0	$700,000	$4,749,508	$1,506,250
2033	$1,832,829	$26,138	$360,779	$0	$0	$4,052,576	$1,078,863
2034	$1,835,896	$26,138	$360,779	$0	$0	$4,058,710	$1,013,008
2035	$1,837,430	$26,138	$360,779	$0	$0	$4,061,778	$950,357
2036	$1,838,964	$26,138	$360,779	$0	$0	$4,064,845	$891,738
2037	$1,840,498	$26,138	$360,779	$0	$0	$4,067,913	$836,887
2038	$1,842,031	$26,138	$360,779	$0	$0	$4,070,980	$785,558
2039	$1,843,565	$26,138	$360,779	$0	$0	$4,074,047	$737,523
2040	$1,845,099	$26,138	$360,779	$0	$0	$4,077,115	$692,566
2041	$1,846,632	$26,138	$360,779	$0	$0	$4,080,182	$650,486
2042	$1,849,700	$26,138	$360,779	$10,408,200	$0	$14,494,517	$3,301,624
Tot.	**$35,981,007**	**$522,768**	**$7,215,581**	**- $6,938,800**	**$8,400,000**	**$81,161,564**	**$15,015,452**

Table 12: Impacts Summary Table

Current Status/Baseline & Problem to be Addressed	Change to Baseline/ Alternative	Types of Impacts	Population Affected by Impact	Economic Benefit	Summary of Results (millions of dollars)	Page Reference in BCA
Existing facility accommodates 23,000-ton ships, facility is farther inland from port inlet	New shipping facility will accommodate 3,000 ton increase in ship capacity, facility is closer to port inlet	Reducing the number of vessels required for American Crystal Sugar, reducing ship travel distance	General Public	Reduced emissions from ships	$19.26	p. 7
Existing facility is located farther from the main rail corridor	New shipping facility location closer to main rail corridor	Reducing the travel distance for trains	General Public	Less infrastructure wear and congestion, fewer emissions and accidents	$0.28	p. 8
Customers will shift shipping operations to trucks to avoid DSPA switching fees	No switching fees will be charged and operations by rail/ship will be maintained	Fewer trucks travelling on U.S. highways	General Public	Less wear to public infrastructure	$3.82	p. 9
Shipping operations are suspended up to seven days in a year due to flooding	Proposed improvements to infrastructure are climate resilient and withstand flooding	Operation possible during current and flooding events and potential lake-level rise	C. Reiss customers, City of Superior – Port Division	Fewer interruptions to operations, resilient port infrastructure	Not Monetized	p. 13

Contaminated soils are present at the proposed dock site	Dredging that will take place during rehabilitation will be removed from the aquatic environment	Less contaminated aquatic environment, helps to delist Saint Louis River as AOC	Environment, General Public	Less contaminated aquatic environment, helps to delist Saint Louis River as AOC	Not Monetized	p. 13
Customers will shift shipping operations to trucks to avoid DSPA switching fees	No switching fees will be charged and operations by rail/ship will be maintained	Fewer trucks travelling on U.S. highways	General Public, C. Reiss customers	Reduced traffic density, congestion, and delay, reduced CO_2 emissions and noise, fewer truck-related accidents	Not Monetized	p. 13
Proposed shipping facility site is vacant and non-functioning	Relocating operations to the proposed facility and rehabilitating the dock	Revitalizes the port infrastructure	City of Superior – Port Division, Surrounding communities	Creates potential for new business	Not Monetized	p. 14

5.0 REFERENCES

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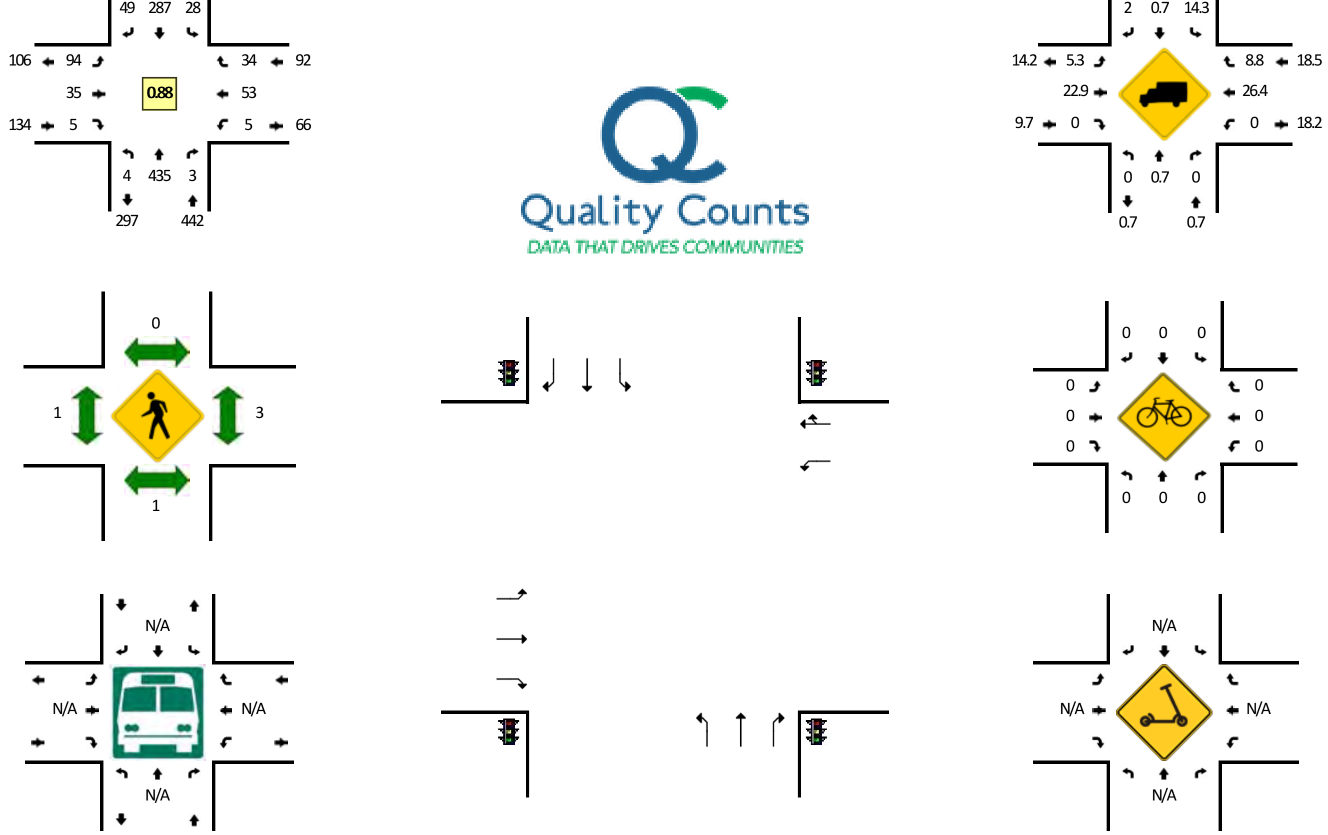
United States Department of Transportation. (2021). *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*. Washington: USDOT.

APPENDIX B: TRAFFIC COUNT DATA

LOCATION: Hammond Ave -- Winter St
CITY/STATE: Superior, WI
QC JOB #: 15814401
DATE: Tue, May 17 2022

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



15-Min Count Period Beginning At	Hammond Ave (Northbound)				Hammond Ave (Southbound)				Winter St (Eastbound)				Winter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	86	0	0	5	33	2	0	26	7	0	0	0	10	4	0	173	
6:45 AM	0	66	0	0	2	38	12	0	15	5	0	0	0	8	4	0	150	
7:00 AM	0	69	0	0	1	44	7	0	24	9	0	0	0	13	4	0	171	
7:15 AM	0	84	0	0	7	71	11	0	22	9	0	0	3	12	5	0	224	718
7:30 AM	1	139	0	0	4	72	11	0	23	9	1	0	2	16	14	0	292	837
7:45 AM	2	108	2	0	11	82	15	0	34	10	0	0	0	10	10	0	284	971
8:00 AM	1	104	1	0	6	62	12	0	15	7	4	0	0	15	5	0	232	1032
8:15 AM	0	71	2	0	2	52	10	0	15	8	2	0	2	8	9	0	181	989
8:30 AM	2	83	1	0	4	51	11	0	18	5	0	0	2	8	4	0	189	886
8:45 AM	1	81	1	0	3	51	14	0	16	19	0	0	1	8	0	0	195	797
9:00 AM	2	66	4	0	2	35	9	0	18	11	0	0	1	3	7	0	158	723
9:15 AM	1	64	2	0	1	36	12	0	18	5	1	0	0	14	4	0	158	700

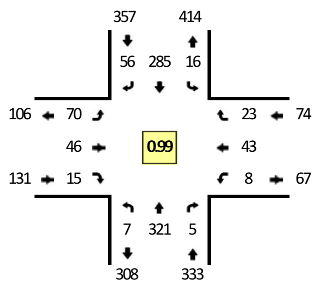
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	556	0	0	16	288	44	0	92	36	4	0	8	64	56	0	1168
Heavy Trucks	0	4	0		4	0	4		0	12	0		0	12	4		40
Buses																	
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

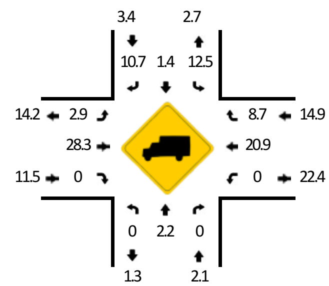
Comments:

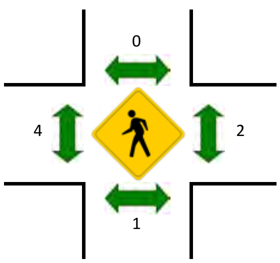
Type of peak hour being reported: Intersection Peak
Method for determining peak hour: Total Entering Volume

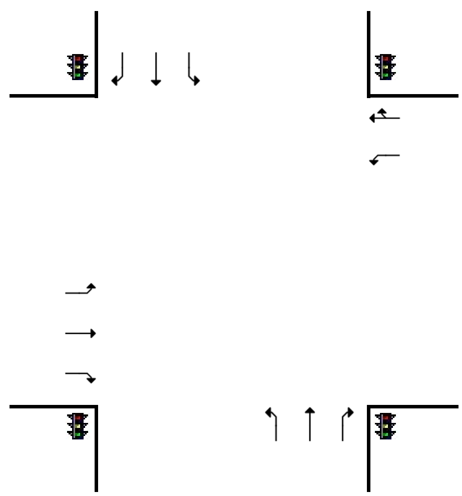
LOCATION: Hammond Ave -- Winter St
QC JOB #: 15814402
CITY/STATE: Superior, WI
DATE: Tue, May 17 2022

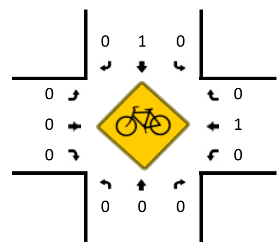
Peak-Hour: 11:30 AM -- 12:30 PM
Peak 15-Min: 12:00 PM -- 12:15 PM

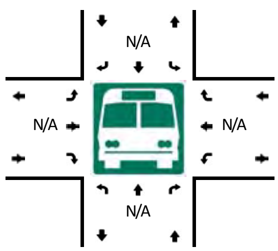


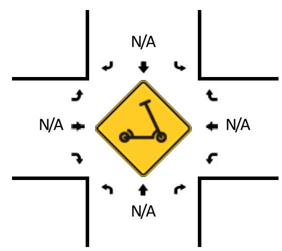












15-Min Count Period Beginning At	Hammond Ave (Northbound)				Hammond Ave (Southbound)				Winter St (Eastbound)				Winter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	3	87	1	0	4	45	11	0	10	11	0	0	1	12	1	0	186	
11:15 AM	3	77	1	0	5	62	17	0	16	9	0	0	1	6	4	0	201	
11:30 AM	0	89	3	0	3	69	9	0	17	13	4	0	1	12	5	0	225	
11:45 AM	3	80	0	0	4	64	18	0	21	8	3	0	5	6	6	0	218	830
12:00 PM	2	74	1	0	4	72	16	0	16	14	4	0	1	14	8	0	226	870
12:15 PM	2	78	1	0	5	80	13	0	16	11	4	0	1	11	4	0	226	895
12:30 PM	3	83	2	0	2	67	13	0	16	11	3	0	0	14	4	0	218	888
12:45 PM	3	71	0	0	5	66	14	0	15	13	3	0	1	6	2	0	199	869
1:00 PM	1	67	2	0	7	52	8	0	21	18	3	0	1	12	3	0	195	838
1:15 PM	4	81	2	0	2	66	15	0	25	11	1	0	1	13	4	0	225	837
1:30 PM	3	90	3	0	6	65	24	0	18	19	6	0	1	11	3	0	249	868
1:45 PM	5	79	0	0	1	79	6	0	24	7	4	0	0	11	4	0	220	889

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	296	4	0	16	288	64	0	64	56	16	0	4	56	32	0	904
Heavy Trucks	0	4	0		0	0	8		0	20	0		0	12	4		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

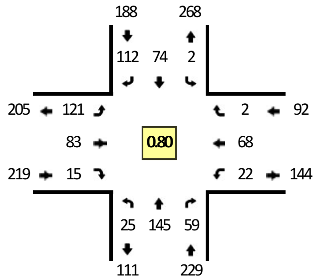
Comments:

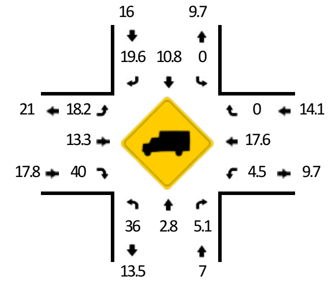
Report generated on 5/27/2022 3:24 PM
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

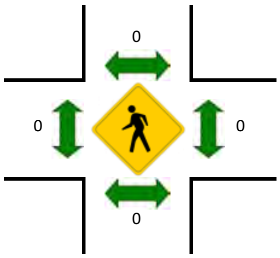
LOCATION: Tower Ave -- Winter St
CITY/STATE: Superior, WI

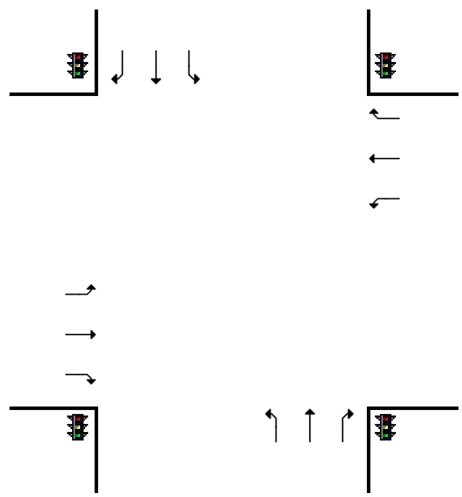
QC JOB #: 15814403
DATE: Tue, May 17 2022

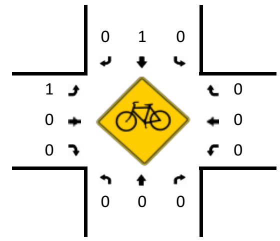
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

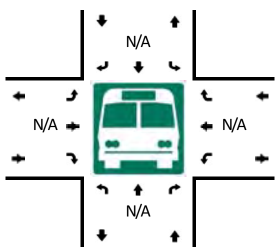


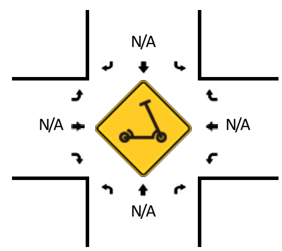












15-Min Count Period Beginning At	Tower Ave (Northbound)				Tower Ave (Southbound)				Winter St (Eastbound)				Winter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	6	24	12	0	1	11	44	0	18	13	0	0	2	14	0	0	145	
6:45 AM	5	28	14	0	7	15	32	0	28	9	3	0	3	17	0	0	161	
7:00 AM	4	39	16	0	1	18	20	0	24	19	4	0	3	15	0	0	163	
7:15 AM	5	25	13	0	0	13	22	0	18	16	3	0	10	13	1	0	139	608
7:30 AM	8	34	15	0	0	23	25	0	44	23	4	0	4	19	0	0	199	662
7:45 AM	8	47	15	0	1	20	45	0	35	25	4	0	5	21	1	0	227	728
8:00 AM	5	28	10	0	1	24	15	0	20	12	5	0	7	16	0	0	143	708
8:15 AM	7	35	12	0	1	22	19	0	12	15	2	0	3	12	1	0	141	710
8:30 AM	3	32	9	0	2	19	19	0	15	11	4	0	5	13	0	0	132	643
8:45 AM	5	30	10	0	1	36	23	0	28	21	5	0	9	9	1	0	178	594
9:00 AM	4	29	8	1	1	25	24	0	21	15	6	0	7	6	2	0	149	600
9:15 AM	3	31	9	0	1	22	20	0	18	14	3	0	8	16	3	0	148	607

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	188	60	0	4	80	180	0	140	100	16	0	20	84	4	0	908
Heavy Trucks	8	4	4		0	12	40		8	8	8		0	0	0		92
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/27/2022 3:24 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

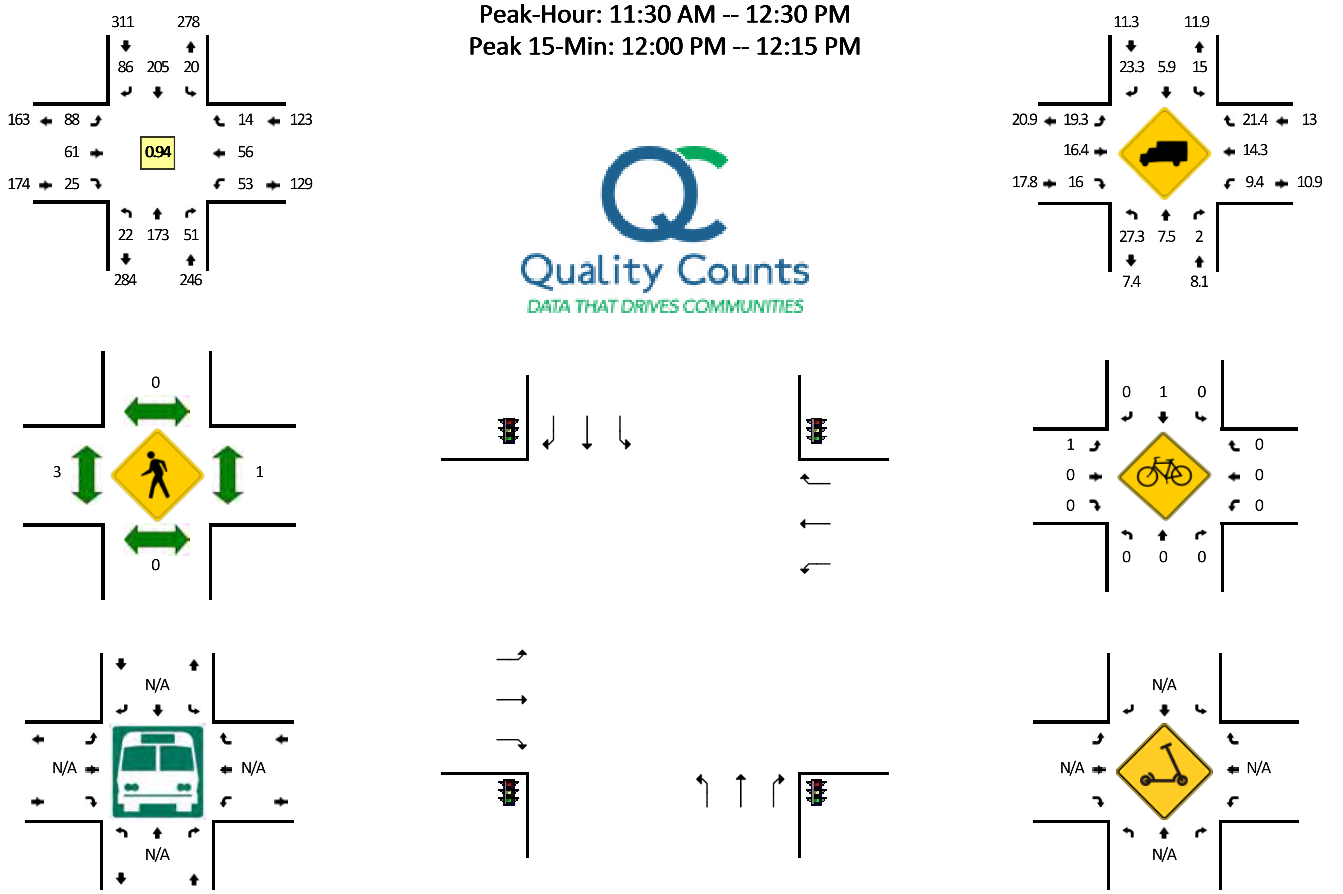
Type of peak hour being reported: Intersection Peak — Method for determining peak hour: Total Entering Volume

LOCATION: Tower Ave -- Winter St — **QC JOB #:** 15814404

CITY/STATE: Superior, WI — **DATE:** Tue, May 17 2022

Peak-Hour: 11:30 AM -- 12:30 PM

Peak 15-Min: 12:00 PM -- 12:15 PM



15-Min Count Period Beginning At	Tower Ave (Northbound)				Tower Ave (Southbound)				Winter St (Eastbound)				Winter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	4	42	6	0	1	33	15	0	18	12	9	0	10	17	2	0	169	
11:15 AM	8	32	11	0	3	44	21	0	19	14	5	0	10	11	4	0	182	
11:30 AM	4	44	12	1	6	53	13	0	18	15	5	0	7	13	3	0	194	
11:45 AM	7	41	13	0	4	47	25	1	25	12	6	0	19	11	2	0	213	758
12:00 PM	6	42	9	0	4	61	29	2	19	16	9	0	10	17	3	0	227	816
12:15 PM	4	46	17	0	3	44	19	0	26	18	5	0	17	15	6	0	220	854
12:30 PM	7	34	13	0	4	41	21	0	19	11	4	0	13	17	3	0	187	847
12:45 PM	5	37	16	0	6	48	20	0	22	10	3	0	14	8	4	0	193	827
1:00 PM	6	27	9	0	3	51	25	0	27	24	3	0	6	10	5	0	196	796
1:15 PM	2	34	8	0	2	38	24	0	15	25	5	0	16	16	0	0	185	761
1:30 PM	1	24	11	0	2	23	20	0	23	24	5	0	17	17	2	0	169	743
1:45 PM	5	44	9	0	1	42	19	0	19	20	3	0	12	8	6	0	188	738

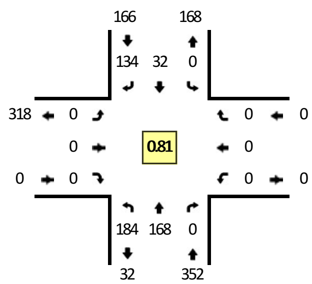
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	168	36	0	16	244	116	8	76	64	36	0	40	68	12	0	908
Heavy Trucks	8	12	0		0	24	24		16	16	4		4	4	0		112
Buses																	
Pedestrians		0				0				8				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

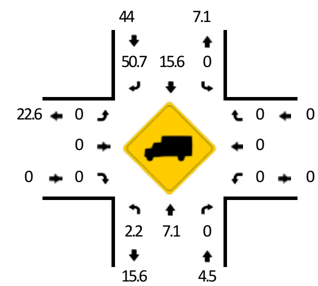
Report generated on 5/27/2022 3:24 PM — SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

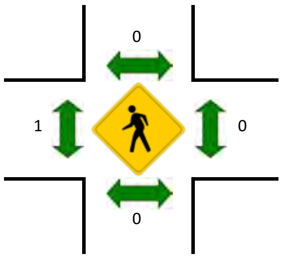
Type of peak hour being reported: Intersection Peak — Method for determining peak hour: Total Entering Volume

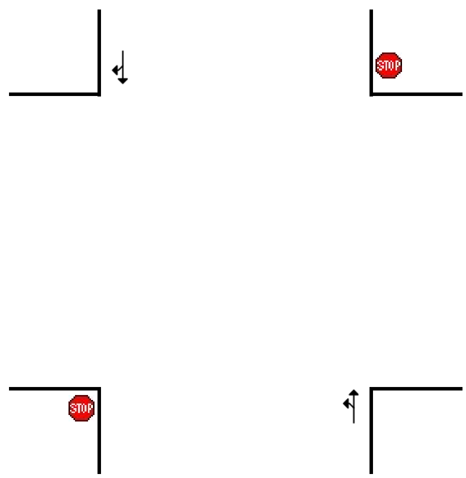
LOCATION: Susquehanna Ave -- US 2 WB Onramp — **QC JOB #:** 15814405
CITY/STATE: Superior, WI — **DATE:** Tue, May 17 2022

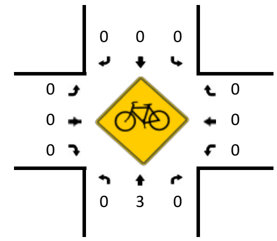


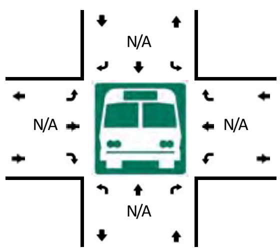
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

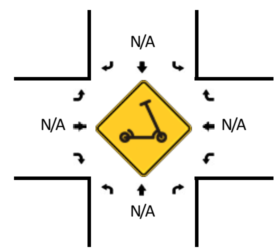












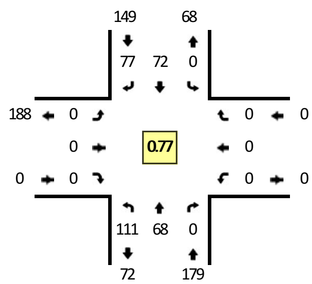
15-Min Count Period Beginning At	Susquehanna Ave (Northbound)				Susquehanna Ave (Southbound)				US 2 WB Onramp (Eastbound)				US 2 WB Onramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	36	27	0	0	0	1	10	0	0	0	0	0	0	0	0	0	74	
6:45 AM	33	50	0	0	0	2	10	0	0	0	0	0	0	0	0	0	95	
7:00 AM	32	25	0	0	0	8	22	0	0	0	0	0	0	0	0	0	87	
7:15 AM	45	30	0	0	0	4	31	0	0	0	0	0	0	0	0	0	110	366
7:30 AM	59	48	0	0	0	9	44	0	0	0	0	0	0	0	0	0	160	452
7:45 AM	44	62	0	0	0	8	37	0	0	0	0	0	0	0	0	0	151	508
8:00 AM	36	28	0	0	0	11	22	0	0	0	0	0	0	0	0	0	97	518
8:15 AM	35	16	0	0	0	7	11	0	0	0	0	0	0	0	0	0	69	477
8:30 AM	45	24	0	0	0	7	20	0	0	0	0	0	0	0	0	0	96	413
8:45 AM	26	18	0	0	0	15	33	0	0	0	0	0	0	0	0	0	92	354
9:00 AM	26	14	0	0	0	8	22	0	0	0	0	0	0	0	0	0	70	327
9:15 AM	23	16	0	0	0	13	27	0	0	0	0	0	0	0	0	0	79	337

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	236	192	0	0	0	36	176	0	0	0	0	0	0	0	0	0	640
Heavy Trucks	0	12	0		0	8	104		0	0	0		0	0	0		124
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	8	0		0	0	0		0	0	0		0	0	0		8
Scooters																	

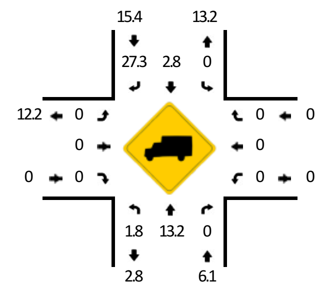
Comments:

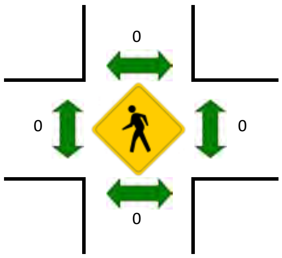
Report generated on 5/27/2022 3:24 PM — SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

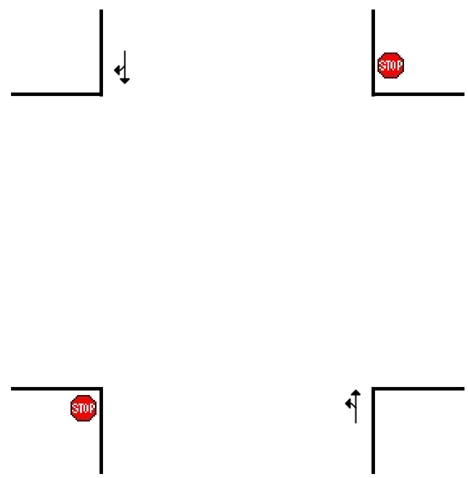
LOCATION: Susquehanna Ave -- US 2 WB Onramp
QC JOB #: 15814406
CITY/STATE: Superior, WI
DATE: Tue, May 17 2022

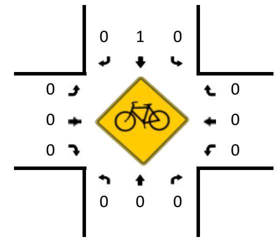


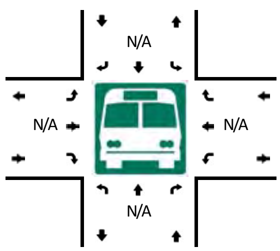
Peak-Hour: 11:45 AM -- 12:45 PM
Peak 15-Min: 12:00 PM -- 12:15 PM

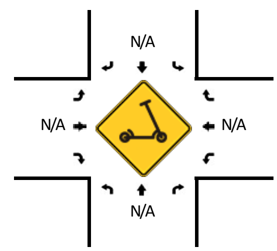












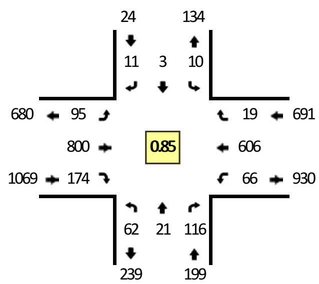
15-Min Count Period Beginning At	Susquehanna Ave (Northbound)				Susquehanna Ave (Southbound)				US 2 WB Onramp (Eastbound)				US 2 WB Onramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	21	15	0	0	0	10	22	0	0	0	0	0	0	0	0	0	68	
11:15 AM	27	13	0	0	0	13	17	0	0	0	0	0	0	0	0	0	70	
11:30 AM	20	12	0	0	0	9	26	0	0	0	0	0	0	0	0	0	67	
11:45 AM	26	9	0	0	0	20	19	0	0	0	0	0	0	0	0	0	74	279
12:00 PM	31	25	0	0	0	25	25	0	0	0	0	0	0	0	0	0	106	317
12:15 PM	26	16	0	0	0	15	12	0	0	0	0	0	0	0	0	0	69	316
12:30 PM	28	18	0	0	0	12	21	0	0	0	0	0	0	0	0	0	79	328
12:45 PM	29	24	0	0	0	6	11	0	0	0	0	0	0	0	0	0	70	324
1:00 PM	27	15	0	0	0	13	18	0	0	0	0	0	0	0	0	0	73	291
1:15 PM	24	26	0	0	0	13	23	0	0	0	0	0	0	0	0	0	86	308
1:30 PM	36	20	0	0	0	6	24	0	0	0	0	0	0	0	0	0	86	315
1:45 PM	30	11	0	0	0	4	22	0	0	0	0	0	0	0	0	0	67	312

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	124	100	0	0	0	100	100	0	0	0	0	0	0	0	0	0	424
Heavy Trucks	0	16	0		0	0	20		0	0	0		0	0	0		36
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

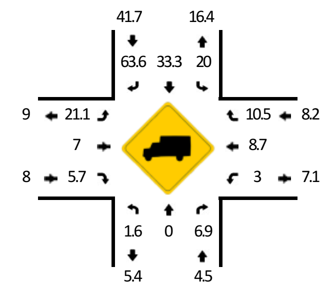
Type of peak hour being reported: Intersection Peak   Method for determining peak hour: Total Entering Volume

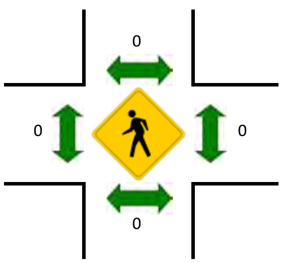
LOCATION: Belknap St -- US 2   **QC JOB #:** 15814407
CITY/STATE: Superior, WI   **DATE:** Tue, May 17 2022

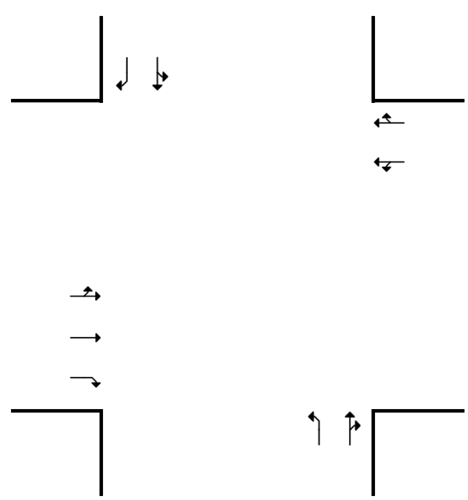


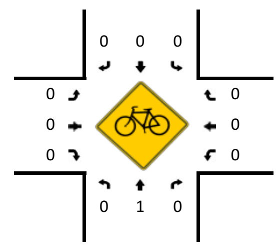
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

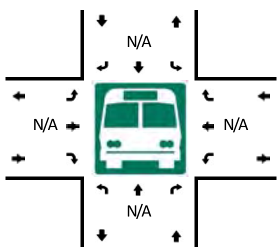
Quality Counts
DATA THAT DRIVES COMMUNITIES

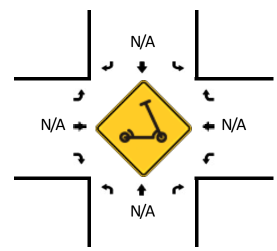












15-Min Count Period Beginning At	Belknap St (Northbound)				Belknap St (Southbound)				US 2 (Eastbound)				US 2 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	22	3	3	0	1	1	5	0	33	150	12	0	3	111	7	0	351	
6:45 AM	10	5	10	0	5	1	4	0	41	152	43	0	10	145	11	1	438	
7:00 AM	16	2	13	0	2	1	3	0	26	171	22	0	9	117	4	0	386	
7:15 AM	16	5	18	0	3	0	3	0	23	189	24	1	13	137	4	2	438	1613
7:30 AM	21	6	37	0	1	1	1	0	28	224	46	0	17	178	8	1	569	1831
7:45 AM	14	7	30	0	2	1	3	0	28	241	62	0	22	169	5	0	584	1977
8:00 AM	11	3	31	0	4	1	4	0	15	146	42	0	10	122	2	1	392	1983
8:15 AM	13	3	27	0	3	2	2	0	13	186	21	0	15	116	5	1	407	1952
8:30 AM	5	0	30	0	4	4	3	0	16	162	14	0	16	119	3	0	376	1759
8:45 AM	13	4	31	0	2	1	4	0	13	158	18	1	13	127	1	0	386	1561
9:00 AM	4	2	18	0	4	0	2	0	16	141	18	0	21	116	0	0	342	1511
9:15 AM	10	1	20	0	1	1	7	0	11	135	19	0	7	111	1	0	324	1428

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	28	120	0	8	4	12	0	112	964	248	0	88	676	20	0	2336
Heavy Trucks	0	0	4		0	0	0		12	88	8		0	68	0		180
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

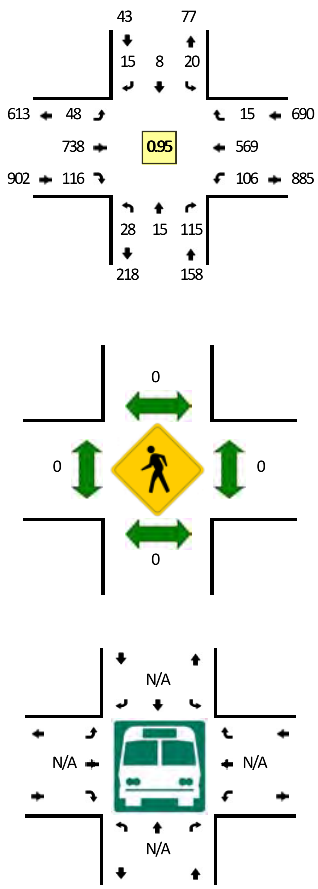
Comments:

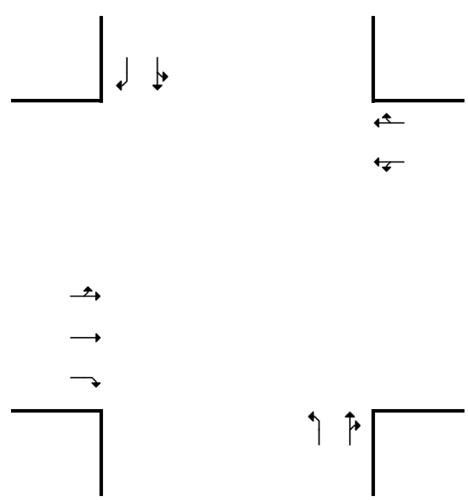
Report generated on 5/27/2022 3:24 PM   SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

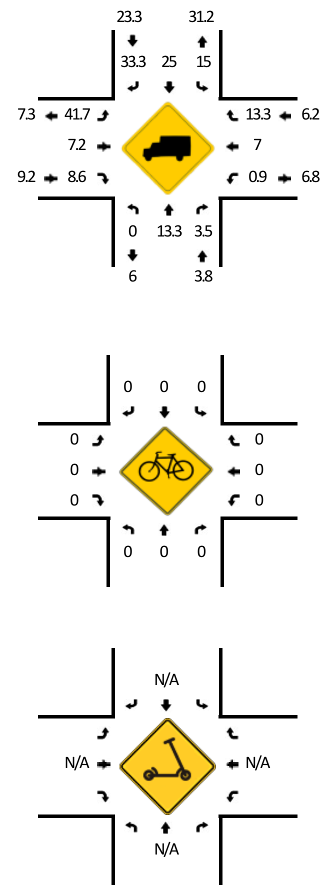
Type of peak hour being reported: Intersection Peak — Method for determining peak hour: Total Entering Volume

LOCATION: Belknap St -- US 2 — **QC JOB #:** 15814408
CITY/STATE: Superior, WI — **DATE:** Tue, May 17 2022

Peak-Hour: 11:30 AM -- 12:30 PM
Peak 15-Min: 12:00 PM -- 12:15 PM







15-Min Count Period Beginning At	Belknap St (Northbound)				Belknap St (Southbound)				US 2 (Eastbound)				US 2 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	7	1	19	0	6	1	11	0	9	145	26	0	13	127	5	2	372	
11:15 AM	5	1	20	0	4	1	1	0	10	187	28	0	17	143	1	1	419	
11:30 AM	9	3	25	0	6	2	3	0	11	190	30	1	18	133	5	1	437	
11:45 AM	6	5	31	0	1	1	4	0	13	178	28	0	21	123	3	6	420	1648
12:00 PM	6	3	29	0	11	4	6	0	13	187	28	0	32	151	1	1	472	1748
12:15 PM	7	4	30	0	2	1	2	0	10	183	30	0	23	162	6	4	464	1793
12:30 PM	6	5	33	0	2	2	1	0	11	157	27	0	10	134	1	2	391	1747
12:45 PM	7	0	35	0	9	1	3	0	17	187	29	1	21	125	6	3	444	1771
1:00 PM	5	2	18	0	8	0	4	0	17	176	22	1	20	125	6	0	404	1703
1:15 PM	15	4	29	0	2	0	3	0	11	166	46	0	26	148	3	4	457	1696
1:30 PM	7	0	16	0	6	4	3	0	20	180	26	2	20	130	2	2	418	1723
1:45 PM	7	2	14	0	3	0	2	0	19	190	27	1	16	136	4	2	423	1702

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	12	116	0	44	16	24	0	52	748	112	0	128	604	4	4	1888
Heavy Trucks	0	8	4		8	0	4		24	64	12		4	68	0		196
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/27/2022 3:24 PM — SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Thurs 5/26		Entering		Exiting					
Start Time	End Time	# Cars	# Trucks	# Cars	# Trucks	Total	Entering	Exiting	
11:00 AM	11:15 AM			1	1				
11:15 AM	11:30 AM								
11:30 AM	11:45 AM	1	1						
11:45 AM	12:00 PM			1	1	6	2	4	Site Peak Hour = 11am-12pm
12:00 PM	12:15 PM			1		5	2	3	
12:15 PM	12:30 PM					5	2	3	
12:30 PM	12:45 PM			1		4	0	4	
12:45 PM	1:00 PM					2	0	2	
			50%		33%				

Tues 5/31		Entering		Exiting					
Start Time	End Time	# Cars	# Trucks	# Cars	# Trucks	Total	Entering	Exiting	
6:30 AM	6:45 AM	1	1						
6:45 AM	7:00 AM		1		2				
7:00 AM	7:15 AM		1						
7:15 AM	7:30 AM				1	7	4	3	Site Peak Hour = 6:30-7:30 am
7:30 AM	7:45 AM				1	6	2	4	
7:45 AM	8:00 AM					3	1	2	
8:00 AM	8:15 AM					2	0	2	
8:15 AM	8:30 AM					1	0	1	
8:30 AM	8:45 AM			1					
8:45 AM	9:00 AM	1							
			60%		80%				

	Entering		Exiting		Total
	# Cars	# Trucks	# Cars	# Trucks	
AM Peak	1	3	0	3	7
Mid-Day Peak	1	1	2	2	6

APPENDIX C: SYNCHRO & SIDRA REPORTS

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	184	168	32	134
Future Volume (vph)	0	0	184	168	32	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.891	
Flt Protected				0.975		
Satd. Flow (prot)	0	0	0	1775	1174	0
Flt Permitted				0.975		
Satd. Flow (perm)	0	0	0	1775	1174	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	815			723	630	
Travel Time (s)	22.2			19.7	17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	7%	16%	51%
Adj. Flow (vph)	0	0	204	187	36	149
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	391	185	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 35.6%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	76	16	26	69	2	26	134	53	2	80	107
Future Volume (vph)	117	76	16	26	69	2	26	134	53	2	80	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	125		50	100		150	100		150
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1543	1624	1233	1570	1624	1583	1308	1845	1524	1770	1727	1357
Flt Permitted	0.707			0.702			0.699			0.662		
Satd. Flow (perm)	1148	1624	1233	1160	1624	1583	962	1845	1524	1233	1727	1357
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		4424			1494			1169			1158	
Travel Time (s)		120.7			40.7			31.9			31.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	17%	17%	31%	15%	17%	2%	38%	3%	6%	2%	10%	19%
Adj. Flow (vph)	130	84	18	29	77	2	29	149	59	2	89	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	84	18	29	77	2	29	149	59	2	89	119
Turn Type	D.Pm	NA	Perm	D.Pm	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	8		4	4		8	6		2	2		6
Detector Phase	8	4	4	4	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	14.0	25.0	25.0	14.0	25.0	25.0
Total Split (s)	36.0	36.0	36.0	36.0	36.0	36.0	17.0	38.0	38.0	16.0	37.0	37.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	18.9%	42.2%	42.2%	17.8%	41.1%	41.1%
Maximum Green (s)	29.0	29.0	29.0	29.0	29.0	29.0	10.0	31.0	31.0	9.0	30.0	30.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	17.5	17.5	17.5	17.5	17.5	17.5	60.5	59.7	59.7	61.5	56.8	56.8
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.67	0.66	0.66	0.68	0.63	0.63
v/c Ratio	0.58	0.27	0.07	0.13	0.24	0.01	0.04	0.12	0.06	0.00	0.08	0.14
Control Delay	42.3	30.9	27.2	27.8	29.8	27.0	6.0	8.3	8.7	6.0	10.2	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	30.9	27.2	27.8	29.8	27.0	6.0	8.3	8.7	6.0	10.2	10.6
LOS	D	C	C	C	C	C	A	A	A	A	B	B
Approach Delay		37.0			29.2			8.1			10.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			C			A			B	
Queue Length 50th (ft)	68	41	8	16	44	1	4	24	9	0	14	20
Queue Length 95th (ft)	115	74	24	33	63	m4	16	85	40	3	56	74
Internal Link Dist (ft)		4344			1414			1089			1078	
Turn Bay Length (ft)	100		100	125		50	100		150	100		150
Base Capacity (vph)	395	559	424	399	559	545	704	1222	1010	913	1089	856
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.15	0.04	0.07	0.14	0.00	0.04	0.12	0.06	0.00	0.08	0.14

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 20.2	Intersection LOS: C
Intersection Capacity Utilization 33.1%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tower Ave & Winter St

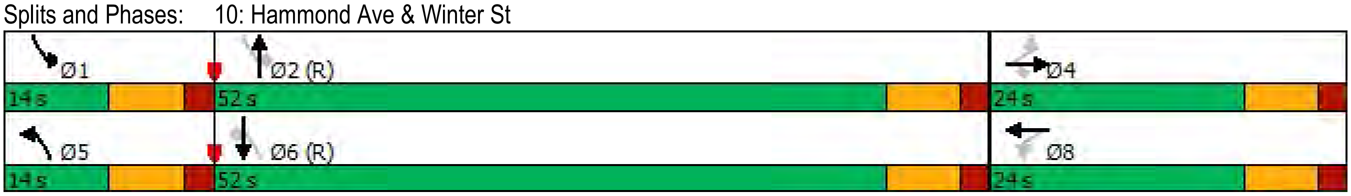
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	35	5	5	53	34	4	435	3	28	287	49
Future Volume (vph)	94	35	5	5	53	34	4	435	3	28	287	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		75	75		0	75		100	75		125
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.941				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	1545	1583	1770	1498	0	1770	1863	1583	1583	1863	1583
Flt Permitted	0.694			0.732			0.550			0.422		
Satd. Flow (perm)	1256	1545	1583	1364	1498	0	1025	1863	1583	703	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1494			1288			1236			1169	
Travel Time (s)		40.7			35.1			28.1			26.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	23%	2%	2%	26%	9%	2%	2%	2%	14%	2%	2%
Adj. Flow (vph)	104	39	6	6	59	38	4	483	3	31	319	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	39	6	6	97	0	4	483	3	31	319	54
Turn Type	Perm	NA	Perm	Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			6		2	2		6
Detector Phase	4	4	4	8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		14.0	20.0	20.0	14.0	20.0	20.0
Total Split (s)	24.0	24.0	24.0	24.0	24.0		14.0	52.0	52.0	14.0	52.0	52.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%		15.6%	57.8%	57.8%	15.6%	57.8%	57.8%
Maximum Green (s)	17.0	17.0	17.0	17.0	17.0		7.0	45.0	45.0	7.0	45.0	45.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	14.4	14.4	14.4	14.4	14.4		67.4	61.0	61.0	65.4	66.6	66.6
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16		0.75	0.68	0.68	0.73	0.74	0.74
v/c Ratio	0.52	0.16	0.02	0.03	0.41		0.00	0.38	0.00	0.05	0.23	0.05
Control Delay	57.3	46.3	44.0	29.6	38.0		4.5	11.1	9.7	4.6	6.9	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.3	46.3	44.0	29.6	38.0		4.5	11.1	9.7	4.6	6.9	6.8
LOS	E	D	D	C	D		A	B	A	A	A	A
Approach Delay		53.9			37.5			11.1			6.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			B			A	
Queue Length 50th (ft)	61	22	3	3	50		1	148	1	4	50	7
Queue Length 95th (ft)	112	53	16	13	92		4	251	5	13	155	32
Internal Link Dist (ft)		1414			1208			1156			1089	
Turn Bay Length (ft)	75		75	75			75		100	75		125
Base Capacity (vph)	265	326	334	287	316		842	1262	1072	598	1378	1171
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.12	0.02	0.02	0.31		0.00	0.38	0.00	0.05	0.23	0.05

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 17.5 Intersection LOS: B
Intersection Capacity Utilization 43.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 10: Hammond Ave & Winter St



Intersection: 2: Susquehanna Ave & US 2 WB On-Ramp

Movement	NB
Directions Served	LT
Maximum Queue (ft)	99
Average Queue (ft)	40
95th Queue (ft)	79
Link Distance (ft)	707
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Tower Ave & Winter St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	T	R
Maximum Queue (ft)	184	210	86	97	89	21	96	111	43	91	105
Average Queue (ft)	91	69	18	25	36	2	11	30	9	23	37
95th Queue (ft)	163	150	54	70	72	11	53	77	34	66	86
Link Distance (ft)		4350			1401			1122		1112	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100		100	125		50	100		150		150
Storage Blk Time (%)	9	1	1		6		0	0		0	
Queuing Penalty (veh)	8	2	2		2		1	0		0	

Intersection: 10: Hammond Ave & Winter St

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	111	71	42	26	111	26	276	20	50	164	72
Average Queue (ft)	63	36	6	2	53	3	104	1	17	60	12
95th Queue (ft)	98	76	24	13	105	18	189	10	43	129	40
Link Distance (ft)		1401			1241		1189			1134	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	75		75	75		75		100	75		125
Storage Blk Time (%)	15	2			7		9			5	
Queuing Penalty (veh)	6	2			0		1			4	

Network Summary

Network wide Queuing Penalty: 26

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	103	62	69	82
Future Volume (vph)	0	0	103	62	69	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.927	
Flt Protected				0.970		
Satd. Flow (prot)	0	0	0	1688	1480	0
Flt Permitted				0.970		
Satd. Flow (perm)	0	0	0	1688	1480	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	815			723	630	
Travel Time (s)	22.2			19.7	17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	21%	6%	30%
Adj. Flow (vph)	0	0	114	69	77	91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	183	168	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 24.3%	ICU Level of Service A
Analysis Period (min) 15	

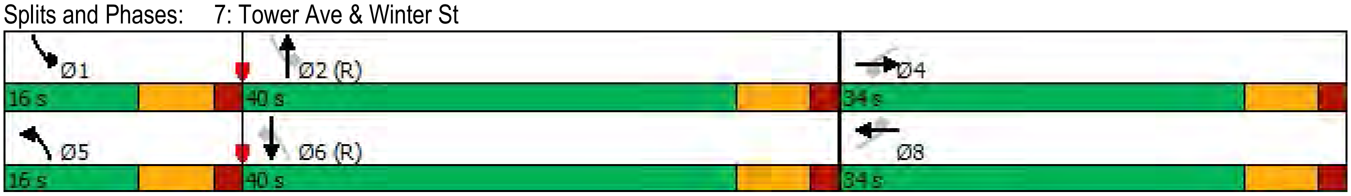
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	61	25	53	56	14	22	173	51	20	205	86
Future Volume (vph)	88	61	25	53	56	14	22	173	51	20	205	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	125		50	100		150	100		150
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1517	1638	1392	1656	1667	1335	1421	1759	1583	1570	1792	1313
Flt Permitted	0.717			0.713			0.616			0.637		
Satd. Flow (perm)	1145	1638	1392	1243	1667	1335	922	1759	1583	1052	1792	1313
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		4424			1494			1169			1158	
Travel Time (s)		120.7			40.7			31.9			31.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	19%	16%	16%	9%	14%	21%	27%	8%	2%	15%	6%	23%
Adj. Flow (vph)	98	68	28	59	62	16	24	192	57	22	228	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	68	28	59	62	16	24	192	57	22	228	96
Turn Type	D.Pm	NA	Perm	D.Pm	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	8		4	4		8	6		2	2		6
Detector Phase	8	4	4	4	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	14.0	25.0	25.0	14.0	25.0	25.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	16.0	40.0	40.0	16.0	40.0	40.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	37.8%	37.8%	17.8%	44.4%	44.4%	17.8%	44.4%	44.4%
Maximum Green (s)	27.0	27.0	27.0	27.0	27.0	27.0	9.0	33.0	33.0	9.0	33.0	33.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	15.1	15.1	15.1	15.1	15.1	15.1	65.7	63.1	63.1	65.7	63.1	63.1
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17	0.17	0.73	0.70	0.70	0.73	0.70	0.70
v/c Ratio	0.51	0.25	0.12	0.28	0.22	0.07	0.03	0.16	0.05	0.03	0.18	0.10
Control Delay	42.4	32.9	30.6	35.2	33.1	30.1	5.0	8.6	9.0	4.9	8.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	32.9	30.6	35.2	33.1	30.1	5.0	8.6	9.0	4.9	8.7	9.0
LOS	D	C	C	D	C	C	A	A	A	A	A	A
Approach Delay		37.4			33.6			8.4			8.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			C			A			A	
Queue Length 50th (ft)	51	34	14	33	35	9	3	29	8	3	34	14
Queue Length 95th (ft)	94	66	35	67	69	22	13	100	36	12	117	56
Internal Link Dist (ft)		4344			1414			1089			1078	
Turn Bay Length (ft)	100		100	125		50	100		150	100		150
Base Capacity (vph)	368	527	448	400	537	430	742	1233	1110	840	1257	921
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.13	0.06	0.15	0.12	0.04	0.03	0.16	0.05	0.03	0.18	0.10

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 18.0 Intersection LOS: B
Intersection Capacity Utilization 38.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Tower Ave & Winter St

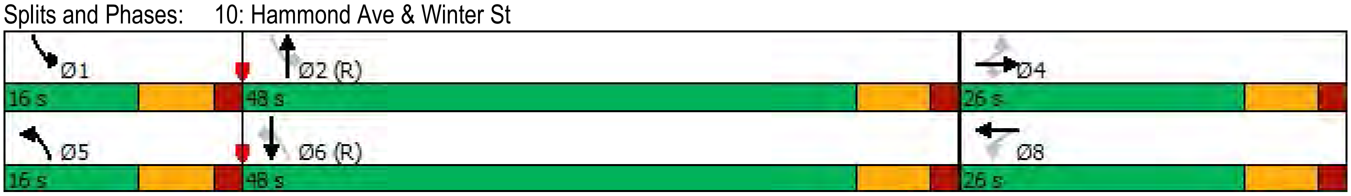


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	46	15	8	43	23	7	321	5	16	285	56
Future Volume (vph)	70	46	15	8	43	23	7	321	5	16	285	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		75	75		0	75		100	75		125
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.947				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1484	1583	1770	1541	0	1770	1863	1583	1597	1863	1455
Flt Permitted	0.709			0.724			0.555			0.522		
Satd. Flow (perm)	1308	1484	1583	1349	1541	0	1034	1863	1583	878	1863	1455
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1494			1288			1236			1169	
Travel Time (s)		40.7			35.1			28.1			26.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	28%	2%	2%	21%	9%	2%	2%	2%	13%	2%	11%
Adj. Flow (vph)	78	51	17	9	48	26	8	357	6	18	317	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	51	17	9	74	0	8	357	6	18	317	62
Turn Type	Perm	NA	Perm	Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			6		2	2		6
Detector Phase	4	4	4	8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		14.0	20.0	20.0	14.0	20.0	20.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0		16.0	48.0	48.0	16.0	48.0	48.0
Total Split (%)	28.9%	28.9%	28.9%	28.9%	28.9%		17.8%	53.3%	53.3%	17.8%	53.3%	53.3%
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0		9.0	41.0	41.0	9.0	41.0	41.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	12.9	12.9	12.9	12.9	12.9		68.9	65.3	65.3	67.9	68.1	68.1
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14		0.77	0.73	0.73	0.75	0.76	0.76
v/c Ratio	0.42	0.24	0.08	0.05	0.34		0.01	0.26	0.01	0.02	0.22	0.06
Control Delay	47.7	42.3	38.8	31.5	37.7		3.9	7.9	8.4	3.9	6.2	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	42.3	38.8	31.5	37.7		3.9	7.9	8.4	3.9	6.2	6.2
LOS	D	D	D	C	D		A	A	A	A	A	A
Approach Delay		44.8			37.1			7.8			6.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			A			A	
Queue Length 50th (ft)	45	29	10	5	38		1	51	1	2	44	8
Queue Length 95th (ft)	88	63	30	17	75		5	168	7	9	147	35
Internal Link Dist (ft)		1414			1208			1156			1089	
Turn Bay Length (ft)	75		75	75			75		100	75		125
Base Capacity (vph)	305	346	369	314	359		886	1351	1148	758	1409	1101
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.15	0.05	0.03	0.21		0.01	0.26	0.01	0.02	0.22	0.06

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 39.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 10: Hammond Ave & Winter St



Intersection: 2: Susquehanna Ave & US 2 WB On-Ramp

Movement	NB
Directions Served	LT
Maximum Queue (ft)	54
Average Queue (ft)	14
95th Queue (ft)	42
Link Distance (ft)	707
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Tower Ave & Winter St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	150	95	61	136	163	62	98	133	43	189	166	125
Average Queue (ft)	73	41	12	42	44	15	15	45	12	22	67	31
95th Queue (ft)	130	78	38	94	111	50	51	107	32	82	138	89
Link Distance (ft)		4350			1401			1122			1112	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100		100	125		50	100		150	100		150
Storage Blk Time (%)	7	0		1	8	7	0	2			2	
Queuing Penalty (veh)	6	0		1	5	7	0	1			3	

Intersection: 10: Hammond Ave & Winter St

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	125	83	39	47	149	26	152	19	31	118	71
Average Queue (ft)	54	35	10	8	36	3	55	1	7	58	29
95th Queue (ft)	94	79	30	29	90	15	111	7	27	114	65
Link Distance (ft)		1401			1241		1189			1134	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	75		75	75		75		100	75		125
Storage Blk Time (%)	7	2			3		2			4	
Queuing Penalty (veh)	4	2			0		0			3	

Network Summary

Network wide Queuing Penalty: 33

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	248	226	43	180
Future Volume (vph)	0	0	248	226	43	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.891	
Flt Protected				0.974		
Satd. Flow (prot)	0	0	0	1773	1174	0
Flt Permitted				0.974		
Satd. Flow (perm)	0	0	0	1773	1174	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	815			723	630	
Travel Time (s)	22.2			19.7	17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	7%	16%	51%
Adj. Flow (vph)	0	0	276	251	48	200
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	527	248	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 45.6%	ICU Level of Service A
Analysis Period (min) 15	

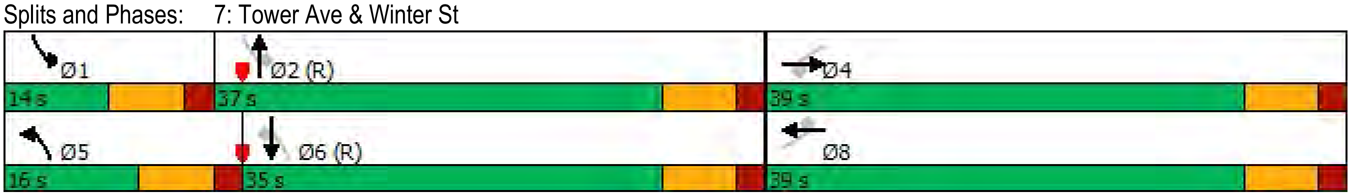
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	102	22	35	93	3	35	180	71	3	108	144
Future Volume (vph)	158	102	22	35	93	3	35	180	71	3	108	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	125		50	100		150	100		150
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1543	1624	1233	1570	1624	1583	1308	1845	1524	1770	1727	1357
Flt Permitted	0.690			0.684			0.680			0.632		
Satd. Flow (perm)	1121	1624	1233	1130	1624	1583	936	1845	1524	1177	1727	1357
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		4424			1494			1169			1158	
Travel Time (s)		120.7			40.7			31.9			31.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	17%	17%	31%	15%	17%	2%	38%	3%	6%	2%	10%	19%
Adj. Flow (vph)	176	113	24	39	103	3	39	200	79	3	120	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	113	24	39	103	3	39	200	79	3	120	160
Turn Type	D.Pm	NA	Perm	D.Pm	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	8		4	4		8	6		2	2		6
Detector Phase	8	4	4	4	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	14.0	25.0	25.0	14.0	25.0	25.0
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	16.0	37.0	37.0	14.0	35.0	35.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	17.8%	41.1%	41.1%	15.6%	38.9%	38.9%
Maximum Green (s)	32.0	32.0	32.0	32.0	32.0	32.0	9.0	30.0	30.0	7.0	28.0	28.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	21.6	21.6	21.6	21.6	21.6	21.6	55.4	55.6	55.6	57.4	49.6	49.6
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.62	0.62	0.62	0.64	0.55	0.55
v/c Ratio	0.65	0.29	0.08	0.14	0.26	0.01	0.06	0.18	0.08	0.00	0.13	0.21
Control Delay	41.2	27.8	23.7	25.0	27.1	22.3	8.2	10.8	11.0	8.3	14.3	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.2	27.8	23.7	25.0	27.1	22.3	8.2	10.8	11.0	8.3	14.3	15.3
LOS	D	C	C	C	C	C	A	B	B	A	B	B
Approach Delay		35.1			26.4			10.6			14.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	91	53	11	21	56	1	7	40	15	1	36	50
Queue Length 95th (ft)	140	86	27	37	75	m6	24	127	58	5	84	114
Internal Link Dist (ft)		4344			1414			1089			1078	
Turn Bay Length (ft)	100		100	125		50	100		150	100		150
Base Capacity (vph)	423	613	465	426	613	598	630	1139	940	809	952	748
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.18	0.05	0.09	0.17	0.01	0.06	0.18	0.08	0.00	0.13	0.21

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 21.1	Intersection LOS: C
Intersection Capacity Utilization 36.6%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tower Ave & Winter St



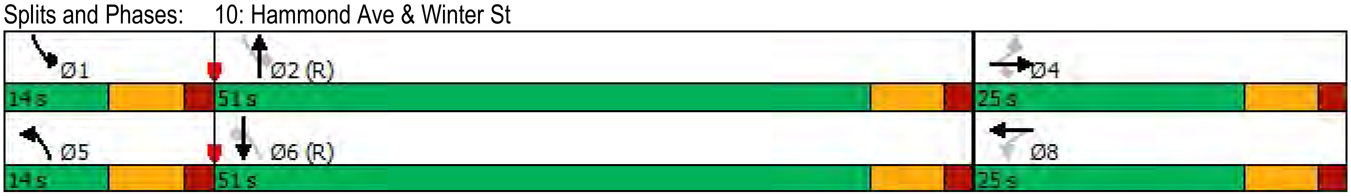
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	47	7	7	71	46	5	586	4	38	387	66
Future Volume (vph)	127	47	7	7	71	46	5	586	4	38	387	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		75	75		0	75		100	75		125
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.941				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	1545	1583	1770	1498	0	1770	1863	1583	1583	1863	1583
Flt Permitted	0.645			0.723			0.456			0.286		
Satd. Flow (perm)	1167	1545	1583	1347	1498	0	849	1863	1583	477	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1494			1288			1236			1169	
Travel Time (s)		40.7			35.1			28.1			26.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	23%	2%	2%	26%	9%	2%	2%	2%	14%	2%	2%
Adj. Flow (vph)	141	52	8	8	79	51	6	651	4	42	430	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	52	8	8	130	0	6	651	4	42	430	73
Turn Type	Perm	NA	Perm	Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			6		2	2		6
Detector Phase	4	4	4	8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		14.0	20.0	20.0	14.0	20.0	20.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0		14.0	51.0	51.0	14.0	51.0	51.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	27.8%		15.6%	56.7%	56.7%	15.6%	56.7%	56.7%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		7.0	44.0	44.0	7.0	44.0	44.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.7	16.7	16.7	16.7	16.7		62.3	54.9	54.9	60.3	60.5	60.5
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19		0.69	0.61	0.61	0.67	0.67	0.67
v/c Ratio	0.65	0.18	0.03	0.03	0.47		0.01	0.57	0.00	0.10	0.34	0.07
Control Delay	62.4	44.6	41.7	28.1	37.6		5.0	15.6	10.8	5.6	8.9	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	44.6	41.7	28.1	37.6		5.0	15.6	10.8	5.6	8.9	7.6
LOS	E	D	D	C	D		A	B	B	A	A	A
Approach Delay		56.9			37.0			15.5			8.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			D			B			A	
Queue Length 50th (ft)	83	30	4	4	65		1	249	1	7	85	12
Queue Length 95th (ft)	144	64	18	15	117		5	390	6	17	223	42
Internal Link Dist (ft)		1414			1208			1156			1089	
Turn Bay Length (ft)	75		75	75			75		100	75		125
Base Capacity (vph)	259	343	351	299	332		679	1136	966	430	1252	1064
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.15	0.02	0.03	0.39		0.01	0.57	0.00	0.10	0.34	0.07

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 20.3 Intersection LOS: C
Intersection Capacity Utilization 53.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 10: Hammond Ave & Winter St



Intersection: 2: Susquehanna Ave & US 2 WB On-Ramp

Movement	NB	SB
Directions Served	LT	TR
Maximum Queue (ft)	141	59
Average Queue (ft)	58	3
95th Queue (ft)	138	24
Link Distance (ft)	707	573
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Tower Ave & Winter St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	173	169	58	70	173	21	74	108	82	26	254	239
Average Queue (ft)	98	68	14	25	62	1	19	42	17	1	43	64
95th Queue (ft)	153	152	40	59	130	10	60	78	51	8	125	155
Link Distance (ft)		4350			1401			1122			1112	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100		100	125		50	100		150	100		150
Storage Blk Time (%)	14	1			13			0			1	0
Queuing Penalty (veh)	17	2			5			0			1	0

Intersection: 10: Hammond Ave & Winter St

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	174	218	40	174	178	26	281	41	68	162	52
Average Queue (ft)	94	48	8	12	72	1	125	3	16	88	11
95th Queue (ft)	162	139	26	66	149	9	228	17	52	149	41
Link Distance (ft)		1401			1241		1189			1134	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	75		75	75		75		100	75		125
Storage Blk Time (%)	39	4			11		13		0	10	
Queuing Penalty (veh)	21	5			1		1		0	11	

Network Summary

Network wide Queuing Penalty: 65

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	139	84	93	110
Future Volume (vph)	0	0	139	84	93	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.927	
Flt Protected				0.970		
Satd. Flow (prot)	0	0	0	1688	1480	0
Flt Permitted				0.970		
Satd. Flow (perm)	0	0	0	1688	1480	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	815			723	630	
Travel Time (s)	22.2			19.7	17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	21%	6%	30%
Adj. Flow (vph)	0	0	154	93	103	122
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	247	225	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 30.4%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	82	34	71	75	19	30	233	69	27	276	116
Future Volume (vph)	119	82	34	71	75	19	30	233	69	27	276	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	125		50	100		150	100		150
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1517	1638	1392	1656	1667	1335	1421	1759	1583	1570	1792	1313
Flt Permitted	0.703			0.698			0.539			0.580		
Satd. Flow (perm)	1122	1638	1392	1217	1667	1335	806	1759	1583	958	1792	1313
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		4424			1494			1169			1158	
Travel Time (s)		120.7			40.7			31.9			31.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	19%	16%	16%	9%	14%	21%	27%	8%	2%	15%	6%	23%
Adj. Flow (vph)	132	91	38	79	83	21	33	259	77	30	307	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	91	38	79	83	21	33	259	77	30	307	129
Turn Type	D.Pm	NA	Perm	D.Pm	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	8		4	4		8	6		2	2		6
Detector Phase	8	4	4	4	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	14.0	25.0	25.0	14.0	25.0	25.0
Total Split (s)	32.0	32.0	32.0	32.0	32.0	32.0	16.0	42.0	42.0	16.0	42.0	42.0
Total Split (%)	35.6%	35.6%	35.6%	35.6%	35.6%	35.6%	17.8%	46.7%	46.7%	17.8%	46.7%	46.7%
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	9.0	35.0	35.0	9.0	35.0	35.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	59.0	53.6	53.6	59.0	53.5	53.5
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.66	0.60	0.60	0.66	0.59	0.59
v/c Ratio	0.59	0.28	0.14	0.33	0.25	0.08	0.06	0.25	0.08	0.04	0.29	0.17
Control Delay	42.4	30.7	28.1	33.0	30.4	26.9	6.4	12.3	11.9	6.3	12.8	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	30.7	28.1	33.0	30.4	26.9	6.4	12.3	11.9	6.3	12.8	12.4
LOS	D	C	C	C	C	C	A	B	B	A	B	B
Approach Delay		36.2			31.1			11.7			12.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	69	44	18	43	45	11	5	76	20	5	92	36
Queue Length 95th (ft)	115	77	40	78	63	23	18	150	51	17	180	82
Internal Link Dist (ft)		4344			1414			1089			1078	
Turn Bay Length (ft)	100		100	125		50	100		150	100		150
Base Capacity (vph)	336	491	417	365	500	400	613	1047	942	715	1065	780
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.19	0.09	0.22	0.17	0.05	0.05	0.25	0.08	0.04	0.29	0.17

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 19.7 Intersection LOS: B

Intersection Capacity Utilization 46.1% ICU Level of Service A

Analysis Period (min) 15

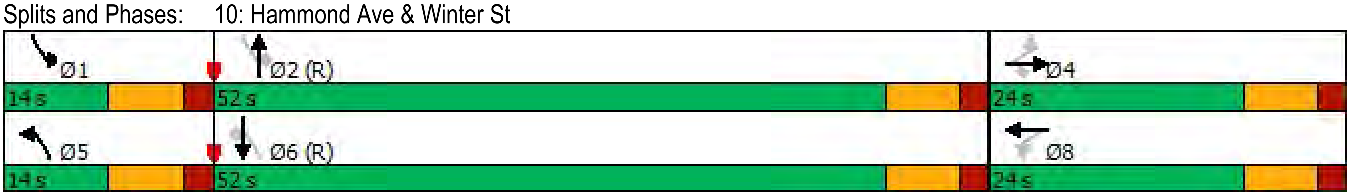
Splits and Phases: 7: Tower Ave & Winter St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	62	20	11	58	31	9	432	7	22	384	75
Future Volume (vph)	94	62	20	11	58	31	9	432	7	22	384	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		75	75		0	75		100	75		125
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.948				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1484	1583	1770	1542	0	1770	1863	1583	1597	1863	1455
Flt Permitted	0.694			0.712			0.472			0.430		
Satd. Flow (perm)	1280	1484	1583	1326	1542	0	879	1863	1583	723	1863	1455
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1494			1288			1236			1169	
Travel Time (s)		40.7			35.1			28.1			26.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	28%	2%	2%	21%	9%	2%	2%	2%	13%	2%	11%
Adj. Flow (vph)	104	69	22	12	64	34	10	480	8	24	427	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	69	22	12	98	0	10	480	8	24	427	83
Turn Type	Perm	NA	Perm	Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			6		2	2		6
Detector Phase	4	4	4	8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		14.0	20.0	20.0	14.0	20.0	20.0
Total Split (s)	24.0	24.0	24.0	24.0	24.0		14.0	52.0	52.0	14.0	52.0	52.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%		15.6%	57.8%	57.8%	15.6%	57.8%	57.8%
Maximum Green (s)	17.0	17.0	17.0	17.0	17.0		7.0	45.0	45.0	7.0	45.0	45.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	14.3	14.3	14.3	14.3	14.3		67.5	63.9	63.9	66.5	66.7	66.7
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16		0.75	0.71	0.71	0.74	0.74	0.74
v/c Ratio	0.51	0.29	0.09	0.06	0.40		0.01	0.36	0.01	0.04	0.31	0.08
Control Delay	49.3	41.5	37.2	30.3	37.7		4.4	9.7	9.1	4.5	7.5	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	41.5	37.2	30.3	37.7		4.4	9.7	9.1	4.5	7.5	6.7
LOS	D	D	D	C	D		A	A	A	A	A	A
Approach Delay		45.2			36.9			9.6			7.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			A			A	
Queue Length 50th (ft)	60	39	12	6	50		1	84	1	3	72	11
Queue Length 95th (ft)	110	78	35	20	93		6	249	9	11	215	46
Internal Link Dist (ft)		1414			1208			1156			1089	
Turn Bay Length (ft)	75		75	75			75		100	75		125
Base Capacity (vph)	270	313	334	279	325		748	1321	1123	621	1379	1077
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.22	0.07	0.04	0.30		0.01	0.36	0.01	0.04	0.31	0.08

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 16.1	Intersection LOS: B
Intersection Capacity Utilization 44.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 10: Hammond Ave & Winter St



Intersection: 2: Susquehanna Ave & US 2 WB On-Ramp

Movement	NB	SB
Directions Served	LT	TR
Maximum Queue (ft)	77	20
Average Queue (ft)	24	1
95th Queue (ft)	64	6
Link Distance (ft)	707	573
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Tower Ave & Winter St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	131	200	96	137	186	150	74	132	66	68	152	152
Average Queue (ft)	71	70	22	50	51	16	18	64	18	14	70	46
95th Queue (ft)	125	147	66	104	117	65	53	130	47	40	141	110
Link Distance (ft)		4350			1401			1122			1112	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100		100	125		50	100		150	100		150
Storage Blk Time (%)	6	6	1	1	12	1		3			3	0
Queuing Penalty (veh)	7	8	2	1	11	1		3			4	1

Intersection: 10: Hammond Ave & Winter St

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	174	177	43	48	164	48	210	20	78	160	90
Average Queue (ft)	79	57	9	9	57	5	106	1	17	83	22
95th Queue (ft)	139	128	28	30	123	24	174	9	52	151	58
Link Distance (ft)		1401			1241		1189			1134	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	75		75	75		75		100	75		125
Storage Blk Time (%)	22	7			7		9		0	9	
Queuing Penalty (veh)	18	8			1		1		2	9	

Network Summary

Network wide Queuing Penalty: 77

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	248	226	43	182
Future Volume (vph)	0	0	248	226	43	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.891	
Flt Protected				0.974		
Satd. Flow (prot)	0	0	0	1773	1173	0
Flt Permitted				0.974		
Satd. Flow (perm)	0	0	0	1773	1173	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	815			723	630	
Travel Time (s)	22.2			19.7	17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	7%	16%	51%
Adj. Flow (vph)	0	0	276	251	48	202
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	527	250	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 45.8%	ICU Level of Service A
Analysis Period (min) 15	

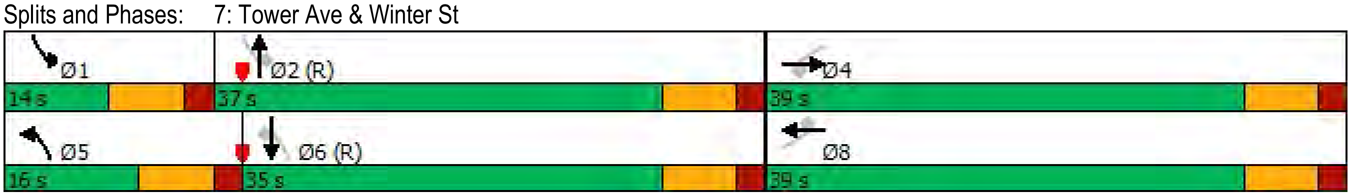
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	103	23	35	94	3	36	180	71	3	108	145
Future Volume (vph)	159	103	23	35	94	3	36	180	71	3	108	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	125		50	100		150	100		150
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1543	1624	1233	1570	1624	1583	1308	1845	1524	1770	1727	1357
Flt Permitted	0.690			0.684			0.680			0.632		
Satd. Flow (perm)	1121	1624	1233	1130	1624	1583	936	1845	1524	1177	1727	1357
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		4424			1494			1169			1158	
Travel Time (s)		120.7			40.7			31.9			31.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	17%	17%	31%	15%	17%	2%	38%	3%	6%	2%	10%	19%
Adj. Flow (vph)	177	114	26	39	104	3	40	200	79	3	120	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	177	114	26	39	104	3	40	200	79	3	120	161
Turn Type	D.Pm	NA	Perm	D.Pm	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	8		4	4		8	6		2	2		6
Detector Phase	8	4	4	4	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	14.0	25.0	25.0	14.0	25.0	25.0
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	16.0	37.0	37.0	14.0	35.0	35.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	17.8%	41.1%	41.1%	15.6%	38.9%	38.9%
Maximum Green (s)	32.0	32.0	32.0	32.0	32.0	32.0	9.0	30.0	30.0	7.0	28.0	28.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	21.7	21.7	21.7	21.7	21.7	21.7	55.3	55.5	55.5	57.3	49.6	49.6
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.61	0.62	0.62	0.64	0.55	0.55
v/c Ratio	0.66	0.29	0.09	0.14	0.27	0.01	0.07	0.18	0.08	0.00	0.13	0.22
Control Delay	41.3	27.8	23.8	24.9	27.1	22.0	8.2	10.8	11.1	8.3	14.4	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	27.8	23.8	24.9	27.1	22.0	8.2	10.8	11.1	8.3	14.4	15.4
LOS	D	C	C	C	C	C	A	B	B	A	B	B
Approach Delay		35.0			26.4			10.6			14.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	91	53	12	21	57	2	7	40	15	1	36	50
Queue Length 95th (ft)	141	86	28	38	75	m6	25	127	58	5	84	114
Internal Link Dist (ft)		4344			1414			1089			1078	
Turn Bay Length (ft)	100		100	125		50	100		150	100		150
Base Capacity (vph)	423	613	465	426	613	598	629	1137	939	808	950	747
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.19	0.06	0.09	0.17	0.01	0.06	0.18	0.08	0.00	0.13	0.22

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 21.1 Intersection LOS: C
Intersection Capacity Utilization 36.6% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tower Ave & Winter St

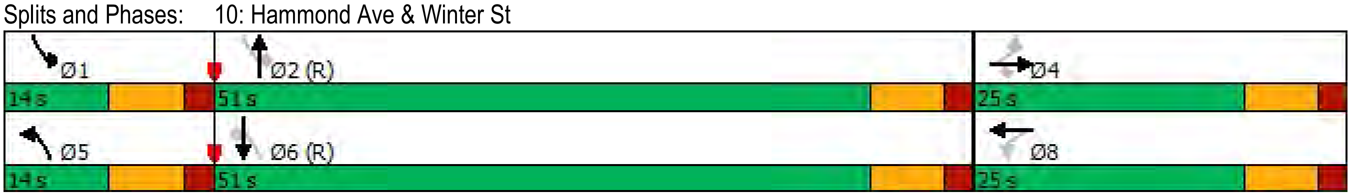


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	47	7	7	71	46	5	586	4	38	387	67
Future Volume (vph)	128	47	7	7	71	46	5	586	4	38	387	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		75	75		0	75		100	75		125
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.941				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	1545	1583	1770	1498	0	1770	1863	1583	1583	1863	1583
Flt Permitted	0.645			0.723			0.456			0.286		
Satd. Flow (perm)	1167	1545	1583	1347	1498	0	849	1863	1583	477	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1494			1288			1236			1169	
Travel Time (s)		40.7			35.1			28.1			26.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	23%	2%	2%	26%	9%	2%	2%	2%	14%	2%	2%
Adj. Flow (vph)	142	52	8	8	79	51	6	651	4	42	430	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	52	8	8	130	0	6	651	4	42	430	74
Turn Type	Perm	NA	Perm	Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			6		2	2		6
Detector Phase	4	4	4	8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		14.0	20.0	20.0	14.0	20.0	20.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0		14.0	51.0	51.0	14.0	51.0	51.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	27.8%		15.6%	56.7%	56.7%	15.6%	56.7%	56.7%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		7.0	44.0	44.0	7.0	44.0	44.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.7	16.7	16.7	16.7	16.7		62.3	54.9	54.9	60.3	60.5	60.5
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19		0.69	0.61	0.61	0.67	0.67	0.67
v/c Ratio	0.66	0.18	0.03	0.03	0.47		0.01	0.57	0.00	0.10	0.34	0.07
Control Delay	62.6	44.7	41.6	28.1	37.6		5.0	15.7	10.8	5.6	8.9	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	44.7	41.6	28.1	37.6		5.0	15.7	10.8	5.6	8.9	7.6
LOS	E	D	D	C	D		A	B	B	A	A	A
Approach Delay		57.2			37.0			15.5			8.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			D			B			A	
Queue Length 50th (ft)	84	30	4	4	65		1	250	1	7	85	12
Queue Length 95th (ft)	144	65	18	15	117		5	390	6	17	223	43
Internal Link Dist (ft)		1414			1208			1156			1089	
Turn Bay Length (ft)	75		75	75			75		100	75		125
Base Capacity (vph)	259	343	351	299	332		679	1136	965	430	1252	1064
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.15	0.02	0.03	0.39		0.01	0.57	0.00	0.10	0.34	0.07

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 20.4	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 10: Hammond Ave & Winter St



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	282	270	5	3	2
Future Volume (vph)	0	282	270	5	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.997		0.946	
Flt Protected					0.971	
Satd. Flow (prot)	0	1712	1692	0	970	0
Flt Permitted					0.971	
Satd. Flow (perm)	0	1712	1692	0	970	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		1769	4424		719	
Travel Time (s)		48.2	120.7		19.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	60%	11%	11%	60%	80%	80%
Adj. Flow (vph)	0	313	300	6	3	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	313	306	0	5	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 24.8%	ICU Level of Service A
Analysis Period (min) 15	

Intersection						
Int Delay, s/veh	0.1					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	282	270	5	3	2
Future Vol, veh/h	0	282	270	5	3	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	60	11	11	60	80	80
Mvmt Flow	0	313	300	6	3	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	306	0	-	0	616	303
Stage 1	-	-	-	-	303	-
Stage 2	-	-	-	-	313	-
Critical Hdwy	4.7	-	-	-	7.2	7
Critical Hdwy Stg 1	-	-	-	-	6.2	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	2.74	-	-	-	4.22	4.02
Pot Cap-1 Maneuver	988	-	-	-	349	586
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	594	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	988	-	-	-	349	586
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	594	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	988	-	-	-	416
HCM Lane V/C Ratio	-	-	-	-	0.013
HCM Control Delay (s)	0	-	-	-	13.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection: 2: Susquehanna Ave & US 2 WB On-Ramp

Movement	NB	SB
Directions Served	LT	TR
Maximum Queue (ft)	163	59
Average Queue (ft)	42	4
95th Queue (ft)	117	26
Link Distance (ft)	707	573
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Tower Ave & Winter St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	197	224	83	134	110	20	102	151	45	27	67	127
Average Queue (ft)	105	79	16	37	61	1	23	50	16	4	27	52
95th Queue (ft)	192	174	51	90	111	7	69	109	44	18	58	115
Link Distance (ft)		4345			1401			1122			1112	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100		100	125		50	100		150	100		150
Storage Blk Time (%)	13	5	0	1	17		1	1				
Queuing Penalty (veh)	16	9	0	1	6		3	1				

Intersection: 10: Hammond Ave & Winter St

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	174	351	21	47	164	26	408	10	73	198	73
Average Queue (ft)	101	69	3	5	90	3	153	0	27	89	26
95th Queue (ft)	167	232	15	24	149	16	281	3	58	162	61
Link Distance (ft)		1401			1241		1189			1134	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	75		75	75		75		100	75		125
Storage Blk Time (%)	40	3			19		19		1	10	
Queuing Penalty (veh)	22	5			1		2		3	10	

Intersection: 13: Winter St & Site Driveway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	5
95th Queue (ft)	31
Link Distance (ft)	683
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 78

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	139	84	93	112
Future Volume (vph)	0	0	139	84	93	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.926	
Flt Protected				0.970		
Satd. Flow (prot)	0	0	0	1688	1477	0
Flt Permitted				0.970		
Satd. Flow (perm)	0	0	0	1688	1477	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	815			723	630	
Travel Time (s)	22.2			19.7	17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	21%	6%	30%
Adj. Flow (vph)	0	0	154	93	103	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	247	227	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 30.5%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	83	35	71	76	19	31	233	69	27	276	117
Future Volume (vph)	120	83	35	71	76	19	31	233	69	27	276	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	125		50	100		150	100		150
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1517	1638	1392	1656	1667	1335	1421	1759	1583	1570	1792	1313
Flt Permitted	0.702			0.697			0.539			0.580		
Satd. Flow (perm)	1121	1638	1392	1215	1667	1335	806	1759	1583	958	1792	1313
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		4424			1494			1169			1158	
Travel Time (s)		120.7			40.7			31.9			31.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	19%	16%	16%	9%	14%	21%	27%	8%	2%	15%	6%	23%
Adj. Flow (vph)	133	92	39	79	84	21	34	259	77	30	307	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	92	39	79	84	21	34	259	77	30	307	130
Turn Type	D.Pm	NA	Perm	D.Pm	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	8		4	4		8	6		2	2		6
Detector Phase	8	4	4	4	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	14.0	25.0	25.0	14.0	25.0	25.0
Total Split (s)	32.0	32.0	32.0	32.0	32.0	32.0	16.0	42.0	42.0	16.0	42.0	42.0
Total Split (%)	35.6%	35.6%	35.6%	35.6%	35.6%	35.6%	17.8%	46.7%	46.7%	17.8%	46.7%	46.7%
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	9.0	35.0	35.0	9.0	35.0	35.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	59.0	53.5	53.5	59.0	53.4	53.4
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.66	0.59	0.59	0.66	0.59	0.59
v/c Ratio	0.59	0.28	0.14	0.33	0.25	0.08	0.06	0.25	0.08	0.04	0.29	0.17
Control Delay	42.4	30.7	28.0	32.8	30.5	27.1	6.4	12.4	11.9	6.3	12.8	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	30.7	28.0	32.8	30.5	27.1	6.4	12.4	11.9	6.3	12.8	12.4
LOS	D	C	C	C	C	C	A	B	B	A	B	B
Approach Delay		36.2			31.1			11.7			12.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	69	45	18	43	45	11	5	76	20	5	93	36
Queue Length 95th (ft)	116	78	41	78	63	22	19	150	51	17	180	83
Internal Link Dist (ft)		4344			1414			1089			1078	
Turn Bay Length (ft)	100		100	125		50	100		150	100		150
Base Capacity (vph)	336	491	417	364	500	400	612	1046	941	714	1063	779
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.19	0.09	0.22	0.17	0.05	0.06	0.25	0.08	0.04	0.29	0.17

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 19.7	Intersection LOS: B
Intersection Capacity Utilization 46.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 7: Tower Ave & Winter St

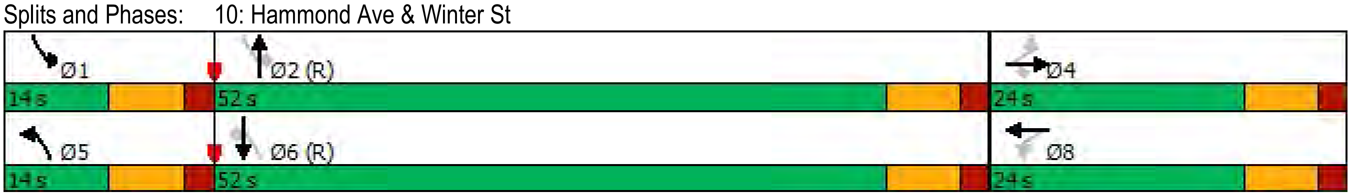
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	62	20	11	58	31	9	432	7	22	384	76
Future Volume (vph)	95	62	20	11	58	31	9	432	7	22	384	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		75	75		0	75		100	75		125
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.948				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1484	1583	1770	1542	0	1770	1863	1583	1597	1863	1455
Flt Permitted	0.694			0.712			0.472			0.430		
Satd. Flow (perm)	1280	1484	1583	1326	1542	0	879	1863	1583	723	1863	1455
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1494			1288			1236			1169	
Travel Time (s)		40.7			35.1			28.1			26.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	28%	2%	2%	21%	9%	2%	2%	2%	13%	2%	11%
Adj. Flow (vph)	106	69	22	12	64	34	10	480	8	24	427	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	69	22	12	98	0	10	480	8	24	427	84
Turn Type	Perm	NA	Perm	Perm	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			6		2	2		6
Detector Phase	4	4	4	8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		14.0	20.0	20.0	14.0	20.0	20.0
Total Split (s)	24.0	24.0	24.0	24.0	24.0		14.0	52.0	52.0	14.0	52.0	52.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%		15.6%	57.8%	57.8%	15.6%	57.8%	57.8%
Maximum Green (s)	17.0	17.0	17.0	17.0	17.0		7.0	45.0	45.0	7.0	45.0	45.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	14.4	14.4	14.4	14.4	14.4		67.4	63.8	63.8	66.4	66.6	66.6
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16		0.75	0.71	0.71	0.74	0.74	0.74
v/c Ratio	0.52	0.29	0.09	0.06	0.40		0.01	0.36	0.01	0.04	0.31	0.08
Control Delay	49.6	41.5	37.0	30.3	37.6		4.4	9.7	9.1	4.5	7.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	41.5	37.0	30.3	37.6		4.4	9.7	9.1	4.5	7.5	6.8
LOS	D	D	D	C	D		A	A	A	A	A	A
Approach Delay		45.3			36.8			9.6			7.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			A			A	
Queue Length 50th (ft)	61	39	12	6	50		1	84	1	3	72	12
Queue Length 95th (ft)	112	79	35	20	93		6	249	9	11	215	47
Internal Link Dist (ft)		1414			1208			1156			1089	
Turn Bay Length (ft)	75		75	75			75		100	75		125
Base Capacity (vph)	270	313	334	279	325		747	1320	1121	620	1378	1076
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.22	0.07	0.04	0.30		0.01	0.36	0.01	0.04	0.31	0.08

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 16.1 Intersection LOS: B
Intersection Capacity Utilization 44.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 10: Hammond Ave & Winter St



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	235	220	4	3	2
Future Volume (vph)	0	235	220	4	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.946	
Flt Protected					0.971	
Satd. Flow (prot)	0	1508	1500	0	1312	0
Flt Permitted					0.971	
Satd. Flow (perm)	0	1508	1500	0	1312	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		1769	4424		728	
Travel Time (s)		48.2	120.7		19.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	50%	26%	26%	50%	33%	33%
Adj. Flow (vph)	0	261	244	4	3	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	261	248	0	5	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 22.4%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	235	220	4	3	2
Future Vol, veh/h	0	235	220	4	3	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	50	26	26	50	33	33
Mvmt Flow	0	261	244	4	3	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	248	0	-	0	507	246
Stage 1	-	-	-	-	246	-
Stage 2	-	-	-	-	261	-
Critical Hdwy	4.6	-	-	-	6.73	6.53
Critical Hdwy Stg 1	-	-	-	-	5.73	-
Critical Hdwy Stg 2	-	-	-	-	5.73	-
Follow-up Hdwy	2.65	-	-	-	3.797	3.597
Pot Cap-1 Maneuver	1083	-	-	-	474	723
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1083	-	-	-	474	723
Mov Cap-2 Maneuver	-	-	-	-	474	-
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	716	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1083	-	-	-	550
HCM Lane V/C Ratio	-	-	-	-	0.01
HCM Control Delay (s)	0	-	-	-	11.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection: 2: Susquehanna Ave & US 2 WB On-Ramp

Movement	NB
Directions Served	LT
Maximum Queue (ft)	142
Average Queue (ft)	42
95th Queue (ft)	103
Link Distance (ft)	707
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Tower Ave & Winter St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	199	263	190	131	134	65	86	131	44	50	173	152
Average Queue (ft)	89	81	31	55	52	11	15	64	13	10	78	40
95th Queue (ft)	157	172	88	105	99	39	53	126	36	32	149	100
Link Distance (ft)		4344			1401			1122			1112	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100		100	125		50	100		150	100		150
Storage Blk Time (%)	10	5		1	16	2	0	2			5	0
Queuing Penalty (veh)	11	8		1	15	3	0	2			7	0

Intersection: 10: Hammond Ave & Winter St

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	172	242	21	45	112	26	183	20	50	162	88
Average Queue (ft)	69	64	8	15	51	5	78	1	14	86	18
95th Queue (ft)	132	150	24	39	103	22	163	7	44	162	57
Link Distance (ft)		1401			1241		1189			1134	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	75		75	75		75		100	75		125
Storage Blk Time (%)	16	10			6		7			8	
Queuing Penalty (veh)	13	12			1		1			8	

Intersection: 13: Winter St & Site Driveway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	55
Average Queue (ft)	10
95th Queue (ft)	39
Link Distance (ft)	693
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

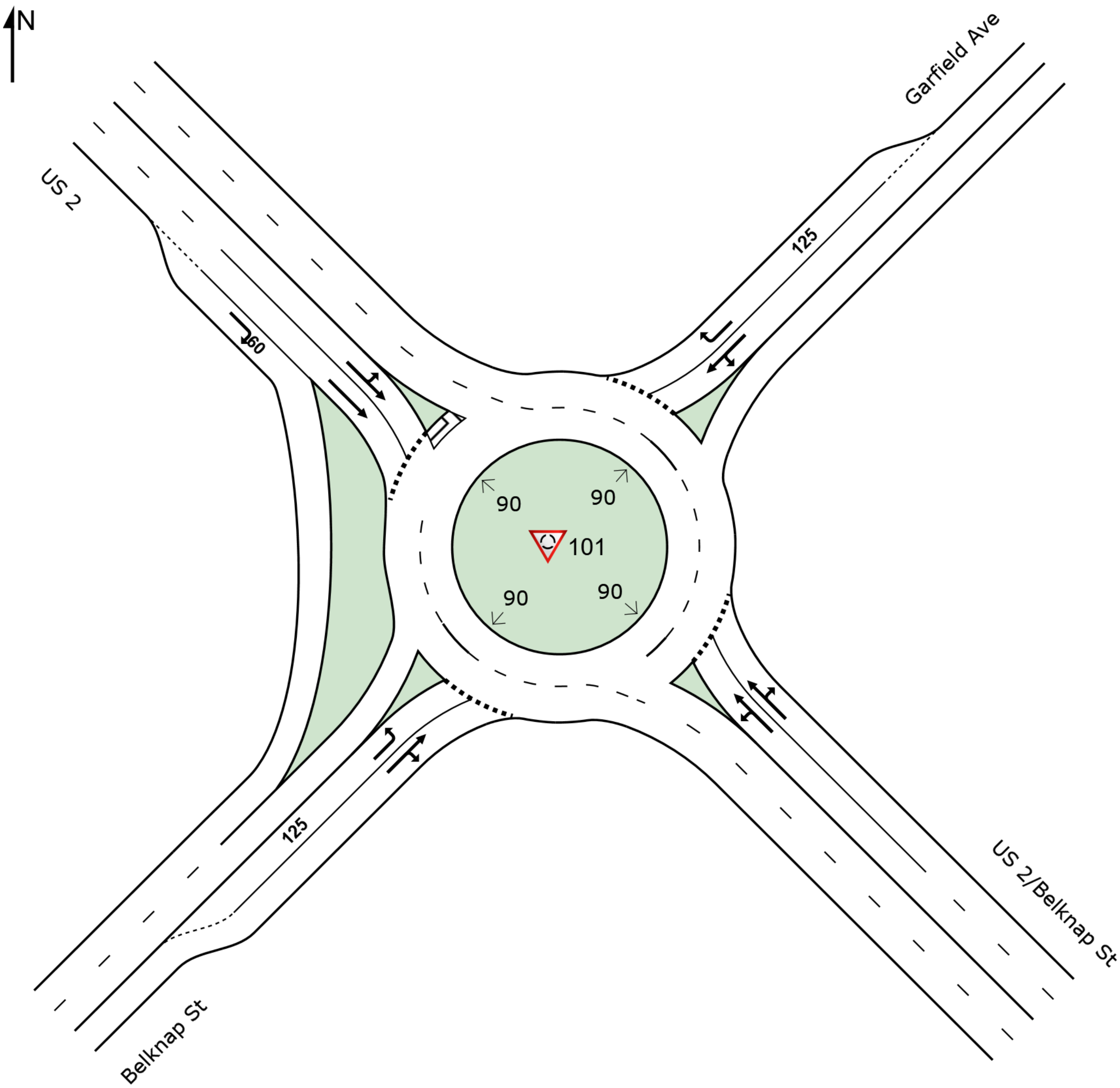
Network wide Queuing Penalty: 81

SITE LAYOUT

Site: 101 [US 2 & Belknap St - Existing AM (Site Folder: General)]

Superior Port Analysis
Site Category: Existing Design
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101 [US 2 & Belknap St - Existing AM (Site Folder: General)]

Superior Port Analysis
Site Category: Existing Design
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
SouthEast: US 2/Belknap St														
3x	L2	66	3.0	73	3.0	0.383	7.5	LOS A	2.1	57.1	0.46	0.34	0.46	25.6
8x	T1	606	9.0	673	9.0	0.383	7.7	LOS A	2.1	57.1	0.46	0.34	0.46	31.4
18x	R2	19	11.0	21	11.0	0.383	7.8	LOS A	2.1	57.5	0.46	0.34	0.46	24.8
Approach		691	8.5	768	8.5	0.383	7.7	LOS A	2.1	57.5	0.46	0.34	0.46	30.5
NorthEast: Garfield Ave														
1x	L2	10	20.0	11	20.0	0.028	7.0	LOS A	0.1	3.2	0.62	0.53	0.62	24.6
6x	T1	3	33.0	3	33.0	0.028	8.2	LOS A	0.1	3.2	0.62	0.53	0.62	22.9
16x	R2	11	64.0	12	64.0	0.043	13.6	LOS B	0.2	5.8	0.68	0.68	0.68	22.5
Approach		24	41.8	27	41.8	0.043	10.2	LOS B	0.2	5.8	0.64	0.60	0.64	23.4
NorthWest: US 2														
7x	L2	95	21.0	106	21.0	0.391	7.3	LOS A	3.0	80.2	0.38	0.20	0.38	30.3
4x	T1	800	7.0	889	7.0	0.391	6.5	LOS A	3.0	79.4	0.36	0.18	0.36	33.0
14x	R2	174	6.0	193	6.0	0.127	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	44.0
Approach		1069	8.1	1188	8.1	0.391	5.5	LOS A	3.0	80.2	0.30	0.15	0.30	34.1
SouthWest: Belknap St														
5x	L2	62	2.0	69	2.0	0.149	9.9	LOS A	0.6	14.9	0.67	0.67	0.67	26.8
2x	T1	21	2.0	23	2.0	0.250	8.8	LOS A	1.1	28.6	0.69	0.69	0.69	23.1
12x	R2	116	7.0	129	7.0	0.250	9.2	LOS A	1.1	28.6	0.69	0.69	0.69	24.2
Approach		199	4.9	221	4.9	0.250	9.4	LOS A	1.1	28.6	0.68	0.68	0.68	24.9
All Vehicles		1983	8.3	2203	8.3	0.391	6.7	LOS A	3.0	80.2	0.40	0.28	0.40	31.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [US 2 & Belknap St - Existing MD (Site Folder: General)]

Superior Port Analysis
Site Category: Existing Design
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
SouthEast: US 2/Belknap St														
3x	L2	106	2.0	118	2.0	0.335	6.2	LOS A	1.9	49.5	0.34	0.20	0.34	25.8
8x	T1	569	7.0	632	7.0	0.335	6.4	LOS A	1.9	49.5	0.34	0.20	0.34	32.0
18x	R2	15	13.0	17	13.0	0.335	6.7	LOS A	1.9	50.1	0.34	0.20	0.34	25.2
Approach		690	6.4	767	6.4	0.335	6.4	LOS A	1.9	50.1	0.34	0.20	0.34	30.7
NorthEast: Garfield Ave														
1x	L2	20	15.0	22	15.0	0.053	6.5	LOS A	0.2	5.8	0.59	0.53	0.59	24.8
6x	T1	8	25.0	9	25.0	0.053	7.3	LOS A	0.2	5.8	0.59	0.53	0.59	23.1
16x	R2	15	33.0	17	33.0	0.045	10.5	LOS B	0.2	5.1	0.63	0.61	0.63	25.3
Approach		43	23.1	48	23.1	0.053	8.0	LOS A	0.2	5.8	0.60	0.56	0.60	24.6
NorthWest: US 2														
7x	L2	48	42.0	53	42.0	0.376	8.4	LOS A	2.6	71.8	0.47	0.29	0.47	30.4
4x	T1	738	7.0	820	7.0	0.376	6.7	LOS A	2.7	70.7	0.45	0.27	0.45	33.0
14x	R2	116	9.0	129	9.0	0.087	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	43.4
Approach		902	9.1	1002	9.1	0.376	6.0	LOS A	2.7	71.8	0.39	0.24	0.39	33.9
SouthWest: Belknap St														
5x	L2	28	2.0	31	2.0	0.093	12.4	LOS B	0.3	8.7	0.68	0.68	0.68	26.1
2x	T1	15	13.0	17	13.0	0.225	9.1	LOS A	1.0	25.8	0.67	0.67	0.67	23.3
12x	R2	115	4.0	128	4.0	0.225	8.3	LOS A	1.0	25.8	0.67	0.67	0.67	24.4
Approach		158	4.5	176	4.5	0.225	9.1	LOS A	1.0	25.8	0.67	0.67	0.67	24.6
All Vehicles		1793	8.0	1992	8.0	0.376	6.5	LOS A	2.7	71.8	0.40	0.27	0.40	31.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [US 2 & Belknap St - 2042 No Build AM (Site Folder: General)]

Superior Port Analysis
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
SouthEast: US 2/Belknap St														
3x	L2	89	3.0	99	3.0	0.550	10.9	LOS B	4.5	118.7	0.62	0.58	0.73	24.7
8x	T1	816	9.0	907	9.0	0.550	11.2	LOS B	4.5	120.7	0.62	0.59	0.74	30.0
18x	R2	26	11.0	29	11.0	0.550	11.3	LOS B	4.5	120.7	0.62	0.59	0.74	23.9
Approach		931	8.5	1034	8.5	0.550	11.2	LOS B	4.5	120.7	0.62	0.59	0.74	29.1
NorthEast: Garfield Ave														
1x	L2	13	20.0	14	20.0	0.046	9.0	LOS A	0.2	5.5	0.70	0.67	0.70	24.1
6x	T1	4	33.0	4	33.0	0.046	10.7	LOS B	0.2	5.5	0.70	0.67	0.70	22.4
16x	R2	15	64.0	17	64.0	0.080	19.2	LOS C	0.3	10.9	0.78	0.78	0.78	21.3
Approach		32	42.3	36	42.3	0.080	14.0	LOS B	0.3	10.9	0.73	0.72	0.73	22.5
NorthWest: US 2														
7x	L2	128	21.0	142	21.0	0.547	10.0	LOS B	5.1	137.2	0.54	0.32	0.54	29.3
4x	T1	1077	7.0	1197	7.0	0.547	9.1	LOS A	5.2	136.8	0.52	0.30	0.52	31.8
14x	R2	234	6.0	260	6.0	0.171	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	43.9
Approach		1439	8.1	1599	8.1	0.547	7.7	LOS A	5.2	137.2	0.44	0.25	0.44	33.0
SouthWest: Belknap St														
5x	L2	84	2.0	93	2.0	0.263	15.2	LOS C	1.1	28.5	0.78	0.79	0.80	25.3
2x	T1	28	2.0	31	2.0	0.431	14.9	LOS B	2.4	63.1	0.81	0.93	1.08	21.7
12x	R2	156	7.0	173	7.0	0.431	15.5	LOS C	2.4	63.1	0.81	0.93	1.08	22.7
Approach		268	4.9	298	4.9	0.431	15.4	LOS C	2.4	63.1	0.80	0.89	0.99	23.3
All Vehicles		2670	8.3	2967	8.3	0.550	9.7	LOS A	5.2	137.2	0.54	0.44	0.60	30.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [US 2 & Belknap St - 2042 No Build MD (Site Folder: General)]

Superior Port Analysis
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
SouthEast: US 2/Belknap St														
3x	L2	143	2.0	159	2.0	0.472	8.3	LOS A	3.1	81.4	0.46	0.31	0.46	25.2
8x	T1	766	7.0	851	7.0	0.472	8.6	LOS A	3.1	81.4	0.46	0.31	0.46	31.1
18x	R2	20	13.0	22	13.0	0.472	8.9	LOS A	3.1	82.3	0.47	0.32	0.47	24.6
Approach		929	6.4	1032	6.4	0.472	8.6	LOS A	3.1	82.3	0.46	0.31	0.46	29.9
NorthEast: Garfield Ave														
1x	L2	27	15.0	30	15.0	0.086	8.2	LOS A	0.3	10.0	0.67	0.67	0.67	24.4
6x	T1	11	25.0	12	25.0	0.086	9.3	LOS A	0.3	10.0	0.67	0.67	0.67	22.7
16x	R2	20	33.0	22	33.0	0.077	13.9	LOS B	0.3	8.8	0.72	0.72	0.72	24.3
Approach		58	23.1	64	23.1	0.086	10.4	LOS B	0.3	10.0	0.69	0.68	0.69	24.0
NorthWest: US 2														
7x	L2	65	42.0	72	42.0	0.537	11.7	LOS B	4.4	121.0	0.63	0.46	0.63	29.2
4x	T1	994	7.0	1104	7.0	0.537	9.6	LOS A	4.6	120.8	0.62	0.43	0.62	31.7
14x	R2	156	9.0	173	9.0	0.117	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	43.4
Approach		1215	9.1	1350	9.1	0.537	8.5	LOS A	4.6	121.0	0.54	0.38	0.54	32.6
SouthWest: Belknap St														
5x	L2	38	2.0	42	2.0	0.160	17.1	LOS C	0.6	15.7	0.78	0.78	0.78	24.8
2x	T1	20	13.0	22	13.0	0.387	14.6	LOS B	2.1	54.3	0.79	0.88	0.98	22.1
12x	R2	155	4.0	172	4.0	0.387	13.5	LOS B	2.1	54.3	0.79	0.88	0.98	23.1
Approach		213	4.5	237	4.5	0.387	14.2	LOS B	2.1	54.3	0.79	0.86	0.95	23.3
All Vehicles		2415	8.0	2683	8.0	0.537	9.1	LOS A	4.6	121.0	0.54	0.40	0.55	30.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [US 2 & Belknap St - 2042 Build AM (Site Folder: General)]

Superior Port Analysis
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
SouthEast: US 2/Belknap St														
3x	L2	89	3.0	99	3.0	0.552	10.9	LOS B	4.5	120.2	0.62	0.59	0.74	24.7
8x	T1	816	9.0	907	9.0	0.552	11.2	LOS B	4.6	122.1	0.62	0.59	0.75	29.9
18x	R2	26	11.0	29	11.0	0.552	11.4	LOS B	4.6	122.1	0.62	0.60	0.75	23.9
Approach		931	8.5	1034	8.5	0.552	11.2	LOS B	4.6	122.1	0.62	0.59	0.75	29.1
NorthEast: Garfield Ave														
1x	L2	13	20.0	14	20.0	0.046	9.0	LOS A	0.2	5.5	0.70	0.67	0.70	24.1
6x	T1	4	33.0	4	33.0	0.046	10.7	LOS B	0.2	5.5	0.70	0.67	0.70	22.4
16x	R2	15	64.0	17	64.0	0.080	19.3	LOS C	0.3	10.9	0.78	0.78	0.78	21.3
Approach		32	42.3	36	42.3	0.080	14.0	LOS B	0.3	10.9	0.73	0.72	0.73	22.5
NorthWest: US 2														
7x	L2	130	21.0	144	21.0	0.548	10.1	LOS B	5.1	137.6	0.54	0.32	0.54	29.3
4x	T1	1077	7.0	1197	7.0	0.548	9.1	LOS A	5.2	137.5	0.52	0.30	0.52	31.8
14x	R2	234	6.0	260	6.0	0.171	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	43.9
Approach		1441	8.1	1601	8.1	0.548	7.7	LOS A	5.2	137.6	0.44	0.25	0.44	33.0
SouthWest: Belknap St														
5x	L2	84	2.0	93	2.0	0.265	15.3	LOS C	1.1	28.7	0.78	0.79	0.80	25.3
2x	T1	28	2.0	31	2.0	0.434	15.1	LOS C	2.4	63.4	0.81	0.94	1.09	21.7
12x	R2	156	7.0	173	7.0	0.434	15.7	LOS C	2.4	63.4	0.81	0.94	1.09	22.6
Approach		268	4.9	298	4.9	0.434	15.5	LOS C	2.4	63.4	0.80	0.89	1.00	23.3
All Vehicles		2672	8.3	2969	8.3	0.552	9.8	LOS A	5.2	137.6	0.54	0.44	0.60	30.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [US 2 & Belknap St - 2042 Build MD (Site Folder: General)]

Superior Port Analysis
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
SouthEast: US 2/Belknap St														
3x	L2	143	2.0	159	2.0	0.473	8.4	LOS A	3.1	81.6	0.46	0.31	0.46	25.2
8x	T1	766	7.0	851	7.0	0.473	8.6	LOS A	3.1	81.6	0.47	0.31	0.47	31.1
18x	R2	20	13.0	22	13.0	0.473	8.9	LOS A	3.1	82.5	0.47	0.32	0.47	24.6
Approach		929	6.4	1032	6.4	0.473	8.6	LOS A	3.1	82.5	0.47	0.31	0.47	29.8
NorthEast: Garfield Ave														
1x	L2	27	15.0	30	15.0	0.087	8.2	LOS A	0.3	10.0	0.67	0.67	0.67	24.4
6x	T1	11	25.0	12	25.0	0.087	9.3	LOS A	0.3	10.0	0.67	0.67	0.67	22.7
16x	R2	20	33.0	22	33.0	0.077	13.9	LOS B	0.3	8.8	0.72	0.72	0.72	24.3
Approach		58	23.1	64	23.1	0.087	10.4	LOS B	0.3	10.0	0.69	0.69	0.69	24.0
NorthWest: US 2														
7x	L2	66	42.0	73	42.0	0.539	11.7	LOS B	4.4	121.3	0.64	0.46	0.64	29.1
4x	T1	994	7.0	1104	7.0	0.539	9.6	LOS A	4.6	121.3	0.62	0.43	0.62	31.6
14x	R2	156	9.0	173	9.0	0.117	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	43.4
Approach		1216	9.2	1351	9.2	0.539	8.5	LOS A	4.6	121.3	0.54	0.38	0.54	32.6
SouthWest: Belknap St														
5x	L2	38	2.0	42	2.0	0.161	17.2	LOS C	0.6	15.7	0.78	0.78	0.78	24.7
2x	T1	20	13.0	22	13.0	0.389	14.7	LOS B	2.1	54.5	0.79	0.88	0.99	22.0
12x	R2	155	4.0	172	4.0	0.389	13.6	LOS B	2.1	54.5	0.79	0.88	0.99	23.0
Approach		213	4.5	237	4.5	0.389	14.3	LOS B	2.1	54.5	0.79	0.86	0.95	23.2
All Vehicles		2416	8.0	2684	8.0	0.539	9.1	LOS A	4.6	121.3	0.54	0.40	0.55	30.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX D: SYNCHRO FILES (ELECTRONIC)

APPENDIX E: DULUTH-SUPERIOR RAIL LINES MAP

The information on this map is a compilation of data from various federal, state, county, regional, and municipal sources. Geographic information has limitations due to the scale, resolution, date and interpretation of the original source materials. Users should consult available data documentation (metadata) to determine limitations and the precision to which the data depicts distance, direction, location or other geographic characteristics. These maps and/or data are not legal survey documents to be used for describing land for the purpose of ownership or title.

APPENDIX K

Noise and Vibration Study

Stantec

C. Reiss Company – Proposed Dock Redevelopment Noise and Vibration Impact Study

FINAL REPORT

June 3, 2022

Prepared for:

C. Reiss Company Co.
PO Box 16718,
Duluth, MN 55816

Prepared by:

Stantec Consulting Services Inc.
12080 Corporate Parkway, Suite
200 Mequon, WI 53092

Project Number: 193707141

Revision: 0

Senior Review Tracking Sheet

This tracking sheet if for internal use only, tracking sheet should be removed and stored as a separate file on network/SharePoint before sending externally.

Brief Guidance

Column 1 Author/Reviewer: the tracking begins (first row) with the name of the originating author. Thereafter, it is the name of a reviewer

Column 2 NOTES: the author may indicate what is missing or remains to be finalized; a reviewer provides high-level comments

Column 3 MEDIA: a reviewer indicates whether changes and comments are transmitted in/by: tracked changes, email message, email transfer of file, hard copy mark-up, telephone call, and/or network access

Column 4 DATE: date of transmittal of review

Column 5 SENT TO: originating author or reviewer indicates to whom the file is sent for the next stage

Use NA in cells that do not apply.

1	2	3	4	5
Author/Reviewer	**Notes**	**Media**	**Date**	**Sent To**
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Hiedi Waller	Draft Report - IR	Word	5/31/2022	Internal Samuel Arnold
Megan Lamb	Draft Report – QR	.doc	06/01/02	Internal Samuel Arnold

Limitations and Sign-off

The conclusions in the Report titled C. Reiss Company Proposed Superior Dock Site Noise and Vibration Impact Study are Stantec Consulting Services Inc's (Stantec) professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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Executive Summary

Stantec Consulting Services Inc. (Stantec) was retained by the C. Reiss Company, LLC (C. Reiss) to perform a noise and vibration impact study for the proposed redevelopment of a dock located in Superior, Wisconsin at approximately 46°44'13.8"N 92°07'17.0"W (the Site). The assessment was required by the Maritime Administration in support of an Environmental Assessment (EA) for the Site.

C. Reiss currently operates a stone and coal shipping marine facility in the Port of Duluth-Superior under the Duluth Seaway Port Authority (DSPA). The facility handles approximately 650,000 tons of material per year including approximately 550,000 tons of stone, 40,000 tons of coal, and 60,000 tons of road salt. Due to an increase in flood events at the Duluth site in Minnesota, C. Reiss is considering redeveloping their existing dock in Superior Wisconsin and relocating their shipping operations.

As part of the noise impact study, a review of applicable Federal, State, and Municipal noise criteria was performed. No applicable state sound or county noise regulations pertaining to the operation of the proposed dock were identified. No applicable noise criteria were identified for the City of Superior. The Village of Superior, Wisconsin municipal code Chapter 267 specifies stationary and construction noise criteria applicable to the operation of the proposed dock. The Chapter 267 noise criteria were used to evaluate the noise impact of the proposed dock on nearby noise sensitive areas as they are the most stringent, applicable noise criteria found in the area around the proposed dock.

The noise impact of the proposed dock, including the construction impact of its redevelopment, was modelled using CADNA/A acoustic modelling software (version 2021 MR2) published by Datakustik GmBH, configured to implement ISO-9613-2 environmental noise propagation algorithms and the Traffic Noise Model (TNM) method for evaluating road traffic noise. Annual Average Daily Traffic (AADT) was obtained from the Minnesota Department of Transportation (MN DOT) for roadways in Duluth, Minnesota and the Wisconsin Department of Transportation (WI DOT) for roadways in Superior, Wisconsin. The AADT data was used as an input to TNM to estimate ambient sound levels at existing noise sensitive areas.

Representative sound power levels for anticipated operational and construction noise sources at the proposed dock were used to model the noise impact on nearby noise sensitive areas (NSAs). Acoustic measurements of the existing operations in Duluth, Minnesota were not collected.

Based on the TNM for the area and a review of satellite aerial imagery surrounding the Project Area, the daytime acoustic environment at nearby sensitive receptors around the site is assumed to be dominated by road traffic noise and industrial noise sources during daytime hours (7 a.m. to 7 p.m.) and evening hours (7 p.m. to 11 p.m.). Ambient sound levels during nighttime hours (11 p.m. to 7 a.m.) is assumed to a mix of natural ambient sounds, road traffic noise, and noise from operating industrial sources.

Modelled sound levels indicate that the operational noise impact of the dock at nearby noise sensitive areas is below the applicable Village of Superior Chapter 267 noise criteria of 60 dB during daytime hours and 50 dB during nighttime hours for residential receptors.

Modelled sound levels indicate that the construction noise impact of the dock at nearby noise sensitive areas is below the applicable Village of Superior Chapter 267, Subsection 4-B, 80 dB daytime only noise criteria.

Stantec's assessment of the construction and operation vibration impact of anticipated noise sources at the Site predict that the Site's construction and vibration impact will be below the applicable Federal and State damage and annoyance vibration criteria levels.

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Abbreviations

ANSI	American National Standards Institute
dB	Decibel
dBA	Decibel, A-weighted
ECA	Environmental Compliance Approval
FHWA	US DOT Federal Highway Administration
Ft.	Feet
G	Ground Absorption Coefficient
Hz	Hertz
ISO	International Organization for Standardization
M	Metre(s)
NSA	Noise Sensitive Area
SLM	Sound Level Meter
TNM	Traffic Noise Model

Glossary

Ambient Sound Level or Ambient Noise	All-encompassing sound that is associated with a given environment, usually a composite of sounds from many sources near and far. Includes noise from all sources other than the sources of interest (i.e., sound other than that being measured), such as sound from other industrial sources, transportation sources, animals and nature.
A-Weighting	The weighting network used to account for changes in level sensitivity as a function of frequency. The A-weighting network de-emphasizes the low (i.e., below 1 kHz) frequencies, and emphasizes the frequencies between 1 kHz and 6.3 kHz, in an effort to simulate the relative response of the human ear. See also frequency weighting.
Background Sound Level or Background Noise	See ambient sound level.
Daytime	Defined as the hours from 7 a.m. to 7 p.m.
Decibel	A logarithmic measure of any measured physical quantity and commonly used in the measurement of sound. The decibel (dB) provides the possibility of representing a large span of signal levels in a simple manner. The difference between the sound pressure for silenced versus a loud sound is a factor of 1:1,000,000 or more and the same in Decibel is 0-130 dB, therefore it is less cumbersome to use a small range of equivalent values. A tenfold increase in sound power is equal to +10 dB; a tenfold increase in sound amplitude is equal to +20 dB.
Decibel, A-weighted	A-weighted decibels (dBA). Most common units for expressing sound levels since they approximate the response of the human ear.
Energy Equivalent Sound Level (L_{eq})	An energy-equivalent sound level (L_{eq}) over a specified period of time that would have the same sound energy as the actual (i.e., unsteady) time varying sound over the same period of time. It represents the average sound pressure encountered for the period. The period is often added as a suffix to the label (i.e., $L_{eq}(24)$ for the 24hour equivalent sound level). A L_{eq} value expressed in dBA is a good, single value descriptor to use as a measure of annoyance due to noise.

Evening	Defined as the hours from 7 p.m. to 11 p.m.
Frequency	The number of times per second that the sine wave of sound repeats itself. It can be expressed in cycles per second, or Hertz (Hz).
Frequency Weighting	A method used to account for changes in sensitivity as a function of frequency. Three standard weighting networks, A, B, and C, are used to account for different responses to sound pressure levels. Note: The absence of frequency weighting is referred to as “flat” response or linear weighting. See also A-weighting.
Ground Absorption Coefficient	A parameter defined based on noise reflection characteristics of a surface. It varies between 0.0 (fully reflective) to 1.0 (fully absorptive).
Hertz (Hz)	The unit of frequency also expressed as cycles per second.
International Organization for Standardization	An international body that provides scientific standards and guidelines related to various technical subjects and disciplines.
Line Source	Multiple point sources moving in one direction (e.g., a continuous stream of roadway traffic, radiating sound cylindrically). Sound levels from a line source decrease at an ideal rate of 3 dB per doubling of distance.
Mitigation	Measures taken to reduce, eliminate, or control impacts on the environment.
Nighttime	Defined as the hours from 11 p.m. to 7 a.m.
Noise	Any unwanted sound. “Noise” and “sound” are used interchangeably in this document.
Noise Sensitive Area	A representative point considered for the purpose of assessment within noise-sensitive receptor such as a residence, campground, daycare, school, church, or hospital.
Octave	The interval between two frequencies having a ratio of two to one. For acoustic measurements, the octave bands start at 1,000 Hz centre frequency and go up or down from that point, at a 2:1 ratio. From 1,000 Hz, the next centre frequency is 2,000 Hz; the next is 4,000 Hz, or 500 Hz, 250 Hz, etc.

Point Source	Source that radiates sound spherically (i.e., equally in all directions). Sound levels from a point source decrease at a theoretical rate of 6 dB per doubling of distance.
Residual Sound	Defined by ANSI S12.100 as the all-encompassing sound level from many sources and directions, both near and far, remaining at a given level when all uniquely identifiable discrete sound sources are eliminated. The residual sound may be approximated by the percentile sound level exceeded during 90 percent of the measurement period defined as the LA_{90}.
Sound	A wave motion in air, water, or other media. It is the rapid oscillatory compression changes in a medium that propagate to distant points. It is characterized by changes in density, pressure, motion, and temperature as well as other physical properties. Not all rapid changes in the medium are due to sound (e.g., wind distortion on a microphone diaphragm).
Sound Level	Generally, sound level refers to the weighted sound pressure level obtained by frequency weighting, usually A- or C-weighted, and expressed in decibels
Sound level meter	An instrument consisting of a microphone, amplifier, output meter and frequency-weighting networks that is used to measure noise and sound levels.
Sound Power Level	The total sound energy radiated by a source per unit time (i.e., rate of acoustical energy radiation). The unit of measurement is the Watt. The acoustic power radiated from a given sound source as related to a reference power level (i.e., typically 1E-12 watts, or 1 picowatt) and expressed as decibels. A sound power level of 1 watt = 120 decibels relative to a reference level of 1 picowatt.
Sound Pressure	The root-mean-square of the instantaneous sound pressures during a specified time interval in a stated frequency band.
Sound Pressure Level	Logarithmic ratio of the root mean square sound pressure to the sound pressure at the threshold of human hearing (i.e., 20 micropascals).
Spectrum (Frequency Spectrum)	The frequency dependent characteristic of sound often expressed as amplitude versus octave band frequency (see octave band).

1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) was retained by the C. Reiss Company LLC (C. Reiss) to perform a noise and vibration impact study for the proposed redevelopment of a dock located in Superior, Wisconsin at approximately 46°44’13.8”N 92°07’17.0”W (the Site or Project Area). The assessment was required by the Maritime Administration in support of an Environmental Assessment (EA) for the Site.

Figure 1-1 shows the location of the property in Superior, Wisconsin.

Point Source
Line Source
Road
Building
Cylinder
Embankment
Ground Absorption
Receiver

NOISE IMPACT STUDY
C. REISS PROPOSED DOCK REDEVELOPMENT - SUPERIOR, WISCO

FIGURE 1.1
SITE LOCATION PLAN

2.0 FACILITY DESCRIPTION

C. Reiss currently operates a stone and coal shipping marine facility in the Port of Duluth-Superior under the Duluth Seaway Port Authority (DSPA). The facility handles approximately 650,000 tons of material per year including approximately 550,000 tons of stone, 40,000 tons of coal, and 60,000 tons of road salt. Due to an increase in flood events at the Duluth site in Minnesota, C. Reiss is considering redeveloping their existing dock in Superior Wisconsin and relocating their shipping operations.

The proposed dock is anticipated to operate up to 12 hours per day, 6 days a week excluding Sundays. The Project Area is located within the City limits of Superior, Wisconsin. The area immediately surrounding the proposed dock is zoned as W1 waterfront. To the north and west of the Site is Saint Louis Bay and Duluth and to the east and south are lands zoned for manufacturing purposes. A City of Superior zoning map is provided as Appendix A.

Based on a review of satellite imagery of the Site, the acoustical environment surrounding the Project Area is assumed to be dominated by road traffic noise and other urban noise sources during daytime hours (7 a.m. to 7 p.m.) and evening hours (7 p.m. to 11 p.m.). The acoustical environment surrounding the dock during nighttime hours (11 p.m. to 7 a.m.) is assumed to be dominated by a mix of natural sounds such as wind and birds, road traffic noise, and operating industrial noise sources.

3.0 NOISE SOURCE SUMMARY

The anticipated significant noise sources associated with dock operations include steady-state sources (e.g., mechanical equipment, trucks, locomotives, cranes and conveyors). Sound power levels are based on manufacturer data, equipment of similar sources, and previous measurements from Stantec's sound power database. The anticipated significant noise sources associated with construction activities to rehabilitate the dock are discussed in Section 3.2.

The primary offsite noise sources considered in this study are road traffic noise from Highway 2, North 3rd Street, Interstate 53, and Interstate 35; although adjacent industrial sources such as manufacturing facilities to the south and east as well as docks directly adjacent to the Project Area may have an impact on nearby noise sensitive areas and their impact has conservatively not been included in this Study.

3.1 STEADY STATE NOISE SOURCES

Raw materials will be brought to the site by ship along the west of the Site and offloaded via conveyors and cranes. The offloaded materials will then be loaded onto railcars and trucks for shipment offsite.

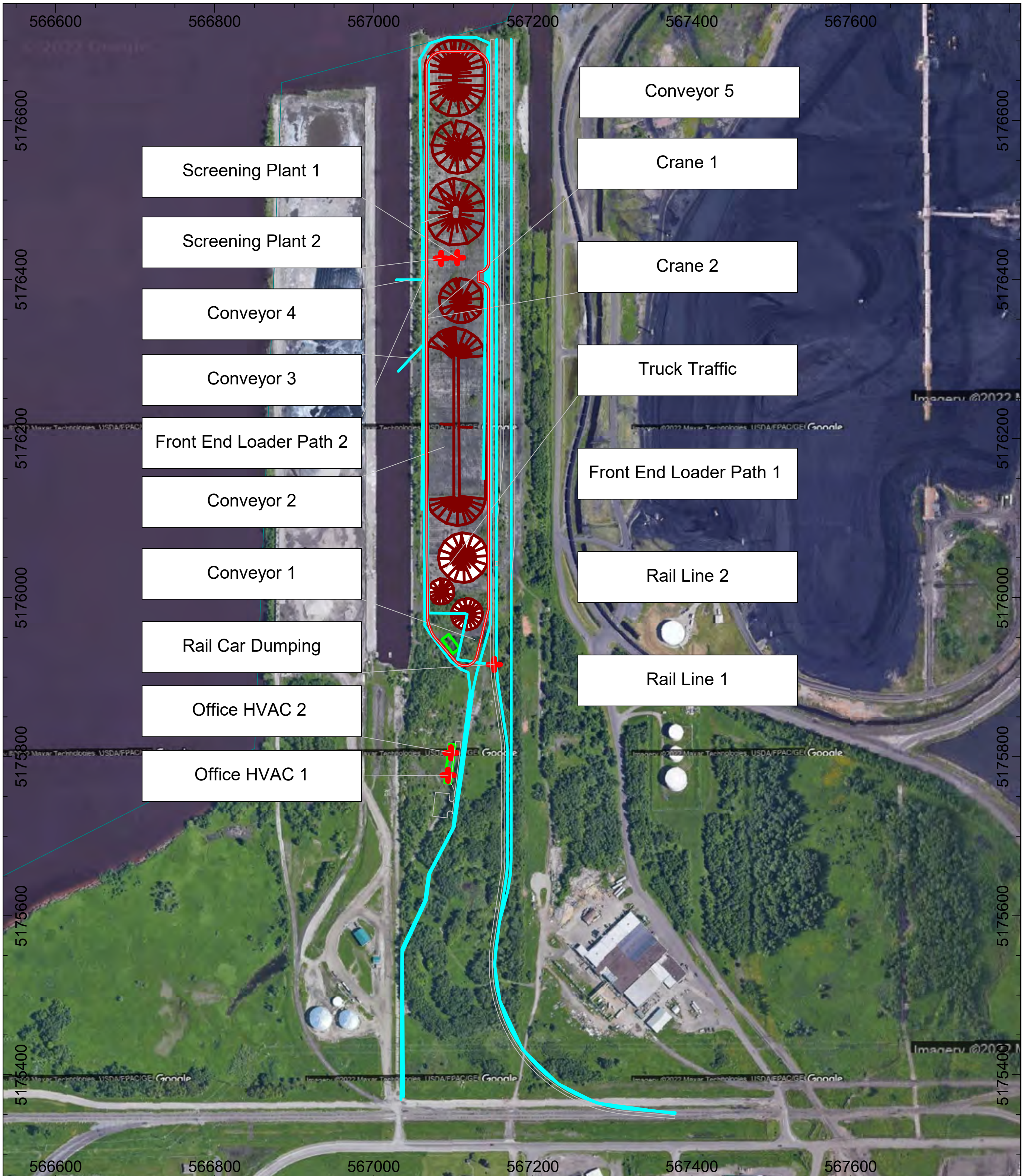
The majority of noise sources associated with Site operations will be the offloading and loading operations. All facility operations occur outdoors. Six (6) types of significant mechanical sources were identified at the Facility and are included in this noise impact study. These sources include:

- Truck movements on site;
- Rail movements on site;
- Rail mounted overhead cranes;
- Operation of conveyors, shakers, and screeners for material transportation and separation on site;
- Operation of front-end loaders for loading materials onto trucks and trans; and
- Building heating, ventilation, and cooling (HVAC)

A summary of site activities and their estimated occurrence is provided in Table 3-1. The sound power of all significant noise sources anticipated at the Site are summarized in Table 3-2 and shown in Figure 3-1.

Table 3-1 On-site Activity Summary

Time Period	Activity	Frequency
Daytime (7 a.m. – 7 p.m.)	Truck Deliveries entering and exiting the site	10 Movements per hour
	Rail Movements entering and exiting the site	2 Movements per Hour
	Conveyors/Shakers/Screener	Constant
	Front-End Loaders	60 Movements per hour
	Overhead Crane	60 Movements per hour
	Building HVAC	Constant
Evening (7 p.m. – 11 p.m.)	Building HVAC	Constant
Nighttime(11 p.m. – 7 a.m.)	Building HVAC	Constant



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Point Source
Line Source
Road
Building
Cylinder
Embankment
Ground Absorption
Receiver
Calculation Area

NOISE IMPACT STUDY
C. REISS PROPOSED DOCK REDEVELOPMENT - SUPERIOR, WISCO

FIGURE 3-1
FACILITY NOISE SOURCE LOCATION MAP

Table 3-2 Steady State Noise Source Summary

Source ID	Source Description	Frequency (Hz)									Sound Power Level (dBA)	Source Type
		31.5	63	125	250	500	1000	2000	4000	8000		
!01!NS01	Rail Car Dumping	88	99	90	94	91	99	100	96	87	104	Point
!01!NS02	Screening Plant 1	112	110	113	109	108	104	107	100	90	112	Point
!01!NS03	Screening Plant 2	112	110	113	109	108	104	107	100	90	112	Point
!01!NS04	Office HVAC 1	59	99	92	94	91	90	86	80	74	94	Point
!01!NS05	Office HVAC 2	59	99	92	94	91	90	86	80	74	94	Point
!01!LS01	Conveyor 1	97	93	88	90	83	77	77	74	73	86	Line
!01!LS02	Conveyor 2	97	93	88	90	83	77	77	74	73	86	Line
!01!LS03	Conveyor 3	97	93	88	90	83	77	77	74	73	86	Line
!01!LS04	Conveyor 4	97	93	88	90	83	77	77	74	73	86	Line
!01!LS05	Conveyor 5	97	93	88	90	83	77	77	74	73	86	Line
!01!LS06	Truck Traffic	68	85	80	73	75	72	71	68	59	113	Line
!01!LS07	Rail Line 1	63	79	58	54	60	51	46	39	27	91	Line
!01!LS08	Rail Line 2	63	79	58	54	60	51	46	39	27	91	Line
!01!LS09	Front End Loader Path 1	79	99	88	80	78	80	76	70	64	111	Line
!01!LS10	Front End Loader Path 2	79	99	88	80	78	80	76	70	64	111	Line
!03!LS11	Crane 1	48	60	62	68	70	71	69	64	54	102	Line
!03!LS12	Crane 2	48	60	62	68	70	71	69	64	54	102	Line

3.2 CONSTRUCTION NOISE SOURCES

The Project will restore the dock by installing driven steel sheet piles outboard of the existing cap, installing tremie concrete behind the upper section of sheet piles, and to complete restoration and resurfacing of the concrete cap. In addition, roadways, rail tracks, and other above ground supporting appurtenances will be installed on the Site which will require excavation and grading of the site. A summary of potential noise generating equipment to be used during the construction phase of the Project area is provided in Table 3-3.

Based on the anticipated construction activities the worst-case noise impact will be during the installation of the driven sheet piles. Stantec has conservatively assumed the following equipment operation during daytime hour (7 a.m. to 7 p.m.) construction periods:

- Two (2) impact pile-drivers
- Four (4) backhoes
- Two (2) crane derricks
- Two (2) dozers
- Four (4) generators
- Ten (10) Dump trucks

This composition of equipment represents the anticipated worst-case impact. Different equipment compositions will have an overall sound power at or below this anticipated worst-case.

Table 3-3 FTA Construction Equipment Noise Levels

Equipment	Typical Noise Level 50 ft from Source, dBA
Air Compressor	80
Backhoe	80
Ballast Equalizer	82
Ballast Tamper	83
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	82
Grader	85
Impact Wrench	85

Noise Source Summary
June 3, 2022

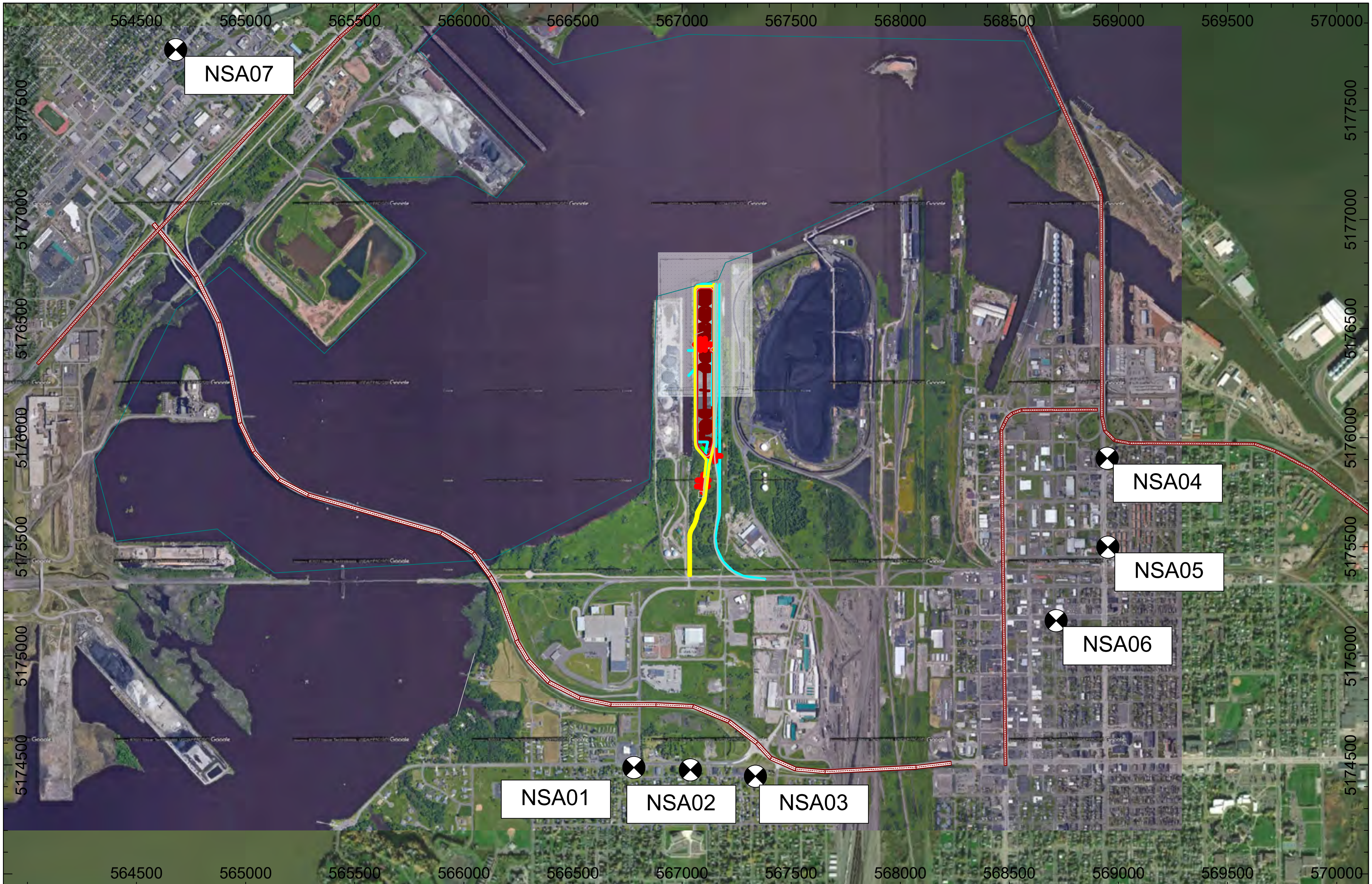
Equipment	Typical Noise Level 50 ft from Source, dBA
Jack Hammer	88
Loader	80
Paver	85
Pile-driver (Impact)	101
Pneumatic Tool	85
Pump	77
Rail Saw	90
Rock Drill	95
Roller	85
Saw	76
Scraper	85
Shovel	82
Spike Driver	77
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Dump Truck	84
FTA Transit Noise and Vibration Impact Assessment Manual (September, 2018)	

4.0 NOISE SENSITIVE AREAS

The nearest representative noise sensitive areas (NSAs) were identified around the proposed Site. Seven (7) representative NSAs were identified in each cardinal direction including one receptor in Duluth, Minnesota. A summary of the NSAs is provided in Table 4-1 and shown Figure 4-1.

Table 4-1 Measurement Locations

Point of Reception ID	Description	UTM NAD 83 Coordinates			Distance to Center of Site (ft.)
		Zone	Easting	Northing	
NSA01	Residence at 3308 Belknap Street Superior, WI	15T	566780	5174488	4,842
NSA02	Residence at 3014 Belknap Street Superior, WI	15T	567038	5174478	4,733
NSA03	Residence at 1514 Logan Avenue Superior, WI	15T	567337	5174448	4,855
NSA04	Residence at 418 Hammond Avenue Superior, WI	15T	568948	5175905	5,897
NSA05	Residence at 724 Hammond Avenue Superior, WI	15T	568952	5175498	6,065
NSA06	Residence at 1516 Broadway Street Superior, WI	15T	568715	5175160	5,698
NSA07	Residence at 4101 Grand Avenue Duluth, MN	15T	564680	5177778	10,151



Stantec

N

- Point Source
- Line Source
- Road
- Building
- Cylinder
- Embankment
- Ground Absorption
- Receiver

NOISE IMPACT STUDY
C. REISS PROPOSED DOCK REDEVELOPMENT - SUPERIOR, WISCONSIN

FIGURE 4-1
NOISE SENSITIVE AREA LOCATION MAP

5.0 NOISE ASSESSMENT CRITERIA

5.1 OPERATIONAL NOISE CRITERIA

Stantec performed a review of applicable Federal, State, and Municipal noise criteria. No applicable state or county sound regulations pertaining to the operation of the proposed dock were identified. No applicable noise criteria were identified for the City of Superior. The Village of Superior, Wisconsin municipal code Chapter 267 specifies stationary noise criteria applicable to the operation of the proposed dock. The Chapter 267 noise criteria were used to evaluate the noise impact of the proposed dock on nearby noise sensitive areas as they are the most stringent applicable noise criteria found in the area around the proposed Project Area.

The Village of Superior municipal code Chapter 267 specifies stationary noise criteria applicable to the operation of the proposed dock. The Chapter 267 noise criteria were used to evaluate the noise impact of the proposed Development on nearby noise sensitive areas and are summarized in Table 5-1. Additional limits provided by the Village of Superior, Wisconsin are as follow:

- *A (2) "Ambient noise is the all-encompassing noise associated with a given source, usually being a composite of sounds with many sources near and far, but excluding the noise source being measured. Ambient noise is a factor, and the subject noise shall exceed the ambient noise by five db in any octave band to be designated excessive."*
- *A (3) "Pure tones and impulsive noises are factors. Five noise rating numbers shall be taken from the table in Subsection **A(1)** [Table 5-1] above if the subject noise consists primarily of a pure tone or if it is impulsive in character."*

Typical expected ambient noise levels as published by the Federal Highway Administration (FHWA) and ANSI/ASA S12.9-2013/Part 3 are summarized in Table 5-2 and Table 5.3 for reference. Typical expected ambient sound levels will also be used to evaluate the modelled existing ambient sound levels generated by road traffic noise.

The acoustical environment surrounding the proposed dock is anticipated to be dominated by road traffic and industrial activity noise during daytime and nighttime hours with some lulls where natural ambient sounds are dominant.

Table 5-1 Village of Superior Wisconsin Stationary Noise Limits Subsection A (1)

Zone	Daytime Noise Rating [dB] (7 a.m. – 7 p.m.)	Nighttime (7 p.m. to 7 a.m.) [dB]
Residential	60	50
Commercial	70	70
All other zones	75	75

Table 5-2 FHWA Typical Existing Noise Levels

Time Period	Sound Level
Daytime (7 a.m. to 7 p.m.) – Suburban Area	40-50 dBA
Daytime (7 a.m. to 7 p.m.) – Rural Area	30-40 dBA

[1] Techniques for Reviewing Noise Analyses and Associated Noise Reports (US DOT FHWA 2018)

Table 5-3 ANSI/ASA Typical Existing Noise Levels

Residential Land Use Category	Typical L_{dn} [dBA]
Very noisy urban	67
Noisy urban	62
Urban and noisy suburban	57
Quiet urban and normal suburban	52
Quiet suburban	47
Very quiet suburban and rural	42

[1]ANSI/ASA S12.9-2013/Part 3 Quantities and Procedures for Description and Measurement of Environmental Sound-Part 3: Short-term Measurements with an Observer Present (ANSI/ASA 2013)

The L_{dn} day night sound level is calculated using the following formula:

$$L_{dn} = 10 * Log_{10}\left\{\frac{15}{24} * 10^{\left(\frac{L_{eq(day)}}{10}\right)} + \frac{9}{24} * 10^{\left(\frac{L_{eq(night)}+10}{10}\right)}\right\}$$

5.2 CONSTRUCTION NOISE CRITERIA

Construction noise is typically exempt from noise restrictions as it occurs primarily during daytime hours and is temporary in nature. Chapter 267 subsection 4 of the village of Superior Wisconsin exempts construction noise during daytime hours (7 a.m. to 7 p.m.) provided that noise levels do not exceed 80 dB at a noise sensitive area. The 80 dB daytime criteria has been used to assess the noise impact of construction activities on representative NSAs.

6.0 NOISE IMPACT ASSESSMENT

6.1 METHODS

A predictive analysis was performed using CADNA/A acoustic modelling software (Version 2021 MR2), published by Datakustik GmbH, configured to implement ISO-9613-2 environmental noise propagation algorithms. This model includes geometrical divergence (distance attenuation), barrier effects due to intervening structures, ground effects, atmospheric absorption, and topography. The model considers a downwind condition, in which for the purpose of analysis the NSA is always located downwind.

Anticipated on-site noise sources were modelled as point and line sources as applicable. Acoustic modelling parameters used are summarized in Table 6-1.

Table 6-1 Acoustic Model Parameters

Parameter	Value	Rationale
Ground Absorption	0	For waterbodies
Ground Absorption	0.2	Accounts for mostly acoustically reflective surfaces (pavement and hard packed ground) within the Facility property boundary
Ground Absorption	0.8	Accounts for mostly acoustically absorptive (i.e., grass) surfaces between Facility and representative noise sensitive areas
Temperature	50°F	Typical weather average condition
Relative Humidity	70%	Typical weather average condition
Max. Order of Reflection	2	Accounts for building reflections

Sound power levels input into the acoustical model are summarized in Table 3-2 and are based of representative sound power levels of equipment anticipated to be on site.

6.2 RESULTS

6.2.1 Modelled Ambient Sound Levels

Stantec has quantitatively assessed ambient sound levels surrounding the Project Area using CADNA/A acoustic modelling software, implementing the U.S. Department of Transportation (US DOT) Federal Highway Administration (FHWA) Traffic Noise Model (TNM). The modelled ambient sound levels will be used to evaluate the relative modelled noise impact of the Site as required by Chapter 267, Subsection A (2) of the Village of Superior noise criteria.

6.2.1.1 Traffic Volumes

Annual average daily traffic volumes were taken from the Minnesota Department of Transportation (MN DOT) and Wisconsin Department of Transportation (WI DOT). Growth rates were calculated based on the average growth rate of the previous ten years of available AADT data for each roadway. For several roadways negative growth was observed and included in the average AADT values. A summary of the AADT volumes is provided as Table 6-2. A summary of modelled road traffic distributions and modelling inputs for TNM is provided as Table 6-3.

Table 6-2 AADT Volumes

Roadway	Last AADT Reported	Estimated Current AADT	Average Growth Rate
Highway 2	17,900 (2021)	18,261 (2022)	2.0%
North 3rd Street	8,600 (2019)	10877 (2022)	8.1%
Interstate 53	15,500 (2019)	18,379 (2022)	1.4%

Table 6-3 Road Traffic Modelling Parameters

<table>
<tr><th>Parameter</th><th colspan="3">Value</th><th>Rationale</th></tr>
<tr><td>Ground Absorption</td><td colspan="3">0</td><td>For waterbodies</td></tr>
<tr><td>Ground Absorption</td><td colspan="3">0.8</td><td>Accounts for mostly acoustically absorptive (i.e., grass) surfaces between Facility and representative point of reception.</td></tr>
<tr><td rowspan="2">Day/Night Composition</td><td>Day</td><td colspan="2">Night</td><td rowspan="2">U.S. DOT Federal Highway Administration – Traffic Monitoring Guide – Hallenbeck, et al. Vehicle Volume Distributions by Classification, 1997</td></tr>
<tr><td>90%</td><td colspan="2">10%</td></tr>
<tr><td rowspan="2">Vehicle Composition</td><td>Cars</td><td>Medium Trucks</td><td>Heavy Trucks</td><td rowspan="2">U.S. DOT Federal Highway Administration – Traffic Monitoring Guide – Hallenbeck, et al. Vehicle Volume Distributions by Classification, 1997</td></tr>
<tr><td>95%</td><td>2%</td><td>3%</td></tr>
</table>

6.2.1.2 Modelled Ambient Sound Levels

Results of the road traffic modelling for representative NSAs are provided in Table 6-4. Calculated L_{dn} values are comparable to typical expected LA_{eq} L_{dn} values for urban settings as summarized in Table 5-2 and Table 5-3.

Table 6-4 Road Traffic Modelling Results

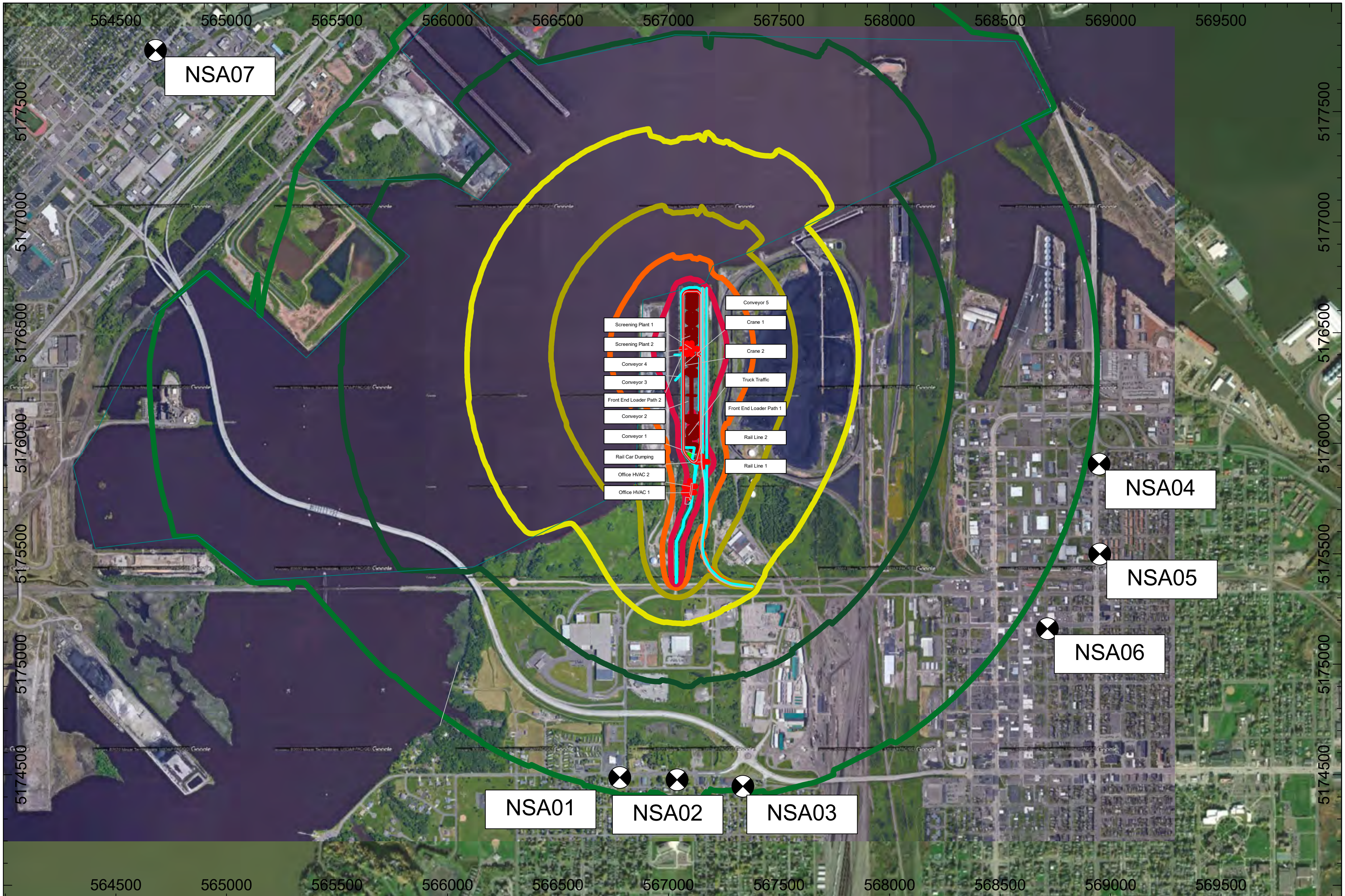
Cadna ID	NSA Description	LA_{eq} Daytime [dBA]	LA_{eq} Nighttime [dBA]	L_{dn} [dBA]
NSA01	Residence at 3308 Belknap Street, Superior, WI	54	48	56
NSA02	Residence at 3014 Belknap Street, Superior, WI	55	49	57
NSA03	Residence at 1514 Logan Avenue, Superior, WI	59	52	60
NSA04	Residence at 418 Hammond Avenue, Superior, WI	57	50	58
NSA05	Residence at 724 Hammond Avenue, Superior, WI	47	41	49
NSA06	Residence at 1516 Broadway Street, Superior, WI	45	38	47
NSA07	Residence at 4101 Grand Avenue, Duluth, MN	42	36	44

6.2.2 Modelled Facility Operation Noise Impact

Table 6-5 presents the modelled noise impact of the proposed dock at the measurement locations. A noise contour plot is presented in Figure 6-1.

Table 6-5 Modelled Noise Impact Table

Cadna ID	NSA Description	LA_{eq} Daytime [dBA]	LA_{eq} Nighttime [dBA]	Ldn
NSA01	Residence at 3308 Belknap Street, Superior, WI	25	<10	24
NSA02	Residence at 3014 Belknap Street, Superior, WI	26	11	24
NSA03	Residence at 1514 Logan Avenue, Superior, WI	25	<10	23
NSA04	Residence at 418 Hammond Avenue, Superior, WI	24	<10	23
NSA05	Residence at 724 Hammond Avenue, Superior WI	24	<10	22
NSA06	Residence at 1516 Broadway Street, Superior WI	24	<10	22
NSA07	Residence at 4101 Grand Avenue, Duluth, MN	21	<10	19



Stantec

N

>= 35.0
>= 40.0
>= 45.0
>= 50.0
>= 55.0
>= 60.0

NOISE IMPACT STUDY
C. REISS PROPOSED DOCK REDEVELOPMENT - SUPERIOR, WISCONSIN

FIGURE 6-1
FACILITY DAYTIME NOISE IMPACT LAEQ [dBA]

6.2.3 Modelled Construction Noise Impact

Results of the construction noise impact of the Project are summarized in Table 6-6.

Table 6-6 Construction Noise Impact

Cadna ID	NSA Description	Construction Noise Impact [dB]
NSA01	Residence at 3308 Belknap Street, Superior WI	37
NSA02	Residence at 3014 Belknap Street, Superior WI	37
NSA03	Residence at 1514 Logan Avenue, Superior WI	35
NSA04	Residence at 418 Hammond Avenue, Superior WI	36
NSA05	Residence at 724 Hammond Avenue, Superior WI	35
NSA06	Residence at 1516 Broadway Street, Superior WI	35
NSA07	Residence at 4101 Grand Avenue, Duluth MN	34

6.3 DISCUSSION AND ASSESSMENT

The modelled noise impact have been summarized and compared to applicable Village of Superior steady state operation noise criteria in Table 6-7. The modelled noise impact of construction activities has been summarized and compare to the applicable Village of Superior construction noise limits in Table 6-8

Table 6-7 Steady State Noise Impact Summary Table

ID	NSA Description	Ambient Levels		Site Impact		Daytime Criteria	Nighttime Criteria	Increase Above Ambient	Increase Above Ambient Criteria	Criteria Met
		LA_{eq} Day	LA_{eq} Night	L_{eq} Day	L_{eq} Night	L_{eq} [dB]	L_{eq} [dB]	[dB]	[dB]	[Yes/No]
NSA01	Residence at 3308 Belknap Street, Superior, WI	54	48	25	9	60	50	< 1	< 5	Yes
NSA02	Residence at 3014 Belknap Street, Superior, WI	55	49	25	9	60	50	< 1	< 5	Yes
NSA03	Residence at 1514 Logan Avenue, Superior, WI	59	52	25	9	60	50	< 1	< 5	Yes
NSA04	Residence at 418 Hammond Avenue, Superior, WI	57	50	24	6	60	50	< 1	< 5	Yes
NSA05	Residence at 724 Hammond Avenue, Superior, WI	47	41	24	6	60	50	< 1	< 5	Yes
NSA06	Residence at 1516 Broadway Street, Superior, WI	45	38	24	6	60	50	< 1	< 5	Yes
NSA07	Residence at 4101 Grand Avenue, Duluth, MN	42	36	21	2	60	50	< 1	< 5	Yes

Table 6-8 Construction Noise Impact Summary Table

Cadna ID	NSA Description	Construction Noise Impact	Daytime Criteria [dB]	Criteria Met
		[dB]	[dB]	[Yes/No]
NSA01	Residence at 3308 Belknap Street, Superior WI	37	80	Yes
NSA02	Residence at 3014 Belknap Street, Superior WI	37	80	Yes
NSA03	Residence at 1514 Logan Avenue, Superior WI	34	80	Yes
NSA04	Residence at 418 Hammond Avenue, Superior WI	36	80	Yes
NSA05	Residence at 724 Hammond Avenue, Superior WI	35	80	Yes
NSA06	Residence at 1516 Broadway Street, Superior WI	35	80	Yes
NSA07	Residence at 4101 Grand Avenue, Duluth MN	33	80	Yes

6.3.1 Assessment and Recommendations

The modelled construction and operational noise impact of the Site is below the applicable Village of Superior noise criteria as noted in Table 6-7 and Table 6-8.

Stantec recommends that attended measurements be collected upon completion of construction activities and during Site operations to evaluate the operational noise impact of the Site against modelled sound levels. Stantec also recommends that this Study including the list of anticipated equipment to be used on Site and acoustic modelling be reviewed and updated upon completion of detailed Site design.

The noise impact of future Site equipment should be 10 dBA or less at representative NSAs to not increase the operational noise impact of the facility at representative NSAs.

7.0 VIBRATION IMPACT ASSESSMENT

7.1 APPLICABLE VIBRATION CRITERIA

Stantec performed a review of Federal, State, and Municipal vibration criteria. Stantec found applicable Federal vibration criteria expressed in peak particle velocity (PPV) for building damage and rms velocity levels (VdB) for annoyance published by the Federal Transit Authority (FTA) Noise and Vibration Impact Assessment Manual (Sept., 2018) summarized in Table 7-1 and Table 7-2. Stantec also found applicable State vibration PPV criteria for damage published by the WI DOT summarized in Table 7-3. The FTA criteria has been used to evaluate the construction and operation vibration impact as it is more conservative.

Table 7-1 FTA Vibration Damage Criteria

Building/Structural Category (Occupied-Residential)	PPV (in/sec)
Reinforced concrete, steel or timber (no plaster)	0.5
Engineered concrete and masonry (no plaster)	0.3
Non-engineered timber and masonry buildings	0.2
Building extremely susceptible to vibration damage	0.12

Table 7-2 FTA Indoor Ground-Borne Vibration Impact Criteria for General Vibration Assessment

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch /sec)		
	Frequent Events	Occasional Events	Infrequent Events
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB [1]	65 VdB [1]	65 VdB [1]
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

[1]This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. For equipment that is more sensitive, a Detailed Vibration Analysis must be performed.

Table 7-3 WI DOT Vibration Damage Criteria

Building/Structure Type	Maximum PPV (in/sec)
Reinforced Concrete Structure, Unoccupied	4.0
Steel Structure, Unoccupied	4.0
Buried Utilities	2.0
Wells and Aquifers	2.0
Green Concrete (less than 7 days)	1.0
Non-historic buildings	2.0
Historic buildings that have standard vibration sensitivity (in good state of maintenance)	0.5
Historic buildings with greater potential for damage/sensitivity (deteriorate state of maintenance)	0.2

7.2 CONSTRUCTION VIBRATION IMPACT ASSESSMENT

The FTA publishes a list of typical construction vibration emitting sources which are summarized in Table 7-3. The construction vibration impact for damage at receptors can be estimated using the following equation and compared to PPV values summarized in Table 7-4.

$$PPV_{equip} = PPV_{ref} * \left(\frac{25}{D}\right)^{1.5}$$

Table 7-4 FTA Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 ft, in/sec	Approximate Lv * at 25 ft
Pile Driver (impact)	upper range	1.518	112
	typical	0.644	104
Pile Driver (sonic)	upper range	0.734	105

Equipment		PPV at 25 ft, in/sec	Approximate Lv * at 25 ft
	typical	0.17	93
Clam shovel drop (slurry wall)		0.202	94
Hydro mill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.21	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

* RMS velocity in decibels, VdB re 1 micro-in/sec

Impact pile driving is anticipated in the Project Area and will be the most significant anticipated vibration generating construction activity. Based on the separation distance of more than 4,000 ft. to nearby NSAs, construction vibration levels are anticipated to be insignificant and below Federal and State construction vibration damage criteria summarized in Table 7-1 and Table 7-2.

Structures including storage silos and buildings at adjacent industrial facilities are approximately 2,000 ft. from the center of the site. Construction vibration level are anticipated to be insignificant and below the Federal and State criteria for non-occupied buildings as summarized in Table 7-1 and Table 7-2.

7.3 OPERATIONAL VIBRATION IMPACT ASSESSMENT

The operational vibration impact assessment for annoyance at receptors can be estimated using the following equation and L_{vref} levels in Table 7-4 and compared to VdB values in Table 7-2,

$$L_{v,distance} = L_{vref} - 30\log\left(\frac{D}{25}\right)$$

General bulk material moving activities using large bulldozers, loaded trucks, and small bulldozers are considered representative of anticipated on Site activities. Based on the separation distance of more than 4,000 ft. to nearby NSAs, operational vibration levels are anticipated be insignificant and below the annoyance VdB criteria summarized in Table 7-2

Heavy locomotives operations are also anticipated on the Site. The RMS velocity can be estimated using the following formula where D is the separation distance in feet to the nearest NSA

$$L_v = 92.28 + 14.81 * \log(D) - 14.17 * \log(D)^2 + 1.65 * \log(D)^3$$

Using a reference distance of 4,000 feet, the L_v of heavy locomotive operations is approximately 39 VdB which is below the applicable annoyance criteria summarized in Table 7-2.

8.0 CONCLUSION

Stantec Consulting Ltd. (Stantec) was retained by the C. Reiss Company (C. Reiss) to perform a noise and vibration impact study for the proposed redevelopment of a dock located in Superior, Wisconsin located at approximately 46°44’13.8”N 92°07’17.0”W (the Site). The assessment was required by the Maritime Administration in support of an Environmental Assessment (EA) for the Site.

Stantec’s assessment based on a desktop noise Study of anticipated operational noise sources at the Site and existing road traffic volumes predict that the Site’s operational noise impact is below the applicable Village of Superior noise criteria. Based on the modelled noise impact of the Site and the modelled ambient sound levels generated by road traffic noise, the operational noise impact of the Site is anticipated to be masked by road traffic and industrial noise from adjacent sites.

Stantec’s assessment of the Project’s anticipated construction noise sources during the construction phase of the Project predict that the construction noise impact will be below the applicable daytime construction noise criteria.

Stantec’s assessment of the construction and operation vibration impact of anticipated noise sources at the Site predict that the Site’s construction and vibration impact will be below the applicable Federal and State damage and annoyance vibration criteria.

Stantec recommends that attended measurements be collected upon completion of construction activities and during Site operation of the proposed Dock to evaluate the operational noise and vibration impact of the Site against modelled sound levels. Stantec also recommends that this study including the list of anticipated equipment to be used on site and acoustic and vibration modelling, to be reviewed and updated upon completion of a detailed site design.

The noise impact of future Site equipment should be 10 dBA or less at representative NSAs to not increase the operational noise impact of the facility at representative NSAs.

9.0 REFERENCES

[1] ANSI SC1.100-2014 “Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas” (2014).

[2] ANSI/ASA S12.9-2013/Part 3 Quantities and Procedures for Description and Measurement of Environmental Sound-Part 3: Short-term Measurements with an Observer Present (ANSI/ASA 2013)

[3] Techniques for Reviewing Noise Analyses and Associated Noise Reports (US DOT FHWA 2018)

[4] Noise Criteria Sound Level - Guidance Manual for Environmental Report Preparation for Application Filed Under the Natural Gas Act – Vol. 1 (FERC 2017)

[5] “ISO 9613-2, Acoustics – Attenuation of Sound During Propagation Outdoors – Part 1: Calculation of the Absorption of Sound by the Atmosphere”, 1993, Geneva, Switzerland.

[6] “ISO 9613-2, Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of calculation”, December 15, 1996, Geneva, Switzerland.

[7] “Transit Noise and Vibration Impact Assessment Manual”, (US DOT FTA, 2018)

APPENDIX A
Zoning Map

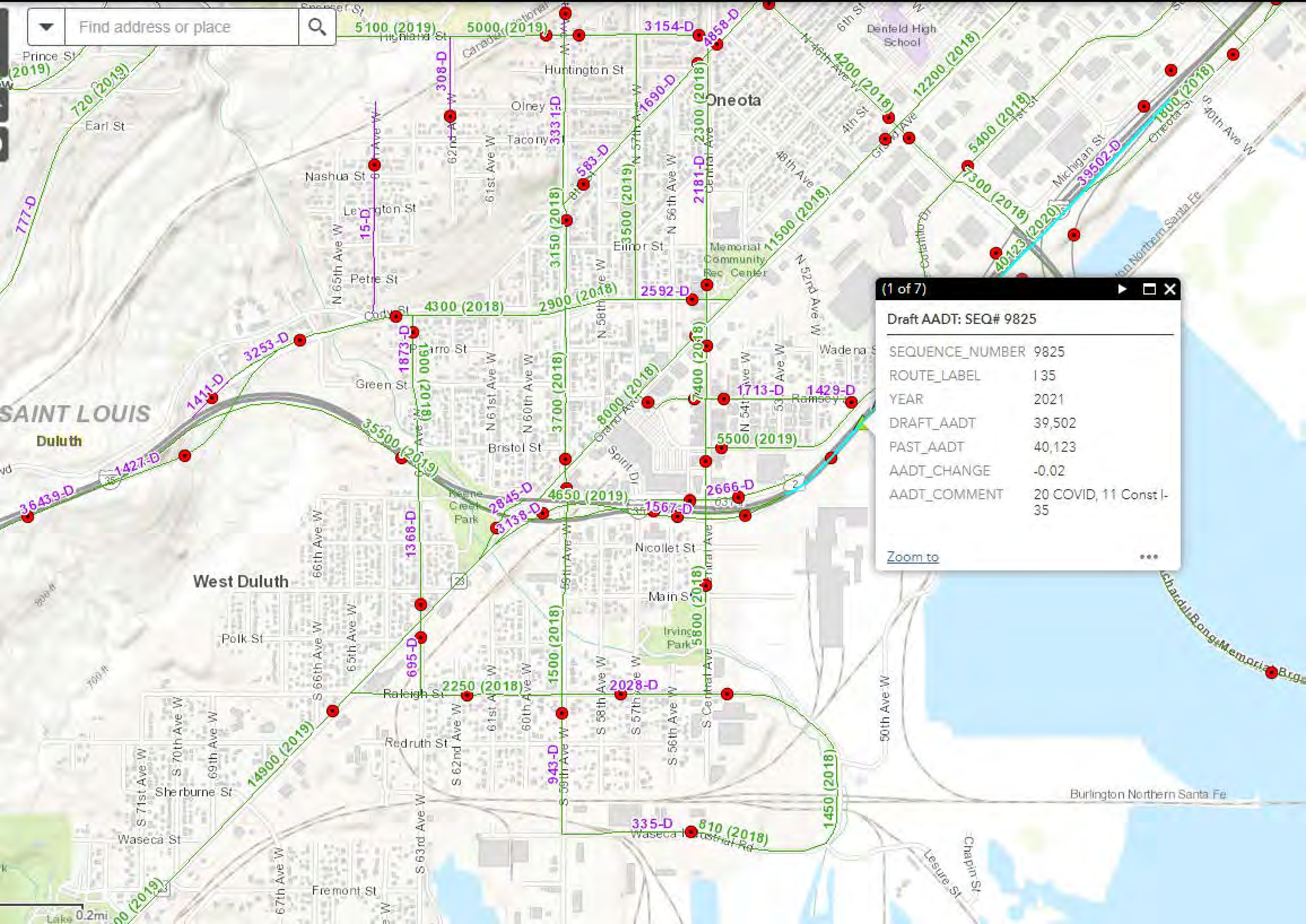

CITY OF SUPERIOR
ZONING MAP
C1-COMMERCIAL
C2-HIGHWAY COMMERCIAL
C3-SHOPPING CENTER DISTRICT
C4-CENTRAL BUSINESS DISTRICT
M1-MANUFACTURING-1
M2-MANUFACTURING-2
PDD-PLANNED DEVELOPMENT DISTRICT
R1A-ONE FAMILY RESIDENTIAL
R1B-ONE FAMILY RESIDENTIAL
R2-TWO FAMILY RESIDENTIAL
R3-APARTMENT RESIDENTIAL
R4-APARTMENT RESIDENTIAL
SUB-SUBURBAN
W1-WATERFRONT
N
S
E
W

APPENDIX B
TRAFFIC DATA

DEPARTMENT OF TRANSPORTATION

Traffic Mapping Application

Find address or place



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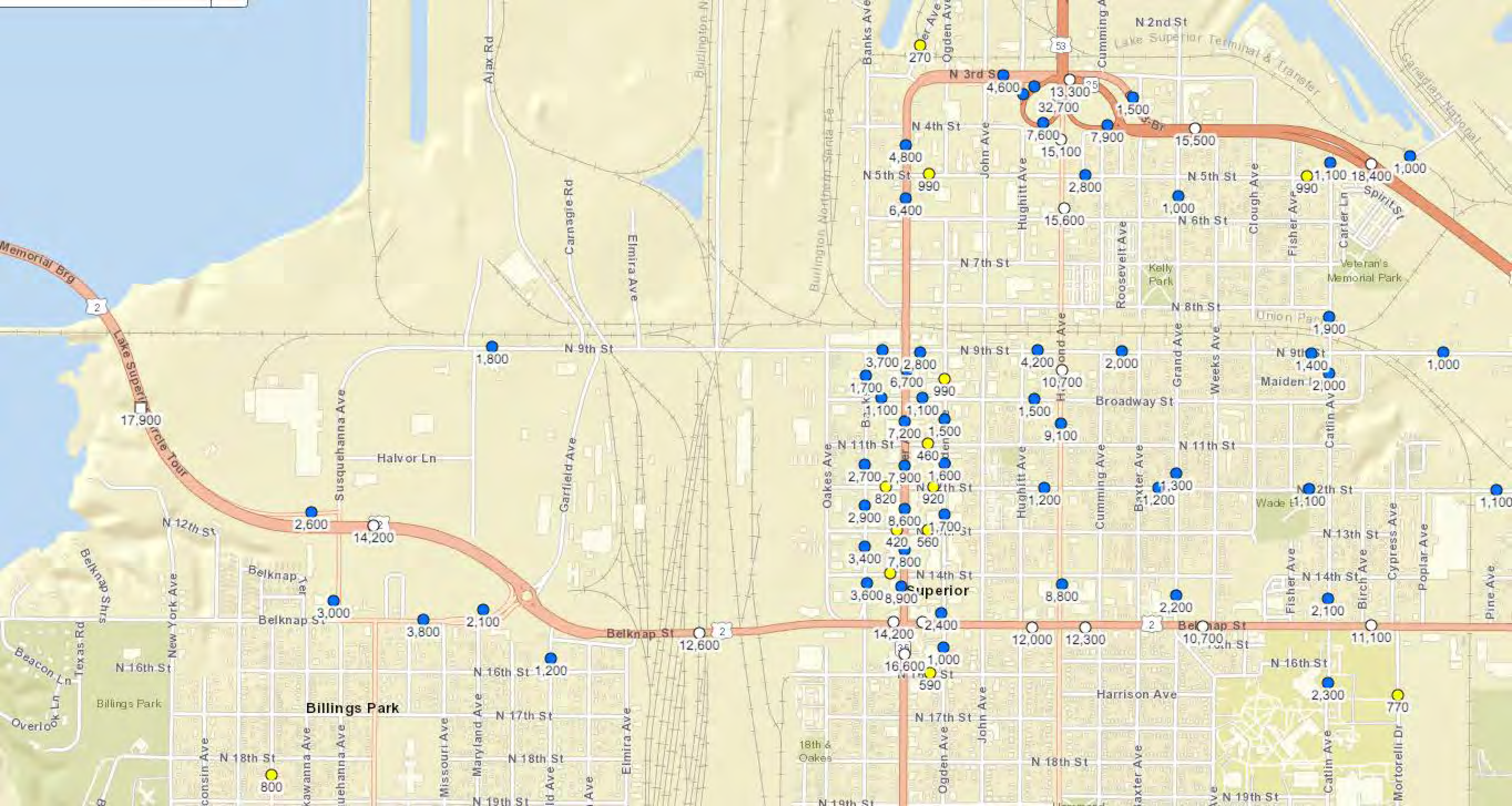

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Lake Superior Terminal & Transfer
Canadian National
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270
Banks Ave
Ogden Ave
Ajax Rd
Burlington Northern Santa Fe
N 3rd St
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13,300
32,700
1,500
Cumming Ave
7,600
15,100
7,900
15,500
N 4th St
John Ave
4,800
N 5th St
990
2,800
N 5th St
990
1,100
18,400
1,000
6,400
15,600
1,000
N 6th St
Hughitt Ave
Roosevelt Ave
Clough Ave
Fisher Ave
Carter Ln
Spirit St
Carnagie Rd
Elmira Ave
N 7th St
Kelly Park
Veteran's Memorial Park
Memorial Brg
2
N 8th St
Union Pacific
1,900
N 9th St
1,800
N 9th St
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1,700
6,700
990
10,700
Maiden Ln
2,000
Lake Superior Circle Tour
17,900
1,100
1,100
1,500
Broadway St
Grand Ave
Weeks Ave
Susquehanna Ave
7,200
1,500
9,100
Catlin Ave
Halvor Ln
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N 11th St
Garfield Ave
Oakes Ave
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7,900
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N 12th St
820
920
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1,200
1,100
1,100
Wade
N 12th St
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8,600
1,700
Cumming Ave
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Poplar Ave
Pine Ave
Birch Ave
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Superior
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Belknap St
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Belknap St
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1,200
1,000
16,600
Texas Rd
New York Ave
Beacon Ln
N 16th St
N 16th St
590
N 16th St
2,300
770
Harrison Ave
Billings Park
Billings Park
Overlook Ln
N 17th St
N 17th St
Missouri Ave
Maryland Ave
Elmira Ave
18th & Oakes
N 18th St
N 18th St
N 18th St
800
Mortorelli Dr
N 19th St
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N 19th St