Illinois Department of Natural Resources
JB Pritzker, Governor • Natalie Phelps Finnie, Director
One Natural Resources Way • Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Office of Water Resources, Michael A. Bilandic Building, 160 N. LaSalle St., S-703, Chicago, IL 60601

May 21, 2026
Application No. C20260016

Illinois Department of Natural Resources, Office of Water Resources
Public Notice

Dredging of North Slip,
in Lake Michigan, at 8501 S. DuSable Lake Shore Dr., Chicago, Illinois 60617

United States Steel Corporation, 600 Grant St., Room 1774, Pittsburgh, Pennsyvania 15219, and Related Midwest, c/o Blue Owl Real Estate Capital LLC, 150 N. Riverside Plaza, 37th Floor, Chicago, Illinois 60606, have applied for an Illinois Department of Natural Resources, Office of Water Resources permit for the dredging of North Slip, in Lake Michigan, at 8501 S. DuSable Lake Shore Dr., Chicago, Illinois 60617.

The applicants propose to dredge approximately 93,000 cubic yards of impacted sediment from North Slip, and place approximately 12,300 cubic yards of clean material, sourced from native soil horizons or USACE-dredged Lake Michigan sediment, as residual cover throughout the dredged areas. The area of dredging and residual cover placement within North Slip is approximately 11.62 acres. All dredged sediment will be dewatered and transported off-site for disposal. Dredging will be by hydraulic or mechanical methods. The project also includes the removal of the existing screen house structure, and reinforcement of the seawalls, at the west end of the slip. Large debris will be removed from the bed of the slip prior to dredging. Sediment resuspension controls will be deployed to prevent resuspended sediment and sheen from migrating outside the slip during the project. The proposed project will be reviewed using the Department's Part 3704 Rules. A location map and plans are attached to this notice.

No work is to start on this project unless and until such a time that the permit is issued.

Inquiries and comments regarding the proposed project can be directed to Eric Otto, Senior Water Resources Engineer, of the Chicago Office at IDNR/OWR, 160 N. LaSalle Street, Suite S-703, Chicago, Illinois 60601 or eric.otto@illinois.gov.

An expanded version of the public notice can be viewed at https://dnr.illinois.gov/waterresources/publicnotices.html.

The signatures, email addresses, and phone numbers of the applicant, co-applicant (if any), and authorized agent (if any) are redacted from this public notice. The mailing addresses and phone numbers of adjoining and adjacent property owners are redacted from this public notice.

Comments will be accepted through **June 26, 2026**.

United States Steel Corporation
Environmental Affairs Department
600 Grant St, Room 1774
Pittsburgh, PA 15219
Tel:
Email:

Kevin Stetter
Senior Manager
Environmental Remediation

April 29, 2026

Illinois Department of Natural Resources (IDNR)
Office of Water Resources
Division of Water Resource Management
Lake Michigan Programs Section
160 North LaSalle Street, Suite S-703
Chicago, Illinois 60601

Re: Part 3704 Public Waters Permit
North Vessel Slip Sediment Remediation
Former U. S. Steel South Works Plant

Mr. Eric Otto, PE:

United States Steel Corporation (U. S. Steel) is submitting the enclosed Joint Permit application form and supporting materials in application for an Illinois Department of Natural Resources (IDNR) Part 3704 Public Waters Permit for the North Vessel Slip Sediment Remediation Project located at the former U. S. Steel South Works Plant in Chicago, Illinois. U. S. Steel will concurrently be submitting a pre-construction notification under U.S. Army Corps of Engineers (USACE) Nationwide Permits 38 and 16 for dredging of impacted sediments and placement of residual cover in the North Slip, as well as Section 401 Water Quality Certification from the Illinois Environmental Protection Agency (IEPA). The project scope is detailed in the attached Supplemental Information.

Enclosed for review please find the completed Joint Permit application form and supplemental information. If you have questions about the information presented in this permit application, please contact me at or Amy Wolcott (Barr Engineering Co.) at .

Sincerely,

Kevin Stetter

Enclosures: Joint Permit Application Form
Supplemental Information

Cc: USACE, Chicago District
Darren Gove, IEPA
Bethany Rosemore, U. S. Steel
Amy Wolcott, Barr Engineering Co.

JOINT APPLICATION FORM FOR ILLINOIS

ITEMS 1 AND 2 FOR AGENCY USE

1. Application Number	2. Date Received

3. and 4. (SEE SPECIAL INSTRUCTIONS) NAME, MAILING ADDRESS AND TELEPHONE NUMBERS

3a. Applicant's Name:	3b. Co-Applicant/Property Owner Name (if needed or if different from applicant):	4. Authorized Agent (an agent is not required):
Kevin Stetter, Sr. Manager Company Name (if any) : United States Steel Corporation Address: Environmental Affairs Dept 600 Grant St, Room 1774 Pittsburgh, PA 15219 Email Address:	Company Name (if any): Related Midwest (aka 8080CHIL001, LLC) Address: c/o Blue Owl Real Estate Capital LLC 150 N. Riverside Plaza, 37th Floor Chicago, Illinois 60606 Attn: Real Estate Asset Management Email Address:	Amy Wolcott Company Name (if any): Barr Engineering Co. Address: 325 Lake Ave S - Suite 700 Duluth, MN 55811 Email Address:
Applicant's Phone Nos. w/area code Business: Residence: Cell: Fax:	Applicant's Phone Nos. w/area code Business: Residence: Cell: Fax:	Agent's Phone Nos. w/area code Business: Residence: Cell: Fax:

STATEMENT OF AUTHORIZATION

I hereby authorize, Barr Engineering Co. to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

April 29, 2026
Date

5. ADJOINING PROPERTY OWNERS (Upstream and Downstream of the water body and within Visual Reach of Project)

Name	Mailing Address	Phone No. w/area code
a. Related Midwest		
b. City of Chicago		
c.		
d.		

6. PROJECT TITLE:
North Vessel Slip Sediment Remediation

7. PROJECT LOCATION:
8501 S DuSable Lake Shore Dr.

LATITUDE: 41.74070 °N LONGITUDE: -87.53480 °W	UTMs Northing: Easting:				
STREET, ROAD, OR OTHER DESCRIPTIVE LOCATION	LEGAL DESCRIPT	QUARTER	SECTION	TOWNSHIP NO.	RANGE
Intersection of S Lake Shore Drive and E 85th St		SE	32	38N	15E

☐ IN OR ☐ NEAR CITY OF TOWN (check appropriate box)
Municipality Name
City of Chicago

COUNTY	STATE	ZIP CODE	WATERWAY	RIVER MILE (if applicable)
Cook	IL	60617	North Vessel Slip, Calumet Harbor, Lake Michigan	

Revised 2010
☒ Corps of Engineers ☒ IL Dep't of Natural Resources ☒ IL Environmental Protection Agency ☒ Applicant's Copy

8. PROJECT DESCRIPTION (Include all features):

Full project description available in the Supplemental Information. The Project consists of dredging sediment from the North Vessel Slip in order to remove impacted sediment. The North Slip was used for material transport in support of the former U. S. Steel South Works Plant, located in the Calumet Harbor of Lake Michigan in southern Chicago, Illinois. A former steel mill operated at the site from 1882 to 1992 and nearly all of the former steel mill structures have been demolished. The North Slip is a surface water feature formed by vertical steel sheet pile walls and surrounding dock wall structures and supports. The underwater land of the North Slip (i.e., land beneath the surface water) is owned by the State of Illinois. The land and features surrounding the North Slip were sold to 8080CHIL001, LLC (Related Midwest) in September 2025, except for the land closest to the mouth of the slip, which is a Right of Way owned by the City of Chicago. Sediment remediation is proposed in a Remedial Action Plan approved by the Illinois Environmental Protection Agency (IEPA) on 3/4/26 and currently under review by the US EPA. The Remediation Objectives Report was approved by IEPA on 10/17/25 (Illinois Inventory ID Number: 0316085741). The US EPA is also reviewing the Part 761 Remediation Plan for the Project. U. S. Steel has a Temporary Easement Agreement with Related (attached) that is effective until September 19, 2030.

All work described in this application will comply with the terms and conditions set forth in the U.S. Army Corps of Engineers (USACE) Nationwide Permit (NWP) 38 and NWP 16. An Individual Section 401 Water Quality Certification (WQC) from the IEPA will be obtained in accordance with the NWP special conditions.

9. PURPOSE AND NEED OF PROJECT:

After the United States Coast Guard observed a sheen on the surface water in the western part of the North Slip in 2017, investigations were completed to confirm the North Slip sediments were the source of the observed sheen. Further investigations were performed to better understand and characterize the extent of impacts in the North Slip. Dredging by hydraulic or mechanical methods, along with the placement of a residual cover, was chosen for implementation because it allows for the source material and limits long-term risks and monitoring requirements.

COMPLETE THE FOLLOWING FOUR BLOCKS IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

10. REASON(S) FOR DISCHARGE:

Dredging of sediment is required to meet the remediation objectives for the North Slip. To implement a dredging and residual cover option, sediments within the remedial extent and above the native till layer would be dredged, dewatered, and transported off-site for disposal. After sediment removal, a residual cover of clean material would be placed throughout the dredged areas. The dredging/residual cover alternative was carried forward to design because it would limit long-term liability, including operation and maintenance requirements; it would remove source material from the North Slip; it is implementable based on the dredge depth and sediment types present; and it would be effective at meeting the remediation objectives.

11. TYPE(S) OF MATERIAL BEING DISCHARGED AND THE AMOUNT OF EACH TYPE IN CUBIC YARDS FOR WATERWAYS:

TYPE: Residual cover material, sourced from native soil horizons or from USACE-dredged Lake Michigan sediment

AMOUNT IN CUBIC YARDS:

Approximately 93,000 CYD impacted sediment volume to be removed; Approximately 12,300 CYD clean residual cover volume to be placed

12. SURFACE AREA IN ACRES OF WETLANDS OR OTHER WATERS FILLED (See Instructions)

The area of dredging and residual cover placement in the North Slip will cover 11.62 acres.

13. DESCRIPTION OF AVOIDANCE, MINIMIZATION AND COMPENSATION (See instructions)

Sediment resuspension controls will be deployed to prevent resuspended sediment from settling outside of the immediate work area during debris removal, dredging, and placement of the residual cover. Floating oil and sheen-absorbent booms will be deployed as needed to absorb sheen produced from disturbing oily sediment. Turbidity measurements will be collected outside the active work areas. Should turbidity readings exceed predetermined limits, sediment resuspension management practices will be evaluated and work may be suspended to evaluate how to reduce sediment resuspension. Final discharge limits for the water treatment system are expected to be based on a combination of General Effluent Standards (35 ILCS I/304 Subpart A), General Use Water Quality Standards (35 ILCS I/302 Subpart B), and Lake Michigan Basin Water Quality Standards (35 ILCS I/302 Subpart E).

14. Date activity is proposed to commence: August 2026

Date activity is expected to be completed: December 2027

15. Is any portion of the activity for which authorization is sought now complete? Yes [ ] No [X]

NOTE: If answer is "YES" give reasons in the Project Description and Remarks section.

Month and Year the activity was completed

Indicate the existing work on drawings.

16. List all approvals or certification and denials received from other Federal, interstate, state, or local agencies for structures, construction, discharges or other activities described in this application.

Issuing Agency	Type of Approval	Identification No.	Date of Application	Date of Approval	Date of Denial
Illinois Environmental Protection Agency	Section 401 WQC	Pending	Pending	Pending	
Illinois Environmental Protection Agency	NPDES Permit for Storm Water Discharges from Con	Pending	Pending	Pending	
Illinois Department of Natural Resources	Permit for Project in Public Waters, P3704	Pending	Pending	Pending	
City of Chicago	City Harbor Permit	Pending	Pending	Pending	

17. CONSENT TO ENTER PROPERTY LISTED IN PART 7 ABOVE IS HEREBY GRANTED. Yes [X] No

18. APPLICATION VERIFICATION (SEE SPECIAL INSTRUCTIONS)

Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

Signature of Applicant or Authorized Agent — Date: April 29, 2026

Signature of Applicant or Authorized Agent — Date: 5/14/2026

Signature of Applicant or Authorized Agent — Date:

[X] Corps of Engineers [X] IL Dep't of Natural Resources [X] IL Environmental Protection Agency [X] Applicant's Copy

Revised 2010

SEE INSTRUCTIONS FOR ADDRESS

LOCATION MAP

See Figure 1

PLAN VIEW

See Figures 1-7

FOR AGENCY USE ONLY

Supplemental Information: USACE Pre-construction Notification and IEPA/IDNR Joint Permit

North Vessel Slip Sediment Remediation
Former U. S. Steel South Works Plant
Chicago, Illinois

Prepared for
U. S. Steel

Prepared by
Barr Engineering Co.

April 2026

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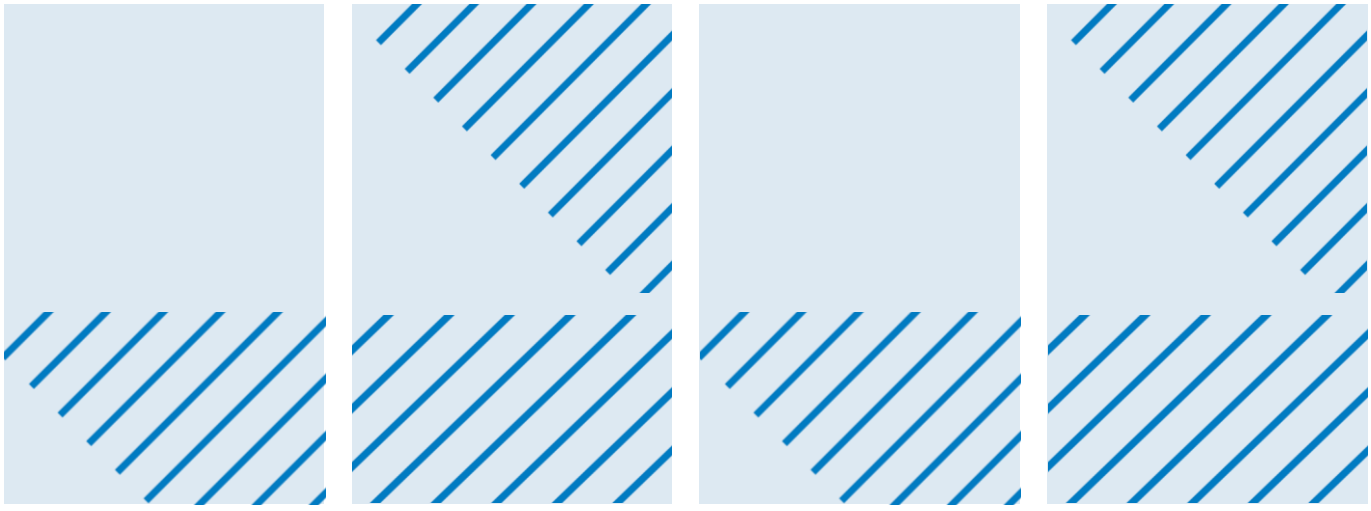

Supplemental Information: USACE Pre-construction Notification and IEPA/IDNR Joint Permit North Vessel Slip Sediment Remediation Former U. S. Steel South Works Plant Chicago, Illinois

April 2026

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Abbreviations

BFE	Base Flood Elevation
BMP	best management practices
bws	below water surface
CDOT	Chicago Department of Transportation
CFR	Code of Federal Regulations
COC	chemical of concern
DMU	dredge management units
EFT	ebullition facilitated transport
ESV	Ecological Screening Value
IDNR	Illinois Department of Natural Resources
IEPA	Illinois Environmental Protection Agency
IGLD 85	International Great Lakes Datum 1985
IPaC	Information for Planning and Consultation
IPI	in-place inclinometers
MPA	material processing area
NAPL	non-aqueous phase liquid
NAVD 88	North American Vertical Datum of 1988
NFR	No Further Remediation
North Slip	North Vessel Slip
NPDES	National Pollutant Discharge Elimination System
NWP	Nationwide Permit
OHWM	ordinary high-water mark
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
PCN	pre-construction notification
RAP	Remedial Action Plan
ROR	Remediation Objectives Report
SHPO	State Historic Preservation Office
Site	U. S. Steel South Works
SWPPP	stormwater pollution prevention plan
TPH	total petroleum hydrocarbon
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
U. S. Steel	United States Steel Corporation
WQC	Water Quality Certification

1 Introduction

This Supplemental Information document has been prepared to describe how remedial activities will be conducted to address impacted sediments in the North Vessel Slip (North Slip) at the United States Steel Corporation's (U. S. Steel) former South Works facility (the Site).

The Site is a former steel mill located in southern Chicago, Illinois, along the shoreline of Lake Michigan that operated from 1881 to 1992 (United States Steel Corporation and McCaffery Interests, Inc., 2010) (Figure 1). The North Slip is a surface water feature within the Calumet Harbor measuring approximately 2,750 feet long, 200 feet wide, and approximately 30 feet deep (top of water to sediment) formed by vertical sheet pile walls and surrounding seawall structures and supports (Figure 2 and Selected Design Drawings, Appendix A). The North Slip was issued a No Further Remediation (NFR) Letter by the Illinois Environmental Protection Agency (IEPA) in 2008, following surficial sampling of the North Slip sediment and remedial activities on the upland portion of the Site (Illinois Environmental Protection Agency, 2008a). After the United States Coast Guard observed a sheen on the surface water in the western part of the North Slip in 2017, investigations were completed to identify if the North Slip sediments could be the source of the observed sheen, and then further investigations were completed to better understand and characterize impacts in the North Slip.

Within the western portion of the North Slip, sediments are observed on top of native till and consist of a surficial layer of gray to brown silt overlying black silt (when present). The surficial gray silt is characterized by very soft, low-density material with no to light sheen and gas pockets that did not typically include heavy sheen or non-aqueous phase liquid (NAPL). The black silt layer is characterized by an oily sheen and coarse-grained clasts ranging from no coarse-grained materials to trace amounts. A sandy, lean clay/till unit has been observed in borings beneath the soft sediment of the Slip and this unit appears to be the regional confining unit based on review of regional geologic information. Ebullition-facilitated transport (EFT) of total petroleum hydrocarbons (TPH) from black silt in the North Slip was identified as the mechanism producing the observed surface water sheen. Figure 3 depicts a conceptual site model of the North Slip sediments and EFT.

Comingled with TPH-impacted sediments are chemicals of concern (COCs) that exceed the Tier 3 and risk-based remediation objectives: arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc, polycyclic aromatic hydrocarbons (PAHs), antimony, barium, selenium, silver, and polychlorinated biphenyl (PCB) compounds. Figure 4 presents the cleanup plan extent.

Dredging by hydraulic or mechanical methods, along with the placement of a residual cover, was selected as the remedy because it would remove the source material and limit long-term risks and monitoring requirements.

The following are the major components of the selected remedy:

- Obtain necessary permits and approvals from federal, state, and local agencies;
- Install structural monitoring devices to monitor the North Slip's walls and inform worker health and safety requirements. Monitoring devices will be installed prior to construction in the North Slip to record baseline conditions and structural monitoring will continue for the duration of the remedy;
- Remove and/or reinforce selected structures at the head of the slip prior to dredging;

- Prepare the site by constructing a material processing area (MPA) to process dredged sediment for disposal;
- Install sediment resuspension controls to prevent resuspended sediment and sheen from entering Calumet Harbor or resettling on previously dredged areas;
- Protect utilities and structures from damage;
- Remove major debris from the dredging area;
- Dredge sediment via mechanical and/or hydraulic means;
- Process sediment in the MPA, load processed sediment into trucks for disposal off-site at an appropriate landfill;
- Place residual cover over dredged area; and
- Remove sediment resuspension controls and demobilize.

Once construction is complete, no ongoing operations and maintenance are expected to be required.

The schedule for implementing the remedial response is dependent on regulatory approvals and contractor availability. It is anticipated that construction will begin in the third quarter of 2026 with an anticipated end date in the fourth quarter of 2027.

2 Existing Conditions

2.1 Site History and Future Use

The Site is a former steel mill located in southern Chicago, Illinois along the shoreline of Lake Michigan that operated from 1881 to 1992. Originally constructed by the North Chicago Rolling Mill, the Site became part of the newly formed U. S. Steel in 1901 through acquisitions and mergers (United States Steel Corporation and McCaffery Interests, Inc., 2010). The Site location and layout are shown in Figure 1 and Figure 2, respectively. A majority of the Site was originally underwater and was filled in over time with production byproducts, principally slag, to bring the land above lake level (United States Steel Corporation and McCaffery Interests, Inc., 2010). Historical upland investigations indicated fill and slag deposits range from 18 to 27 feet thick (Dames & Moore, 1970). The North Slip was originally constructed with Wakefield timber walls and the current steel pile bulkhead was installed in front of the Wakefield wall in about 1947 (Dames & Moore, 1970). Based on a review of available drawings, the slip was last dredged in 1975 (Bultema Dock & Dredge Company, 1975) and the bottom elevation of the slip appears to have deepened over time, presumably through dredging (Illinois Steel Co., 1935).

Production at the Site was scaled back beginning in 1982, with operations continuing until a final production shutdown in 1992 (United States Steel Corporation and McCaffery Interests, Inc., 2010). Decommissioning and demolition began in 1992 and were completed in 2003 (United States Steel Corporation and McCaffery Interests, Inc., 2010).

During decommissioning, outfalls to Lake Michigan, the North Slip, and the Calumet River were sealed. The National Pollutant Discharge Elimination System (NPDES) permit for the facility (No. IL0002691) was terminated in 2004 (Illinois Environmental Protection Agency, 2004), (United States Steel Corporation, 2003). Remaining structures at the Site include concrete ore walls and a small historic office building. The North Slip was leased to maritime companies from 2000 through at least 2007 for barge storage and material handling (URS Corporation, 2007).

As part of the realignment of DuSable Lakeshore Drive completed in 2013, the City of Chicago installed a stormwater treatment structure and storm sewer junction chamber vaults that discharge into the North Slip (CDOT, 2011). The only known ongoing discharges to the North Slip are from these City of Chicago storm sewers.

Properties owned by U. S. Steel within the site boundaries were sold to 8080CHIL001, LLC (Related Midwest) in September 2025. The developer, Related Midwest, plans to redevelop the Site into a research campus for quantum computing (Illinois Environmental Protection Agency, 2025). U. S. Steel has an access agreement in place with Related Midwest for the site access required for the North Slip remediation work.

2.2 Geography

The North Slip is a surface water feature formed by vertical steel sheet pile walls and surrounding seawall structures and supports. The underwater land of the North Slip (i.e., land beneath the surface water) is owned by the State of Illinois. The land and features surrounding the North Slip are owned by Related Midwest, except for a right-of-way on the northwest side of the head end of the slip and the land north and south closest to the mouth of the slip, which are owned by the City of Chicago. The right-of-way is a rectangular parcel of land encompassing the storm sewer vaults, treatment, and discharge to the North

Slip. The land near the mouth consists of two parks: Park 566, located to the north, and Steelworkers Park, located to the south, along Lake Michigan. Parcel ownership is depicted in Figure 2.

The North Slip measures approximately 2,750 feet long, 200 feet wide, and approximately 30 feet deep (from the top of the water to the sediment). The western end of the North Slip includes remnant basin foundations and sewer outfalls and has been identified as the Intake Basin (north basin, approximately 102 feet wide by 63 feet long and maximum 21 feet water depth) and the Overflow Basin (south basin, approximately 84 feet wide by 60 feet long and maximum 24 feet water depth).

Barr completed a bathymetric survey in 2017 and compared the data with a 1995 survey (Barr Engineering Co., 2017). Soundings were also available from 1935 and 1975 (Bultema Dock & Dredge Company, 1975), (Bultema Dock & Dredge Company, 1975), and (Illinois Steel Co., 1935). From a review of available drawings, it appears that the North Slip's bottom elevation deepened between 1935 and 1995; however, the bathymetry has not changed significantly from 1995 to 2017. The bathymetry of the western and central portions of the North Slip is generally the same from 1995 to 2017, while the bathymetry of the eastern portion of the North Slip generally indicates accretion of sediments at the mouth of the slip over time, likely as a result of deposition of sediments in this area from Calumet Harbor.

Bathymetry elevations surveyed in 2017 indicate the bathymetry is lowest in the south-central portion of the North Slip (elevation approximately 549 feet North American Vertical Datum of 1988 (NAVD 88)) with much of the bathymetry being below an elevation of 553 feet. Sediment elevation against the western basin structures is approximately 570 feet and decreases to approximately 552 feet over approximately 80 feet. Sediment elevations in the northeast corner at the mouth of the slip increase up to 582 feet, where sediment forms an above-water beach.

The top of the sheet pile walls is at an elevation of approximately 588 feet NAVD 88. Ground surface elevations surrounding the slip are relatively flat until they are interrupted by the remaining ore wall on the south side and retaining walls on the north side of the slip.

2.3 Geology

Based on a review of publicly available geologic maps, the overall geology in the project area generally consists of Silurian-aged sedimentary bedrock overlain by glacial deposits, predominantly comprising glacial lake and glacial moraine deposits (Willman, H.B., et al., 1967).

At the Site, geology generally comprises glacial moraine (till) deposits, predominantly silts and clays with varying amounts of sand and gravel, overlain by lacustrine sands, and then industrial fill associated with historic use and construction of the facility. Bedrock at the Site is expected to be Silurian-aged Dolostone (Willman, H.B., et al., 1967). During the 2017 investigation, apparent limestone bedrock was encountered at depths between 50.7 and 60.9 feet below the water surface (bws) within the North Slip (Barr Engineering Co., 2017).

Investigations in 2017 and 2020 (Barr Engineering Co., 2017), (Barr Engineering Co., 2021) indicate sediments within the North Slip consist of a surficial layer of gray to brown silt overlying black silt and a native till within the western portions of the slip. Sediments transition to sandy deposits with little silt content moving eastwards towards the mouth of the slip where black silts transition to black sands. These observations are consistent with the differing hydrodynamic environments present at the two reaches of the slip – a deeper and quieter area in the western portion of the slip where sediments are dominated by

silts as compared to a shallower and relatively higher energy environment near the mouth of the North Slip and Calumet Harbor where sands are present.

Surficial gray silt is characterized by very soft, low-density material with no to light sheen and gas pockets that do not typically include heavy sheen or NAPL. Portions of the slip adjacent to the western basins lack an overlying gray-to-brown silt layer, and black silt is present at the sediment surface. The black silt layer is characterized by an oily sheen and coarse-grained clasts, ranging from the absence of coarse-grained materials to trace amounts. Where present, the black silts appear to extend down to the top of the native till layer, where cores encountered refusal. The till layer is characterized as dense sandy lean clay and is assumed to be present throughout the North Slip and adjoining areas (Barr Engineering Co., 2022). The till layer will be the target dredge depth for the remedy and will cause a noticeable change in conditions for the dredge operator when the till layer is encountered (i.e., the till layer will present hard dredging conditions). The till layer characteristics are discussed in more detail in the following section.

2.4 Hydrogeology

In general, and regionally, the primary hydrogeologic units at and surrounding the Site are an unconsolidated sand aquifer (Calumet Aquifer), a consolidated Silurian-Devonian bedrock aquifer, and a confining unit separating the two. The confining unit is composed of the Antrim Shale, the silt and clay tills of the Lemont Drift and the Wadsworth Till, the silt and clay lacustrine deposits of the Carmi Member of the Equality Formation, and fine-grained fill deposits (Kay, R.T., Duwelius, R.F., Brown, T.A., Micke, F.A., and Witt-Smith, C.A., 1996). At the Site, a sandy lean clay/till unit has been observed in borings beneath the soft sediment of the Slip, and this unit is assumed to be the regional confining unit based on review of regional geologic information.

2.5 Surface Water Hydrology

The work is located primarily in the North Vessel Slip of Calumet Harbor on Lake Michigan and in associated workspace, with staging areas on adjacent paved and concrete areas of the former U. S. Steel South Works Plant. The ordinary high-water mark (OHWM) of Lake Michigan is 580.5 feet, as set by USACE using the International Great Lakes Datum 1985 (IGLD 85). There are no other aquatic resources in the project footprint.

Lake Michigan water levels within the North Slip fluctuate over time (historically ranging from approximately 576.5 to 583 feet NAVD 88 (Barr Engineering Co., 2017) and have recently been observed to be near historic highs (the elevation was approximately 581 feet during 2021). The mean water level measured at NOAA water level station 9087044 (located in Calumet Harbor) between January 2010 and February 2025 is 580.09 feet NAVD 88.

According to FEMA Map Panels 17031C0656K and 17031C0657K, the area of dredging and residual cover placement within the North Slip is located in Zone AE with a Base Flood Elevation of 585 feet. All construction staging and work areas outside the slip itself are located in upland areas and Zone X on the FEMA Map.

3 Options Assessment

An options assessment was completed to identify the most appropriate remedial alternative to achieve the remedial objectives. The initial screening step of the options assessment considered a wide variety of technologies, and select technologies were further evaluated for their favorability with respect to site-specific conditions, including, but not limited to, bathymetry, in-water structures, ebullition, and distribution of impacted sediments. The assessment identified dredging, by hydraulic and/or mechanical methods, as favorable technologies.

Dredging by hydraulic and/or mechanical methods, along with placement of a residual cover, was selected as the remedy for further evaluation because it would remove source material and limit potential long-term risks and monitoring requirements. To implement a dredging and residual cover option, sediments within the remedial extent that exceed the remediation objectives would be dredged, dewatered, and transported off-site for disposal. After sediment removal, a residual cover would be placed throughout the dredged areas. Implementation of the remedy would include:

- Obtain necessary permits and approvals from federal, state, and local agencies;
- Install structural monitoring devices to monitor the North Slip's walls and inform workers of health and safety requirements. Monitoring devices will be installed prior to construction in the North Slip to record baseline conditions and structural monitoring will continue for the duration of the remedy;
- Remove and/or reinforce selected structures at the head of the slip prior to dredging;
- Prepare the site by constructing a MPA to process dredged sediment for disposal;
- Install sediment resuspension controls to prevent resuspended sediment and sheen from entering Calumet Harbor or resettling on previously dredged areas;
- Protect utilities and structures from damage;
- Remove major debris from the dredging area;
- Dredge sediment via mechanical and/or hydraulic means;
- Process sediment in the MPA, load processed sediment into trucks for disposal off-site at an appropriate landfill;
- Place residual cover over dredged area; and
- Remove sediment resuspension controls and demobilize.

Once construction is complete, no ongoing operations and maintenance are expected to be required.

This remedy was carried forward to design because it would be effective at meeting the remediation objectives: removing source material from the North Slip; limiting long-term liability, including eliminating operation and maintenance requirements; and being implementable based on the dredge depth and sediment types present.

4 Design and Implementation Summary

4.1 Permit Requirements and Approvals

4.1.1 Permits

The selected remedy will require permits from federal, state, and local agencies. This project aligns with the cleanup intent of U.S. Army Corps of Engineers (USACE) Nationwide Permit (NWP) 38 and with the return water authorized by USACE NWP 16. NWP 38 authorizes specific activities required to affect the containment, stabilization, or removal of impacted materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. NWP 16 authorizes the return water from dredged material contained in upland areas. The liquid generated from dewatering dredged sediment will be collected and treated prior to being discharged back into the North Slip. The USACE Pre-construction Notification (PCN) is being submitted concurrently with a joint permit application to Illinois Department of Natural Resources (IDNR) and the IEPA.

The project is anticipated to require IEPA Individual Section 401 Water Quality Certification (WQC) from an IEPA under NWP 16 due to the return water discharge to Lake Michigan from dredging activities. IEPA may also issue a State Construction and Operating Permit for the temporary water treatment system.

The project will disturb greater than one acre of land during construction; therefore, coverage under the IEPA NPDES General Permit for Storm Water Discharges from Construction Site Activities will be obtained.

It has been determined that City of Chicago Stormwater Management Plan approval is not required since this work falls under the maintenance exemption. The Chicago Department of Transportation (CDOT) requires a Harbor Permit for any construction activity that occurs within 40 feet of the Base Flood Elevation (BFE) of a City waterway. A Harbor Permit will be obtained following receipt of applicable permits from other agencies.

4.1.2 Threatened and Endangered Species Review

A Threatened and Endangered Species Due Diligence Review was completed to determine the potential for adverse impacts to federally-listed species. The online U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool was used to identify potential presence of T&E species within the project area. In addition, a formal EcoCAT was submitted to the IDNR. IDNR identified no records of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

The proposed work is located within suitable nesting habitat for migratory birds. If work will occur during the migratory bird nesting season (April 1 – July 15), a nest survey will be conducted prior to mobilization. If nests are identified and impacts cannot be avoided, U. S. Steel will contact USFWS before proceeding.

Based on the review, the proposed work will have no effect on federally-listed or state-listed species. Please refer to Appendix B for further information on species' determinations.

4.1.3 Cultural Resources Review

Barr completed a cultural resources literature review for the North Slip in April 2025, and a memo was finalized in December 2025 (Appendix C). Reviewed records indicate that no previously recorded archaeological sites or historic architectural resources have been recorded within the North Slip. Two archaeological sites have been recorded adjacent to the slip but will not be impacted by the work. A review of historic maps and aerials found that no buildings or structures predate the slip and the North Slip dates to at least 1900. An Underwater Inspection Report prepared for the project found a modern, sunken sailboat near the southern wall of the slip (Barr Engineering Co., 2021).

Because of the age of the North Slip and the planned structure removal, a meeting with the State Historic Preservation Office (SHPO) was held on April 14, 2025, to discuss the project. The meeting included a review of the North Slip and proposed project plans, as well as a discussion on whether the North Slip should be considered a cultural resource and documented accordingly. Following review and discussion, the SHPO corresponded with Barr via email on April 18, 2025, indicating that the North Slip is not considered historic and that no additional work regarding cultural resources is needed for the project to proceed as planned (State Historic Preservation Office, 2025).

4.1.4 Review of Potential Impacts on Public and Private Uses of the Public Water

This project will have short-term impacts on public and private uses of the North Slip. Once the dredging and residual cover placement has been completed, public and private uses of the North Slip will see positive impacts from improved aquatic habitat and sediment remediation. The North Slip is not currently used for commercial fishing, skiing, swimming, wading, hunting, trapping, or snowmobiling.

The slip is used for recreational fishing; however, access to the slip is primarily via Calumet Harbor. Public access to the slip via private property is prohibited. During construction, access to the slip will be prohibited.Impacts to recreational fishing will be short-term during the actual construction phase.

4.2 Site Preparation and General Requirements

4.2.1 Structural and Geotechnical Monitoring Plan

Monitoring of the structures is planned to identify unacceptable movement of the structures and provide notice to workers during construction. The monitoring will provide advanced warning if large deflections, indicative of incipient wall failure, are detected. Appropriate response actions will be taken should wall deflections or tilt movements be detected. Structural monitoring will be implemented prior to construction to establish baseline data and then monitoring frequency will increase during active construction.

The monitoring system includes both automated sensing and manual sensing to detect changes in wall stability. The automated monitoring component includes sensors and data loggers to measure tilt (x, y, and z direction) of the existing sheet pile walls at the site, in-place inclinometers (IPIs) to measure ground movements behind the sheet pile walls, and a data storage and visualization system. The manual monitoring component includes survey (during dredging operations) of the top of the sheet pile wall, collocated with the tilt sensor locations, and IPIs behind the sheet pile wall. Established trigger action levels will notify the project team of wall movements. The recommended responses from trigger action levels vary depending on the level of movement detected. Response actions will be documented in the

structural monitoring plan and may range from performing additional visual reviews to stopping work and/or evacuating the work area.

4.2.2 Demolition/Structural Reinforcement in the Head of the Slip

Barr has reviewed historical information on structures at the head of the North Slip to develop a working understanding of the existing conditions as a basis for the remediation design. As part of the design, it was identified that the Screen House structure would be removed and that the basin walls would be reinforced to facilitate the implementation of the remediation design in this area. The design for structures in the Head of the Slip includes:

- The southwest corner brace is bent, and it will be stabilized or replaced using structural steel construction techniques.
- The existing Screen House concrete structure and the connecting sheet pile walls located directly to the north and south will be removed to the top of the submerged concrete pile cap to aid in dredging in this area.
- The basin walls will have anchors installed to provide additional stabilization. These tieback anchors will connect to structural steel walers installed along the wall face. Tieback anchor installation is proposed to be completed from the land in a staged manner starting from the most stable area and working towards less stable areas.

4.2.3 Material Processing Area

Sediment and debris removed from the North Slip will be hauled or pumped to an MPA for stockpiling, dewatering, and loading into trucks for disposal. The MPA's construction will be completed prior to commencement of debris removal or sediment dredging and it will be constructed in a manner that captures decant water generated from sediment and debris for treatment prior to discharge. A sump will be constructed at one end of the MPA to collect decant water from dewatering sediment and runoff within the MPA. Water collected in the sump will be treated prior to discharge back into the North Slip in accordance with the applicable permit requirements. Additionally, controls will be installed to prevent equipment from tracking material outside of the MPA after sediment or debris is processed within the MPA. Impacted sediment is not anticipated to leave the MPA except when loaded into trucks and transported offsite for disposal. Figure 5 depicts the proposed location for the MPA.

4.2.4 Erosion and Sedimentation Control

Upland erosion and sedimentation control refers to practices employed to control soil erosion and sedimentation within the upland work areas outside of the North Slip. An IEPA NPDES General Permit for Storm Water Discharges from Construction Site Activities will be obtained for this Project. Erosion and Sedimentation controls, such as stabilized construction entrances/exists, will be implemented in accordance with the obtained permits and stormwater management ordinances.

4.3 Dredging and Waste Management

4.3.1 Sediment Resuspension Controls

Sediment resuspension controls will be deployed to prevent resuspended sediment and sheen from migrating outside the immediate work area during debris removal, dredging, and placement of the

residual cover. Floating oil and sheen-absorbent booms will also be deployed as needed to absorb sheen produced from disturbing oily sediment. Figure 6 depicts a conceptual layout of how sediment resuspension controls are expected to be deployed.

Prior to in-water work, a sediment resuspension control will be deployed at the mouth of the North Slip to prevent resuspended sediment from leaving the North Slip and settling in Calumet Harbor. This sediment resuspension control will remain in place for the duration of the in-water work. A sediment resuspension control will also be deployed surrounding the active work area. Turbidity measurements will be collected outside the active work areas. Should turbidity readings exceed predetermined limits, sediment resuspension management practices will be evaluated and work may be suspended to evaluate how to reduce sediment resuspension.

Sediment resuspension control structures will be inspected on a regular basis for visual integrity of the structure, waves overtopping, anchor function, and unplanned movement or displacement. Regular visual inspections of the surface water outside the primary control structure will be conducted to assess visual observations of turbidity, discoloration, oil film, floating solids/particulates, floating debris, foam, or other notable observations. If damages or deficiencies are observed during inspections, in-water work may be suspended until repairs are completed and/or additional controls are in place.

Contingency materials will be stored on Site for emergency use if installed control measures need to be repaired, replaced, or supplemented. Debris removal, dredging, and residual cover placement operations will not be performed if suspended sediment and sheen control structures are not in place or are not effective.

4.3.2 Debris Removal

Pre-design surveys have identified debris throughout the North Slip, including steel beams and a sunken boat. Debris will likely be removed prior to dredging. Sediment resuspension controls will be in place during debris removal.

It is expected that smaller debris will be removed with sediment during dredging activities, and will be disposed of with sediment or screened from sediment and managed according to the requirements of the disposal facility. The Contractor is responsible for identifying offsite disposal options for debris and verifying the disposal company's acceptance of the waste stream.

Some debris (such as the sunken boat) may require specialized techniques for removal. While not anticipated, it is possible that other debris, such as drums, totes, or other containers may be encountered. If this type of debris is encountered, the contractor will remove these containers in a manner that limits the risk of releasing unidentified contents. The contents will then be tested to determine appropriate treatment and disposal methods.

4.3.3 Sediment Removal

The remediation design allows the contractor to identify the most appropriate means and methods for sediment removal, and the contractor may use mechanical, hydraulic, or a combination of both types of removal.

The North Slip has been divided into six dredge management units (DMUs). DMU 1 is at the western end (head) of the slip, and DMU 6 is at the mouth of the slip where it meets Calumet Harbor (Figure 2). Because DMU 1 includes structures to be removed or modified prior to dredging, the sediment removal

approach in DMU 1 is expected to differ from that in the other DMUs. The anticipated demolition of structures in DMU1 is described in Section 4.2.2.

Dredging best management practices (BMPs) will be employed to minimize sediment resuspension, and dredged materials will not come into contact with areas other than those designated to handle, dewater, and load material for transport offsite.

The remediation design calls for sediment within the remediation extent to be removed down to the surface of the till layer. The till layer is denser than the overlying silty sediment, and the dredge operator will be able to distinguish it when encountered. However, if the contractor dredges to the design elevation and the operator does not encounter till, the operator will continue dredging beyond the design elevation to remove unanticipated sediment above the till surface. If till is encountered above the design elevation, additional local evaluation may be conducted to determine whether additional dredging is necessary.

4.3.4 Dredged Material Handling and Disposal

Dredged material handling methods will vary depending on the type of dredging method used (mechanical or hydraulic). For both methods, it is expected that dredged material will be transported to the MPA for dewatering and loading onto trucks for offsite disposal.

In mechanical dredging, the process typically involves removing material down to the till with an excavator and clamshell bucket attachment and loading the material onto a barge for transport to the bank. There, another excavator transfers the dredged material to a haul truck for transport to the MPA. The MPA is described in Section 4.2.3 and will be constructed to contain dredged material and its decant water. Once at the MPA, the material will be screened for debris and staged for dewatering. If a hygroscopic amendment is required to meet the landfill's disposal criteria, the amendment will be mixed into the dredged material. If necessary, amendment(s) used in dewatering will be approved by the landfill prior to use. The dredged material is anticipated to be dewatered passively, and free water will be collected and treated prior to being discharged to the North Slip in accordance with the NPDES permit. Water treatment is discussed in Section 4.3.5. Once the dredged material is dewatered to a suitable condition for transport and disposal, it will be loaded onto trucks for transport to a certified offsite landfill.

In hydraulic dredging, the process typically involves removing material down to the till using water pressure and suction. Dredged material will be contained in a floating and overland slurry pipeline between the dredging location and the MPA. The dredged material slurry will likely be pumped into the MPA for dewatering via geotextile tubes (aka geotubes). If necessary, conditioning amendment(s) will be used in dewatering and coordinated with the landfill prior to use. Free water from the geotubes will be contained and treated by the water treatment system prior to discharge to the North Slip, in accordance with an NPDES permit. Water treatment is discussed in Section 4.3.5. Once the dredged material is dewatered sufficiently for transport and disposal, the geotubes and material contained within them will be loaded onto trucks for transport to a certified offsite landfill.

Whether hydraulically or mechanically dredged, the dredged material will be transported by truck to a certified offsite landfill, where it will be disposed of in accordance with a waste profile accepted by the landfill and in accordance with federal, state, and local regulations.

4.3.5 Water Treatment

Free water from the MPA will be treated onsite prior to discharging into the North Slip in accordance with the IEPA Section 401 WQC and the IEPA State Construction and Operating Permit. The contractor will be

responsible for designing and constructing the water treatment system to accommodate the size and flow requirements based on their dredging approach.

During the investigation phase, sediment and surface water samples from the North Slip were evaluated in a treatability study to represent both mechanical and hydraulic dredging methods.

Final discharge limits for the water treatment system are expected to be based on a combination of General Effluent Standards (35 ILCS I/304 Subpart A), General Use Water Quality Standards (35 ILCS I/302 Subpart B), and Lake Michigan Basin Water Quality Standards (35 ILCS I/302 Subpart E).

Using the treatability study's elutriate concentrations and considering the water quality standards listed above, the treatment system is generally expected to consist of bag filtration to remove oil and grease and granular activated carbon filtration vessels. Monitoring of the treatment components will be dictated by the permits and spare bags and filtration vessels will be available and changed, as needed.

4.3.6 Residual Cover Placement

The dredging process may result in a small amount of residual sediment remaining in dredged areas (US Army Corps of Engineers, January 2008). Once it is verified that dredging is complete in a DMU, the contractor will place a residual cover over the dredged area to provide a buffer between the residuals and the bioactive zone that the benthic invertebrates are expected to inhabit after dredging.

Residual cover material will be sourced from native soil horizons or from USACE-dredged Lake Michigan sediment approved for beneficial reuse with written documentation. Urban fill will not be used as residual cover, and the borrow source will not be from an area of potential impacts. Cover import material will be assessed throughout the project to verify compliance with the specification and will be free of contamination, invasive species, debris, roots, organic material, frozen, and recycled materials.

The contractor will determine the means and methods for placing the residual cover; they may use mechanical means, such as placing it with an excavator, or they may use hydraulic methods, such as applying the cover via slurry. The contractor will be required to control turbidity outside of the working area generated from cover placement.

5 401 Individual Water Quality Certification

This section includes the technical information required by IEPA and USACE for an individual 401 water quality certification, as outlined in the letter titled "Submittal of documents pertaining to the U. S. Steel North Vessel Slip Remediation Project in Cook County" (Appendix D), and discussed in a virtual Pre-filing meeting on January 7, 2026. Representatives from IEPA, U. S. Steel, and Barr Engineering Co. attended the Pre-filing meeting. The technical information requests outlined in the letter (Appendix D) are listed as bold text below each subsection heading in this section. U. S. Steel's response follows each item requested and reflects the discussion with IEPA staff during the Pre-filing meeting.

5.1 Characterization of Waters

Title 35 Ill. Adm. Code Section 302.105(f)(1)(A) requires identification and characterization of the waterbody affected by the proposed activity and the existing uses of the water body for activities subject to Agency certification under federal CWA Section 401. The application must provide a waters delineation diagram that clearly labels and identifies the extent of all aquatic resources within and adjacent to the project boundaries regardless of jurisdictional status, and a waterbody characterization that addresses physical, biological, and chemical conditions of the water body(ies) affected by the proposed activity.

(a) For streams and open waters, full characterization utilizing applicable assessment protocols must be provided by the project proponent if the water body has not already been assessed by Illinois EPA and is not found on the Illinois EPA 305(b) Integrated Water Quality Report. In some instances, a full characterization may not be necessary depending on the aquatic life uses of the water.

As described in Section 1, the water body affected by the proposed project is the North Slip in Calumet Harbor of Lake Michigan. The project area and North Slip are shown in Figure 1 and Figure 2. Section 2 includes a detailed description of the North Slip.

The Lake Michigan Shoreline (Hydrologic Unit Code ID 0404000205) at the North Slip is addressed in the Illinois Integrated Water Quality Report and Section 303(d) List, 2024 (Illinois Environmental Protection Agency, 2024), which is based on federal guidance for meeting the requirements of Sections 305(b), 303(d), and 314 of the Clean Water Act.

(b) For wetlands, characterization will be satisfied with a proper delineation conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual with the Midwest Regional Supplement and a Floristic Quality Assessment consisting of an FQI and Native Mean C of the floristic community based on Plants of the Chicago Region (Swink and Wilhelm 1994).

Not applicable; there are no wetlands within the Site (U.S. Fish and Wildlife Service).

5.2 Pollutant Loading and Degradation Analysis

Title 35 Ill. Adm. Code Section 302.105(f)(1)(B) requires identification and quantification of (1) the proposed load increases for all applicable parameters and (2) all potential adverse actions to existing uses of the water body for activities subject to Agency certification under federal CWA

Section 401. The application must provide a detailed analysis addressing all unavoidable impacts that may occur as a result of construction which have the potential to cause loss of aquatic habitat, loss of aquatic function, temporary or permanent additions of pollutant parameters (e.g., TSS, TDS, pH, ammonia (as N), BOD, inorganic and organic compounds, etc.) or reduction of dissolved oxygen.

The analysis must also include evaluation of all potential operational effects of the proposed activity to include long term water quality and habitat degradation resulting from alterations to land runoff quality and quantity, introduction of new non-point pollutant sources, loss or degradation of riparian or shoreline buffer areas, and any other project relevant factors.

As discussed in Section 3, dredging was selected as the most appropriate remedial alternative to achieve the remedial objectives established in partnership with IEPA and USEPA. The following documents outline the remedial objectives, design, and implementation plan for the North Slip:

- Remediation Objectives Report (ROR) – submitted to IEPA in August 2025 and approved by IEPA Bureau of Land in October 2025
- Part 761 Risk-Based Remediation Plan for Polychlorinated Biphenyls in Sediment – submitted to USEPA Region 5 (Remediation Branch of the Land, Chemicals, and Redevelopment Division) in March 2025
- Remediation Action Plan (RAP) submitted to IEPA and USEPA in January 2026

Temporary and limited disturbance of the water body will occur during dredging and residual cover placement. Dredging activities and placement of the residual cover will be isolated by water quality controls on either side of active operations, along with secondary controls at the mouth of the North Slip and managed using the practices and controls discussed in Section 4.

Elutriate testing was completed to evaluate the potential temporary impacts on the water column during dredging. Appendix E includes a summary of the most stringent water quality criteria for Calumet Harbor, sample results collected in Calumet Harbor and the North Slip in September 2023 (i.e., background concentrations). Of these analytes, arsenic, manganese, mercury, several semi-volatile organic compounds (anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perlyne, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, and PCBs), concentrations in the elutriate testing exceed the most stringent water quality criteria.

The surface water concentrations that may be elevated by sediment suspension are expected to return to background concentrations following settlement. As described further in Section 5.5, sediment suspension will be evaluated during the project to limit impacts outside the active work areas. As discussed in the ROR and RAP, surface water concentrations in the North Slip appear to be influenced by Calumet Harbor, resulting in exceedances of the most stringent surface water screening values for inorganic arsenic and PCBs. Following remediation of sediments, it is anticipated that surface water conditions in the North Slip will improve to Calumet Harbor surface water concentrations. Surface water data for inorganic arsenic and PCBs will be collected. If post-sediment remediation Calumet Harbor surface water concentrations still appear to contribute to exceedances of surface water quality standards in the North Slip, U. S. Steel will propose Impractical remediation for surface water.

The long-term goals of the project are to improve sediment and water quality in the North Slip through the removal of impacted sediments and water treatment; therefore, the project is anticipated to improve

aquatic habitat and function in the long term and not result in continued additions of sheen-inducing pollutants to the water body.

5.3 Purpose and Benefit

Title 35 Ill. Adm. Code Section 302.105(f)(1)(C) requires identification of the purpose and anticipated benefit to the community at-large of the proposed activity for activities subject to Agency certification under federal CWA Section 401. The application must provide a discussion of the purpose and the socio-economic benefits of the activity.

Additionally, in accordance with 302.105(c)(1), for any activity that has potential to cause a significant lowering of the water quality, as demonstrated by the application or designated by the Agency, the project proponent must demonstrate the impacts are necessary to accommodate important economic or social development. Such demonstration of necessity and benefit importance shall be conducted in accordance with Economic Guidance for Water Quality Standards developed by USEPA.

The United States Coast Guard observed a sheen on surface water in the North Slip in 2017. Investigations were completed to determine the magnitude and extent of impacted sediments and identify sediments that had the potential to produce the sheen observed in the North Slip. Removal of these sediments by dredging (hydraulic or mechanical methods), along with the placement of a residual cover over the dredge area was selected as the remedy to mitigate the sheen and improve the long-term water quality in the North Slip. The project will have short-term water quality impacts during dredging from resuspended sediments, but those impacts will be confined to the North Slip by silt curtains and sheen mitigated with oil absorbent booms during construction. The long-term water quality impacts will improve after remediation of the impacted sediments, as the source of the sheen (the impacted sediments) will be removed.

5.4 Alternatives Assessment

Title 35 Ill. Adm. Code Section 302.105(f)(1)(D) requires an evaluation of possible alternatives that result in no or less load increase and no or less environmental degradation as compared to the impacts of the proposed activities subject to Agency certification under federal CWA Section 401. The application must provide a detailed discussion of alternative project configurations and/or locations that were considered during project development so as to ensure only unavoidable environmental impacts are proposed.

The “no action” alternative would result in continued sheen generation in the North Slip via EFT (Section 1) and was therefore not evaluated further.

The project is the preferred alternative to the “no action” alternative. Remediation of sediments in the North Slip will mitigate sheen generation and reduce pollutant loading by removing impacted sediments. As described in Section 4.3.5, water from dredging and dewatered sediment will be treated with a water treatment system designed to treat the return water from sediment dewatering to WQS, which will reduce loading in the North Slip and Calumet Harbor.

5.5 Avoidance and Minimization

Title 35 Ill. Adm. Code Section 302.105(c)(2)(B) requires the Agency to assure that all technically and economically reasonable measures to avoid or minimize the extent of the proposed pollutant

loading and/or environmental degradation have been incorporated into the proposed activity. In accordance with Section 302.105(f)(1)(E), the application must provide discussion of how the proposed activity incorporates all reasonably expected pollution control measures to meet Antidegradation requirements.

Multiple best management practices, including physical controls, will be implemented during the project to avoid or minimize the extent of pollutant loading. These practices include, but are not limited to:

- The project will occur in stages to minimize impacts to the North Slip. In-water work will be isolated by water quality controls on either side of active operations, along with secondary controls at the mouth of the North Slip. DMUs will be completed sequentially.

- The MPA will be constructed upland of the dredging area and will have dewatering containment, a sump, and a temporary water treatment system (Section 4.2.3). The water treatment system will include equalization tanks to protect the system from surges during dredging operations. The system is designed to allow for the installation of additional equalization tanks, if necessary.

- The project will have a construction stormwater pollution prevention plan (SWPPP) that is developed in accordance with IEPA's NPDES Permit for Stormwater Discharges from Construction Site Activities (ILR10). Additional detail on erosion and sediment controls, including in-water sediment resuspension controls and booms, is discussed in Section 4.3.

- Collection of turbidity measurements outside the active work areas. Should turbidity readings exceed predetermined performance standards, sediment resuspension management practices will be evaluated, and work may be suspended, if needed, to evaluate how to reduce sediment resuspension or manage sheen. The performance standards are established in the construction specifications. These specifications are:

    - A primary threshold of 25 Nephelometric Turbidity Units (NTU) above background requires the contractor to assess operations.

    - A secondary threshold of 50 NTU above background requires work stoppage and modifications to practices.

- Operation and maintenance plans will be developed for hydraulic and mechanical dredging.

5.6 Protection of Existing Uses

Title 35 Ill. Adm. Code Section 302.105(c)(2)(B) requires the Agency to assure that all existing uses will be fully protected. In accordance with Section 302.105(f)(1)(E), the application must provide a compensatory mitigation plan for unavoidable permanent losses of surface waters of the State. The mitigation plan must sufficiently demonstrate that existing uses, regardless of whether they are included in the water quality standard, will be maintained, and protected within a reasonable period of time following the proposed impacts. For permittee-responsible compensatory mitigation, all information related to mitigation work plans including existing and proposed site diagrams, work specifications and characterization of existing waters at the mitigation site must be included in the plan. The plan must also provide explanation of the goals the mitigation plan, post construction monitoring intervals, the criteria for mitigation success, and the adaptive management procedures for when monitoring indicates nonaccomplishment of mitigation goals. For compensatory mitigation using third party mechanisms such as mitigation banking or in-lieu

fee mitigation programs, additional information pertaining to the specific mechanism and purchase agreements will be required.

For the Illinois Integrated Water Quality Report (Illinois Environmental Protection Agency, 2024), IEPA assesses Lake Michigan for Aquatic Life, Primary Contact, Aesthetic Quality, Fish Consumption, and Public and Food Processing Water Supply use. The 2024 Integrated Water Quality Report lists the following impairments by beneficial uses for HUC 0404000205 (Lake Michigan Nearshore, assessment unit ID IL_QLM_01):

- Aquatic Life: None
- Primary Contact: None
- Aesthetic Quality: Phosphorus, total
- Fish Consumption: Mercury, PCBs, aldrin, dieldrin, endrin, heptachlor, mirex, toxaphene
- Public and Food Processing Water Supply: None

Multiple management practices, described in Section 4, will be implemented to mitigate impacts on aquatic life during construction. The project is anticipated to improve and expand the use of aquatic life in the long term through the remediation of impacted sediments and the removal of the Screen House (Section 4.2.2).

As discussed in Section 4.1.4, the North Slip is not currently used for primary contact use (i.e., full-body water immersion activities, such as swimming or wading), and boat access will be prohibited during construction along with the continued restriction of public pedestrian access, thereby restricting fish consumption. Public and Food Processing Water Supply is also not an existing use, as there is not a water intake within the North Slip.

A compensatory mitigation plan is not required, as no permanent losses to the water body will occur as a result of the project.

5.7 State Resource Agency Consultation

Title 35 Ill. Adm. Code Section 302.105(f)(1)(F) and 302.105(f)(3)(C) requires that the proponent provide proof that an application has been filed with the Illinois Department of Natural Resources (Department) and furnish the Agency with the results of the consultation processes undertaken with the Department for compliance with the Illinois Endangered Species Protection Act [520 ILCS 10/11(b)], the Illinois Natural Areas Preservation Act [525 ILCS 30/17], the Interagency Wetland Policy Act of 1989 [20 ILCS 830] (when required), and the Illinois State Agency Historic Resources Preservation Act [20 ILCS 3420]. Provide proof that an application has been filed with the Department and consultation results as described above.

The consultation process for compliance with the Illinois Endangered Species Protection Act and Illinois Natural Areas Preservation Act is discussed in Section 4.1.2. The consultation process for compliance with the Illinois State Agency Historic Resources Preservation Act is discussed in Section 4.1.3. The project does not require consultation for the Interagency Wetland Policy Act of 1989.

5.8 Specific Work Descriptions and Stormwater Compliance

In accordance with Title 35 Ill. Adm. Code Section 302.105(f)(1)(E), the application must provide sufficient information to facilitate a fact-based understanding of the scope of impacts. This information includes, but is not limited to, the types of equipment used and activities the equipment will be involved in, specific descriptions of each type of material that will be placed within the waterbody(ies) and the quantity in cubic yards of each type, descriptions of specific work activities such as stream flow diversion, streambank stabilization, stream channel alteration, scour prevention, wetland removal and backfill, vegetation removal, causeway construction and other temporary impacts.

Provide plans, maps, diagrams, and engineering drawing of appropriate detail to describe the proposed construction activities and structure proposed including adequately labeled diagrams showing site conditions before and after construction activities.

For activities causing disturbance to earthen area that are expected to be less than 1 acre or otherwise will not require coverage under the General Stormwater NPDES Permit, provide a detailed description of all soil erosion and sedimentation prevention practices including vegetation or other or stabilization measures, consistent with the Illinois Urban Manual, that will be implemented during and following construction to prevent stormwater related water pollution from the construction site.

The project's activities are described in Section 4. Engineering drawings, including diagrams and maps, are included in Appendix A.

As discussed in Section 4.3.6, residual cover material will be sourced from native soil horizons or from USACE-dredged Lake Michigan sediment approved for beneficial reuse with written documentation. Urban fill will not be used as residual cover, and the borrow source will not be from an area of potential impacts. The residual cover material volume is approximately 12,300 cubic yards. After placing the residual cover, the contractor will complete a bathymetric survey to document the residual cover elevation and thickness based on the difference between the post-dredge and post-residual cover placement surveys. The bathymetric survey results are required to indicate a thickness that meets the minimum requirements of the specifications across the entire remedial footprint, and an elevation not greater than the original sediment surface, except in select areas in DMU 1 where additional residual cover material is needed to aid in stabilizing structures at the head of the slip.

As discussed in Section 4.1.1, the project requires coverage under IEPA's NPDES Permit for Stormwater Discharges from Construction Site Activities (ILR10). The project will have a SWPPP for compliance with ILR10.

5.9 Testing of Dredged or Fill Material Discharges

Title 35 Ill. Adm. Code Part 395 requires laboratory testing of the proposed dredged or fill materials for discharges into surface waters of the State if such materials do not consist entirely of uncontaminated quarry stone, sand, or broken concrete free of protruding reinforcement material. Material discharges subject to these requirements may also include incidental releases or resuspension of sediment and substrate materials due to construction activities.

Required testing for the proposed material discharge may include particle size analysis and chemical analysis in accordance with Section 395.205 or other appropriate testing protocols, and to the extent deemed necessary by the Agency to determine the potential pollutional characteristics of the materials with time, effectiveness of treatment, placement practices, or other discharge controls, structural and otherwise. Sampling of materials to be evaluated must be representative of the proposed discharge. Analytical testing for contaminants of concern must be conducted in accordance with approved analytical methods found in 40 CFR 136 and using detection concentrations sufficiently low enough to meet chemical specific Illinois water quality standards found in 35 Title 35 Ill. Adm. Code 302.

Activities such as open water disposal of dredged solids or release of sediments from dam removal must demonstrate that discharged materials are free of significant sources of contaminants or will not cause degradation of aquatic resources and violations of water quality standards where dispersal of sediments would occur. Additional modeling and studies may be required to demonstrate that such activities and their resulting sediment dispersion zones would comply with water quality requirements under 35 Ill. Adm. Code 302.102 (Allowed Mixing, Mixing Zones, and ZID). Dam removal activities shall develop site specific stream bed load rate curves and fluvial geomorphological modeling to determine sediment transport rates corresponding to dam removal activities and to demonstrate that the proposed dam removal would not cause degradation of downstream waters containing mussel beds; endangered species; fish spawning areas; areas of important aquatic life habitat; or any other natural features vital to the wellbeing of aquatic life. The Agency recommends early consultation with Bureau of Water staff to identify the appropriate sampling and testing requirements.

Generally, the specifications require that borrow source(s) for fill material shall not be from an area of potential impacts, and that the material shall be free of contamination, invasive species, debris, roots, organic material, frozen material, and recycled material.

Fill used as a residual cover material will be tested for physical and chemical parameters prior to use as fill in the North Slip. The fill must be clean, medium- to coarse-grained sand, conforming to the particle size distribution requirements or engineer-approved alternate listed in Table 1.

Table 1 Particle size distribution requirements for residual cover material

Sieve Size	Percent Passing
3/8”	100
#4	95-100
#10	70-100
#40	10-95
#200	0-7

Fill must be analyzed for parameters of concern in the North Slip and results shall be less than the values listed in the Ecological Screening Value (ESV) Table, sourced from Tables 2a and 2b of USEPA’s Region 4 Ecological Risk Assessment Supplemental Guidance document (United States Environmental Protection Agency, 2018). Fill material will be tested prior to being imported to the North Slip and additional samples will be collected for every 1,000 cubic yards imported.

6 Monitoring, Operation, and Maintenance

Once construction is completed, no operation or maintenance is anticipated. Impacted materials will have been removed from the North Slip, and a residual cover will have been placed to provide a buffer between dredge residuals and the bioactive zone. Monitoring and maintenance are not necessary for the residual cover. Pre-design investigations indicate that sediment is expected to continue to deposit inside the slip, and it is expected that sediment from Calumet Harbor and DuSable Lakeshore Drive will continue to deposit on top of the residual cover.

7 References

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Figures

North Vessel Slip

N

0 2,000 4,000

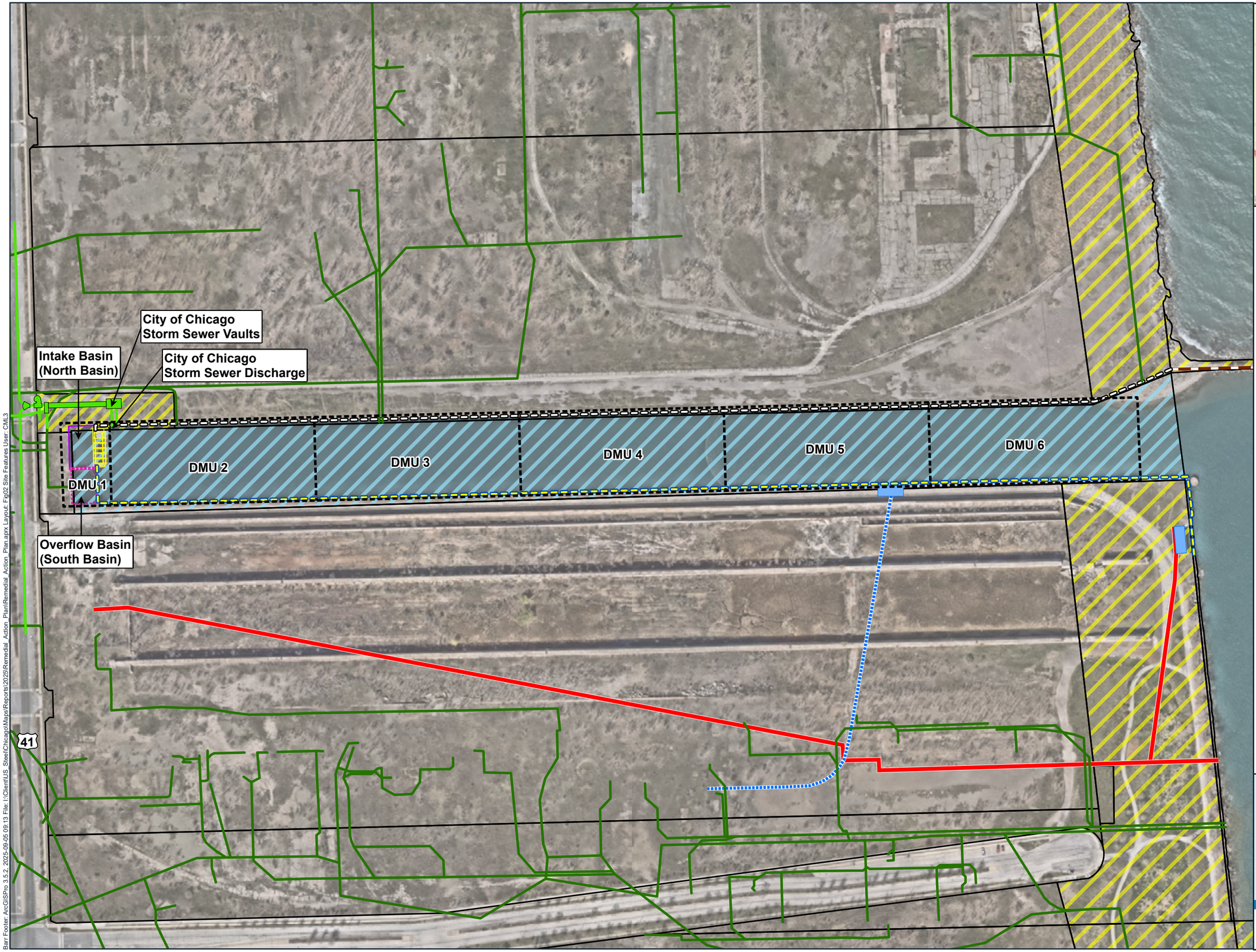
Feet

Basemap: World Street Map (Esri)

Site Location
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, Illinois

FIGURE 1

BARR



Dredge Management Unit

Slip Structures

- Breakwater, Rock/Concrete
- Intake Structure, Concrete
- Intake Structure, Timber with Concrete Cap
- Oil Skimmer, Steel Sheet Pile
- North Wall, Steel Sheet Pile
- South Wall, Steel Sheet Pile

Sewer System

- 72" Tunnel
- Inactive Intake Tunnel
- Sewer - U.S. Steel (Abandoned)
- Storm Sewer - City of Chicago (Active)
- Storm Sewer Structure - City of Chicago
- Inactive Water Intake

Parcel Ownership

- Related Midwest
- City of Chicago
- State of Illinois

Parcel Source: Cook County GIS, Parcels 2024, available at: https://hub-cookcountyil.opendata.arcgis.com/datasets/cookcountyil::parcels-historical-2024/about

N

0 240 480

Feet

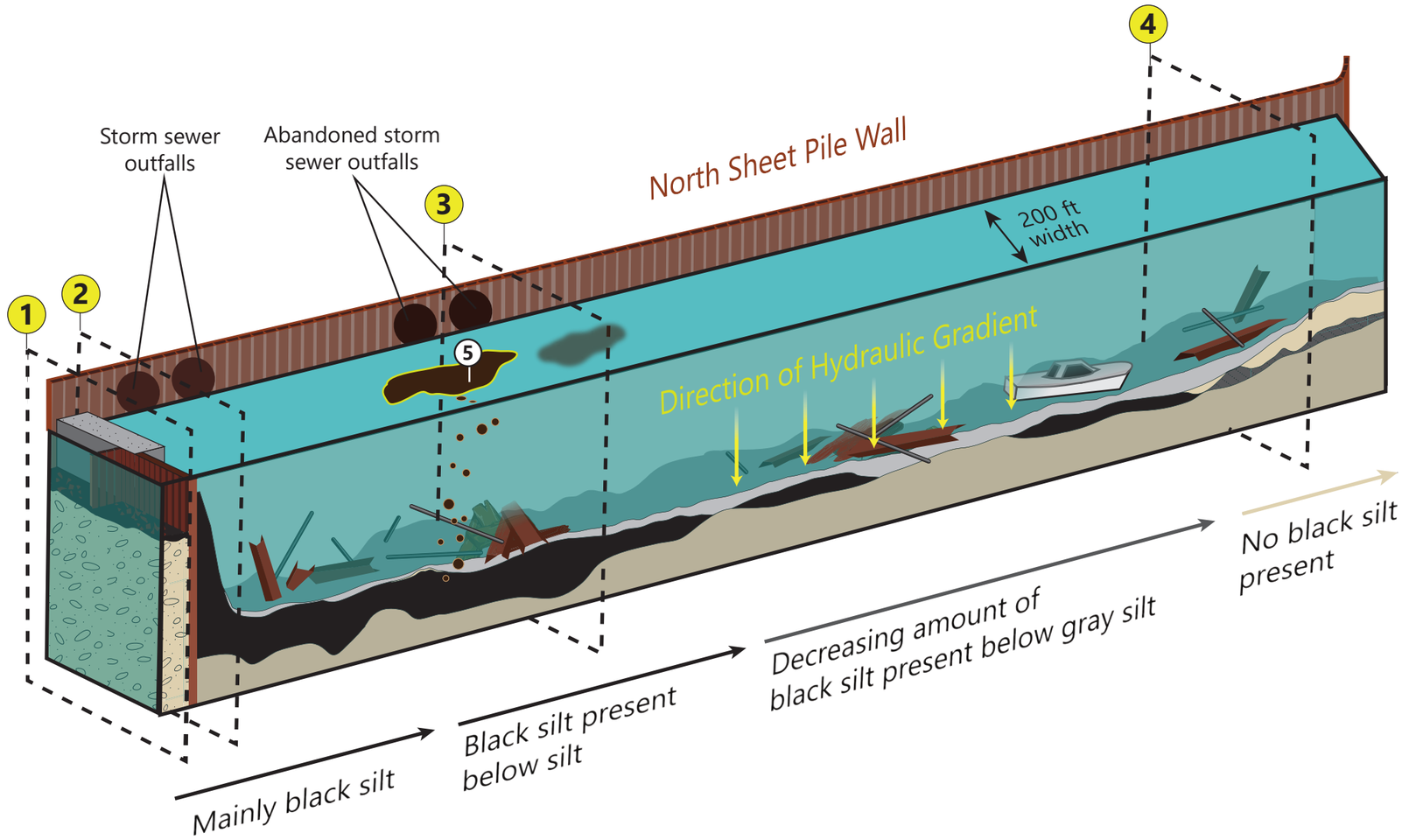
Imagery: Nearmap 4/16/2025

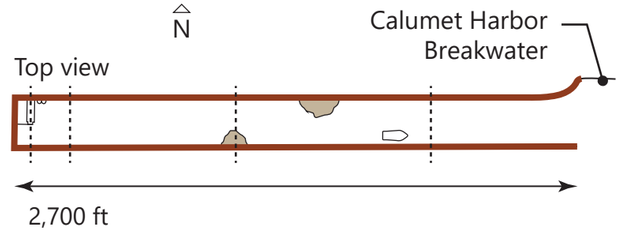
Site Features
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, Illinois

FIGURE 2

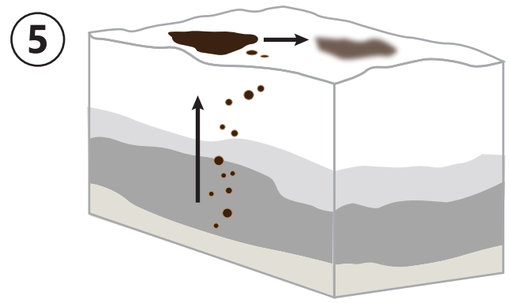
BARR

Barr Footer: ArcGISPro 3.5.2, 2025-09-05 09:13 File: I:\Client\US_Steel\Chicago\Maps\Reports\2025\Remedial_Action_Plan\Remedial_Action_Plan.aprx Layout: Fig02 Site Features User: CML3



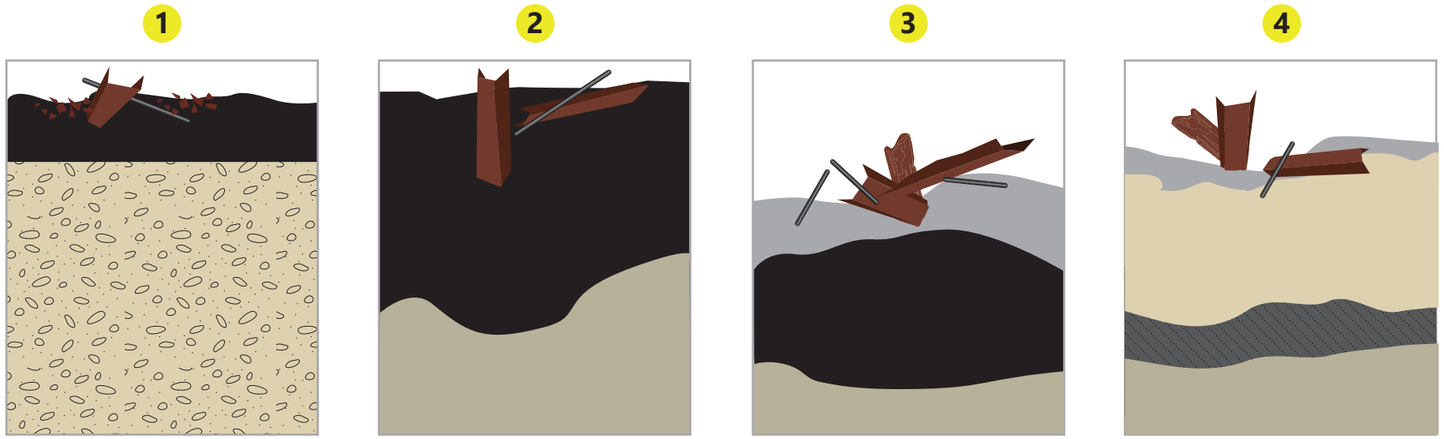


Ebullition Facilitated Transport of Non-Aqueous Phase liquid



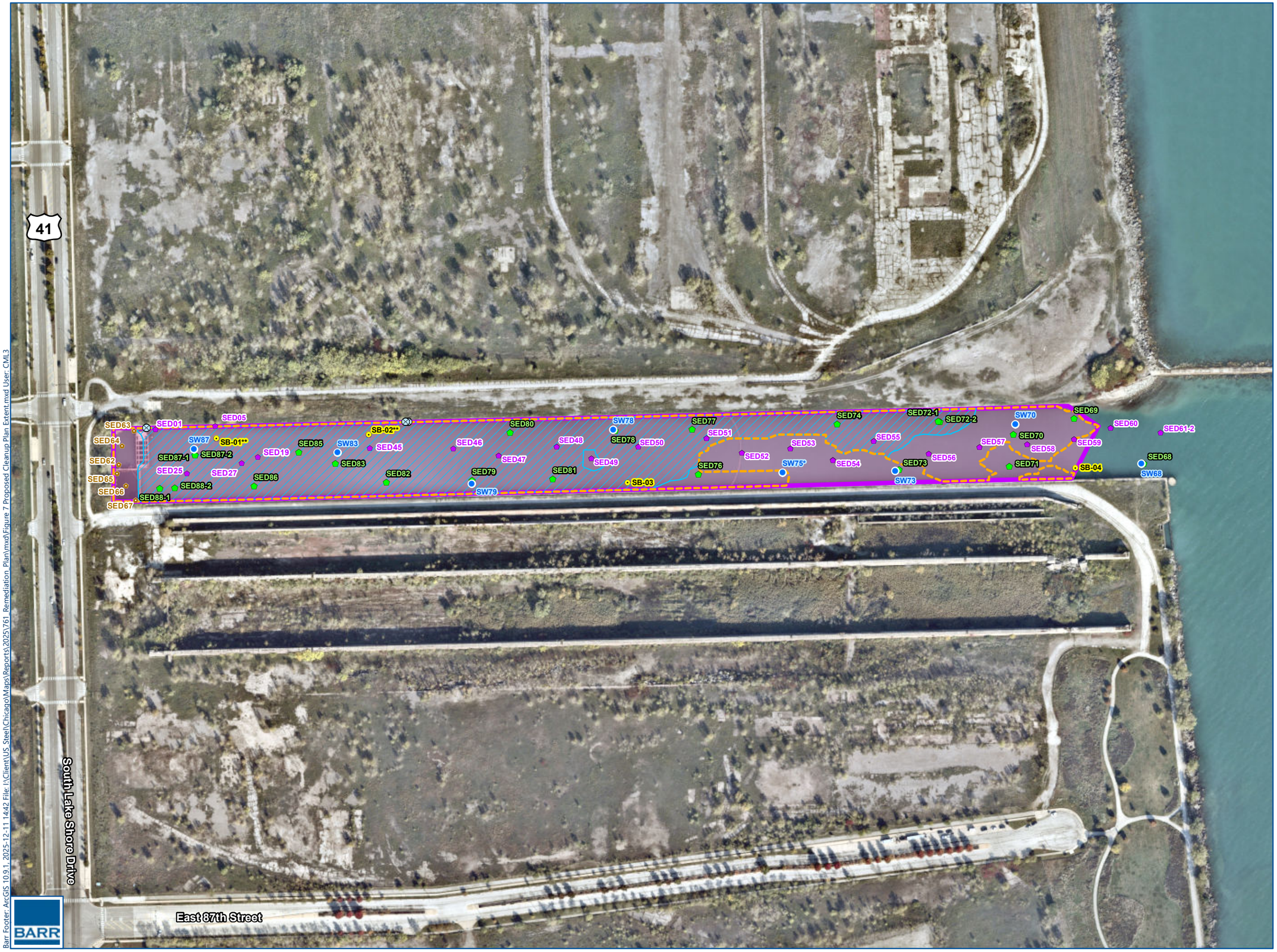
LEGEND

- Impacted sediment
- Gray silt
- Black sand
- Sand
- Lean clay (till)
- Hard bottom (material and depth unknown)



BARR

Figure 3
CONCEPTUAL MODEL
OF NORTH VESSEL SLIP
U.S. Steel
Chicago, IL



- Outfall Location
- 2020 and 2023 Surface Water Location
- 2020 Vibracore Location
- 2017 Vibracore Location
- 2017 Pushcore Location
- 2017 Soil Boring Location
- Proposed Dredge and Residual Cover Extent***

Risk-Based Exceedances Extent

- IEPA Approved Exceedances Extent****
- PCB and Mercury Exceedances Extent*****

**GPS coordinates were not collected for vibracore location SED75 but core was collected adjacent to SW75.*

***At locations SB-01 and SB-02, two Vibrating Wire Piezometers were installed at each location.*

****Dredging will occur down to till within the Proposed Dredge and Residual Cover extent and tie into the existing sediment surface at the eastern end of the extent.*

*****Tier 3 sediment remediation objectives have been approved by the IEPA for the following compounds: total petroleum hydrocarbons, arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc, total polycyclic aromatic hydrocarbons, antimony, barium, selenium, and silver.*

******The PCB and Mercury Exceedances Extent includes the lateral extent of surficial sediment exceeding the risk-based remediation goal for total PCBs, the lateral extent of sediment exceeding the risk-based remediation goal for total PCBs at all depths, and sediment concentrations above 0.15 mg/kg for mercury.*

N

0 125 250 375

Feet

Nearmap High Resolution October 7, 2020

PROPOSED CLEANUP PLAN EXTENT

Former South Works Site
North Vessel Slip
U. S. Steel
Chicago, IL

Figure 4

Material Processing Area

Conceptual Layout

- Building/Structure
- Loading/Unloading Area
- Traffic Pathway

N

0 100 200

Feet

Imagery: Nearmap 4/16/2025

Example Material Processing Layout
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, Illinois

FIGURE 5

BARR

Barr Footer: ArcGISPro 3.5.2, 2025-09-10 09:34, File: I:\Client\US_Steel\Chicago\Maps\Reports\2025\Remedial_Action_Plan\Remedial_Action_Plan.aprx Layout: Fig06 Material Processing Layout User: CML3

Proposed Sediment Resuspension Controls

- Active Work Zone
- Primary sediment and sheen control
- Redundant sediment and sheen control
- Work area barrier
- Turbidity measurement location

0 80 160

Feet

Imagery: Nearmap 4/16/2025

Sediment Resuspension Controls
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, Illinois

FIGURE 6

BARR

Appendices

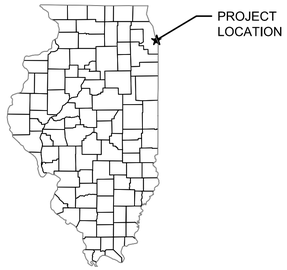
Appendix A

Selected Design Drawings

NORTH VESSEL SLIP SEDIMENT REMEDIATION

U. S. STEEL / FORMER SOUTH WORKS PLANT

CHICAGO, ILLINOIS



LOCATION MAP
NOT TO SCALE

ABBREVIATIONS AND SYMBOLS

APPROX	APPROXIMATE
CCD	CITY OF CHICAGO DATUM
CONC	CONCRETE
DIP	DUCTILE IRON PIPE
EL	ELEVATION
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
MAX	MAXIMUM
MIN	MINIMUM
NAVD	NORTH AMERICAN VERTICAL DATUM
NO.	NUMBER
OC	ON CENTER
ROW	RIGHT-OF-WAY
TBD	TO BE DETERMINED
TYP	TYPICAL
@	AT
Ø	DIAMETER

VICINITY MAP
NOT TO SCALE

SHEET INDEX

SHEET	TITLE
G-01	COVER SHEET
C-01	EXISTING CONDITIONS
C-02	INVESTIGATION LOCATIONS
C-03	EXISTING CONDITIONS - HEAD OF SLIP - STRUCTURAL PLAN AND ELEVATIONS
C-04	EXISTING CONDITIONS - HEAD OF SLIP - STRUCTURAL SECTIONS
C-05	TRAFFIC MANAGEMENT PLAN
C-06	DEBRIS SURVEY RESULTS
C-07	SWPPP CONTROL PLAN
C-08	SWPPP DETAILS
C-09	STRUCTURAL MONITORING LOCATIONS
C-10	DEMOLITION PLAN
C-11	WALER AND TIEBACK PLAN
C-12	WALER AND TIEBACK SECTIONS
C-13	WALER AND TIEBACK DETAILS
C-14	CORNER BRACE DETAILS
C-15	GUARDRAIL PLAN AND DETAILS
C-16	SHEET PILE REPAIR PLAN
C-17	SHEET PILE REPAIR DETAILS
C-18	DREDGE PLAN
C-19	RESIDUAL COVER PLAN
C-20	DREDGE PRISM (DMU 1) - STA. 0+00 TO 1+00
C-21	DREDGE PRISM (DMU 2) - STA. 1+00 TO 6+00
C-22	DREDGE PRISM (DMU 3) - STA. 6+00 TO 11+00
C-23	DREDGE PRISM (DMU 4) - STA. 11+00 TO 16+00
C-24	DREDGE PRISM (DMU 5) - STA. 16+00 TO 21+00
C-25	DREDGE PRISM (DMU 6) - STA. 21+00 TO 26+00
C-26	DREDGE PRISM CROSS SECTIONS - STA. 1+00 THRU 17+00
C-27	DREDGE PRISM CROSS SECTIONS - STA. 18+00 THRU 26+00
C-28	EXAMPLE MATERIAL PROCESSING AREA LAYOUT
C-29	DEWATERING AND MATERIAL PROCESSING AREA SECTIONS AND DETAILS
C-30	CONCEPTUAL WATER TREATMENT SYSTEM PROCESS FLOW DIAGRAM
C-31	RESTORATION PLAN

REFERENCE NOTES:

1. TOPOGRAPHY:
   A. COOK COUNTY DIGITAL ELEVATION MODEL (2022), COOK COUNTY GIS DEPARTMENT, COOK COUNTY, ILLINOIS. DEM2022, DOWNLOADED FROM HTTPS://WWW.ARCGIS.COM/HOME/ITEM.HTML?ID=5FF0BF2707854717A3FE7A57F368AB4C, DOWNLOADED ON 1/23/2025.

2. BATHYMETRY:
   A. NORTH VESSEL SLIP OPEN WATERS BATHYMETRY COLLECTED BY BARR ENGINEERING ON 10/5/2017 USING SINGLE-BEAM ODOM BATHYMETRIC SYSTEM.
   B. BATHYMETRY WITHIN THE NORTH VESSEL SLIP WESTERN STRUCTURES APPROXIMATED USING WATER DEPTH MEASUREMENTS COLLECTED BY DIVERS ON 10/11/2017.

3. AERIAL IMAGERY:
   A. COOK COUNTY AERIAL IMAGERY 2024, COOK COUNTY GIS DEPARTMENT, COOK COUNTY, ILLINOIS. COOKORTHO2024, DOWNLOADED FROM HTTPS://WWW.ARCGIS.COM/HOME/ITEM.HTML?ID=DEE2882DB0014DD9A9DD98313FD34340, DOWNLOADED ON 1/23/2025.

4. UTILITY INFORMATION:
   A. DRAINAGE AND UTILITY U. S. ROUTE 41, DRAWINGS C84 AND C85, (AVENUE O) U. S. ROUTE 41 RELOCATION, HARBOR AVENUE TO 79TH STREET, CHICAGO DEPARTMENT OF TRANSPORTATION, DIVISION OF ENGINEERING, 5/12/2011.
   B. DRAINAGE AND UTILITY 85TH STREET, DRAWING C104, (AVENUE O) U. S. ROUTE 41 RELOCATION, HARBOR AVENUE TO 79TH STREET, CHICAGO DEPARTMENT OF TRANSPORTATION, DIVISION OF ENGINEERING, 5/12/2011.
   C. U. S. ROUTE #41 HARBOR AVENUE TO 79TH STREET TREATMENT STRUCTURE, DRAWING CDS 1, CDS TECHNOLOGIES INC., 7/21/2006.
   D. SOUTH WORKS, PLANT SEWERS, GEN. PLAN OF NORTH EAST AREA, DRAWING 35407, UNITED STATES STEEL CORPORATION, SOUTH WORKS.
   E. SOUTH WORKS, PLANT SEWERS, GEN. PLAN OF SOUTH EAST AREA, DRAWING 35406, UNITED STATES STEEL CORPORATION, SOUTH WORKS.
   F. SOUTH WORKS, PLANT SEWERS, GEN. PLAN OF SOUTH WEST AREA, DRAWING 35405, UNITED STATES STEEL CORPORATION, SOUTH WORKS.

5. DATUMS:
   HORIZONTAL DATUM: NAD83 ILLINOIS STATE PLANE EAST, US FEET
   VERTICAL DATUM: NAVD88
   VERTICAL DATUM CONVERSION: IGLD55 + 0.88' = IGLD85 + 0.54' = NAVD88
   CCD + 579.19' = NAVD88

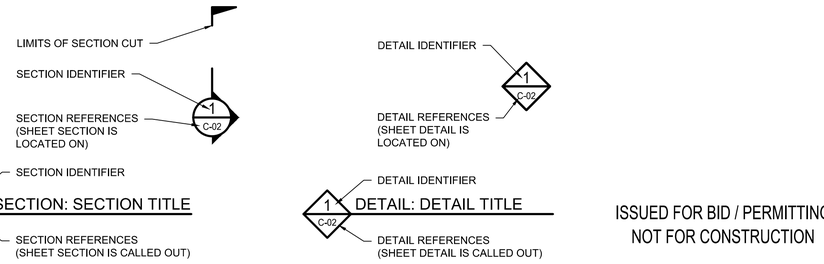
NOTES:

1. COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES, PERMITS, AND REGULATIONS.

2. VERIFY ALL QUANTITIES, GRADES, AND DIMENSIONS.

3. FIELD-LOCATE ALL SITE UTILITIES (PRIVATE AND PUBLIC) PRIOR TO STARTING THE WORK. ALL UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. ANY UTILITIES DAMAGED BY CONTRACTOR SHALL BE REPAIRED TO THE SATISFACTION OF UTILITY OWNER AT CONTRACTOR'S COST. CHICAGO OFFICE OF UNDERGROUND COORDINATION NEEDS TO BE CONTACTED FOR DESIGN LOCATES.

REFERENCING



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

ISSUED FOR BID / PERMITTING
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
A	MJJ	KPW	MJE	04/29/2026	ISSUED FOR BID / PERMITTING

BARR
BARR ENGINEERING CO.
325 SOUTH LAKE AVENUE
SUITE 700
DULUTH, MN 55802
PH: 1-800-786-5830
WWW.BARR.COM
MINNESOTA ENGINEERING FIRM
NUMBER 10104111545

U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

COVER SHEET

BARR PROJECT # 1316101105
DWG # G-01
REV # A

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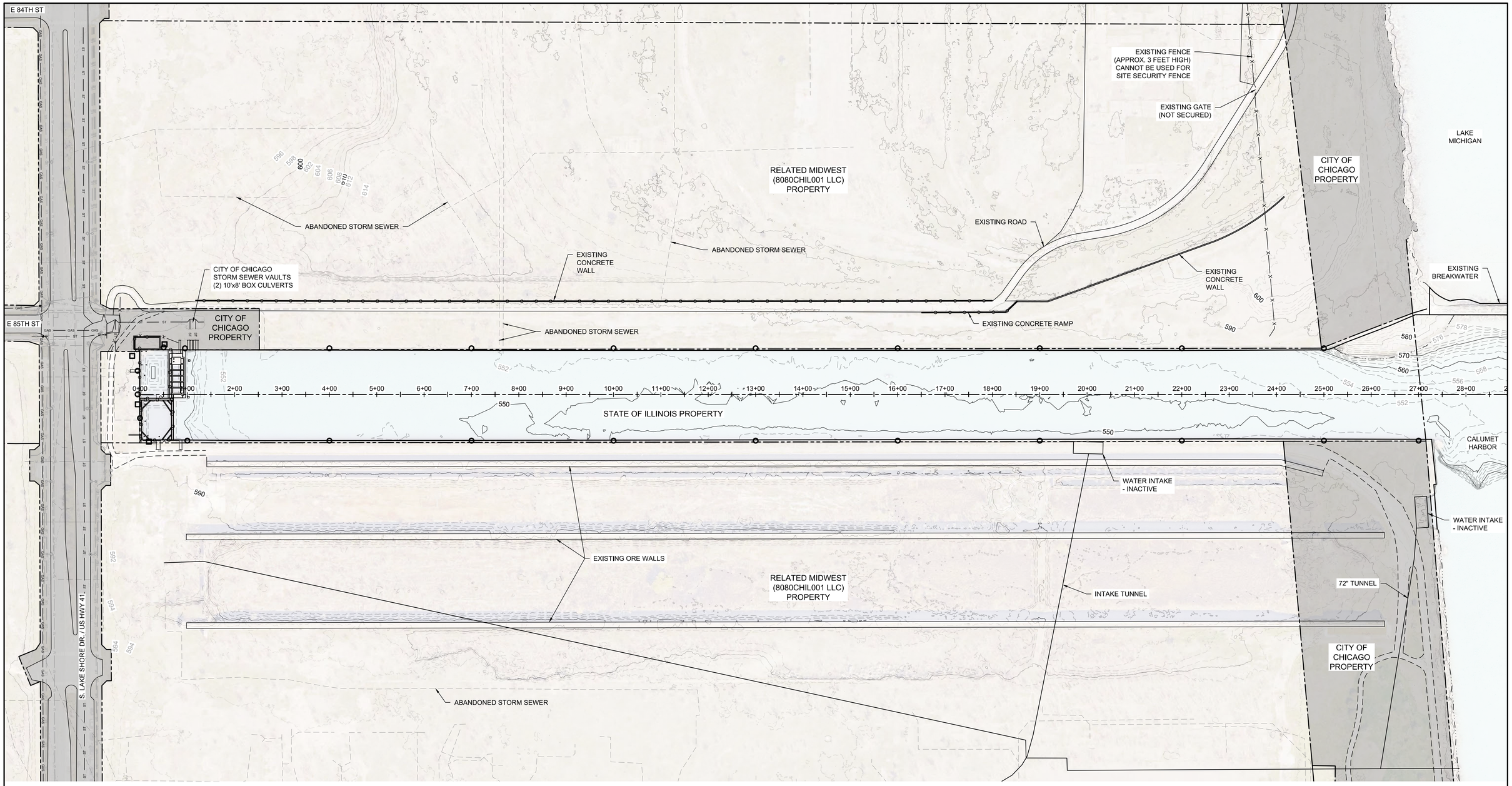

TABLE 1: WATER SURFACE ELEVATION	
PERCENTILE	WATER SURFACE (FT, NAVD88)
90	577.96
50	580.09
10	581.92

PERCENTILES ARE PRESENTED AS PERCENT OF THE TIME THAT WATER LEVELS EXCEED THE REPORTED VALUE (i.e. WATER LEVELS EXCEED 581.92 FEET 10% OF THE TIME) USING DATA FROM JANUARY 1, 2010 TO FEBRUARY 1, 2025.

LEGEND

- EXISTING MAJOR 10' CONTOUR
- EXISTING MINOR 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING ABANDONED STORM SEWER
- EXISTING STORM SEWER
- EXISTING WATER INTAKE TUNNEL
- EXISTING FENCE
- EXISTING EDGE OF ROAD
- EXISTING EDGE OF TRAIL
- TYPICAL SHORE LINE
- EXISTING GUARDRAIL
- MONITORING - TILT METER
- MONITORING - INCLINOMETER

1 PLAN: EXISTING SITE

0 100 200

SCALE IN FEET

NOTES:

1. THE LOCATION OF ALL UTILITIES ARE APPROXIMATE AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. EXISTING UTILITY SIZE, LOCATION, AND MATERIAL IS BASED ON OWNER SUPPLIED DRAWINGS AND SURVEY DATA. FIELD LOCATE ALL SITE UTILITIES PRIOR TO STARTING WORK, INCLUDING SIZE AND MATERIALS. PROTECT ALL UTILITIES UNLESS OTHERWISE SHOWN ON THE DRAWINGS. ANY UTILITIES DAMAGED BY CONTRACTOR SHALL BE REPAIRED TO THE SATISFACTION OF UTILITY OWNER AT CONTRACTOR'S EXPENSE.
2. CONTRACTOR SHALL REMOVE ANY VEGETATION AND FENCES DEEMED NECESSARY FOR SITE ACCESS AND CONSTRUCTION ACTIVITIES.
3. INCLINOMETERS AND TILT METERS IN THE HEAD OF THE SLIP WILL BE INSTALLED IN SPRING 2026. OTHER TILT METERS WERE INSTALLED IN SEPTEMBER 2025. CONTRACTOR IS RESPONSIBLE FOR PROTECTING STRUCTURAL MONITORING DEVICES DURING CONSTRUCTION.

ISSUED FOR BID / PERMITTING
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
A	MJJ	KPW	MJE	04/29/2026	ISSUED FOR BID / PERMITTING

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

PH: 1-800-632-2277
WWW.BARR.COM
MINNESOTA ENGINEERING FIRM
NUMBER 10104111545

U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

EXISTING CONDITIONS

BARR PROJECT # 1316101105
DWG # C-01
REV # A

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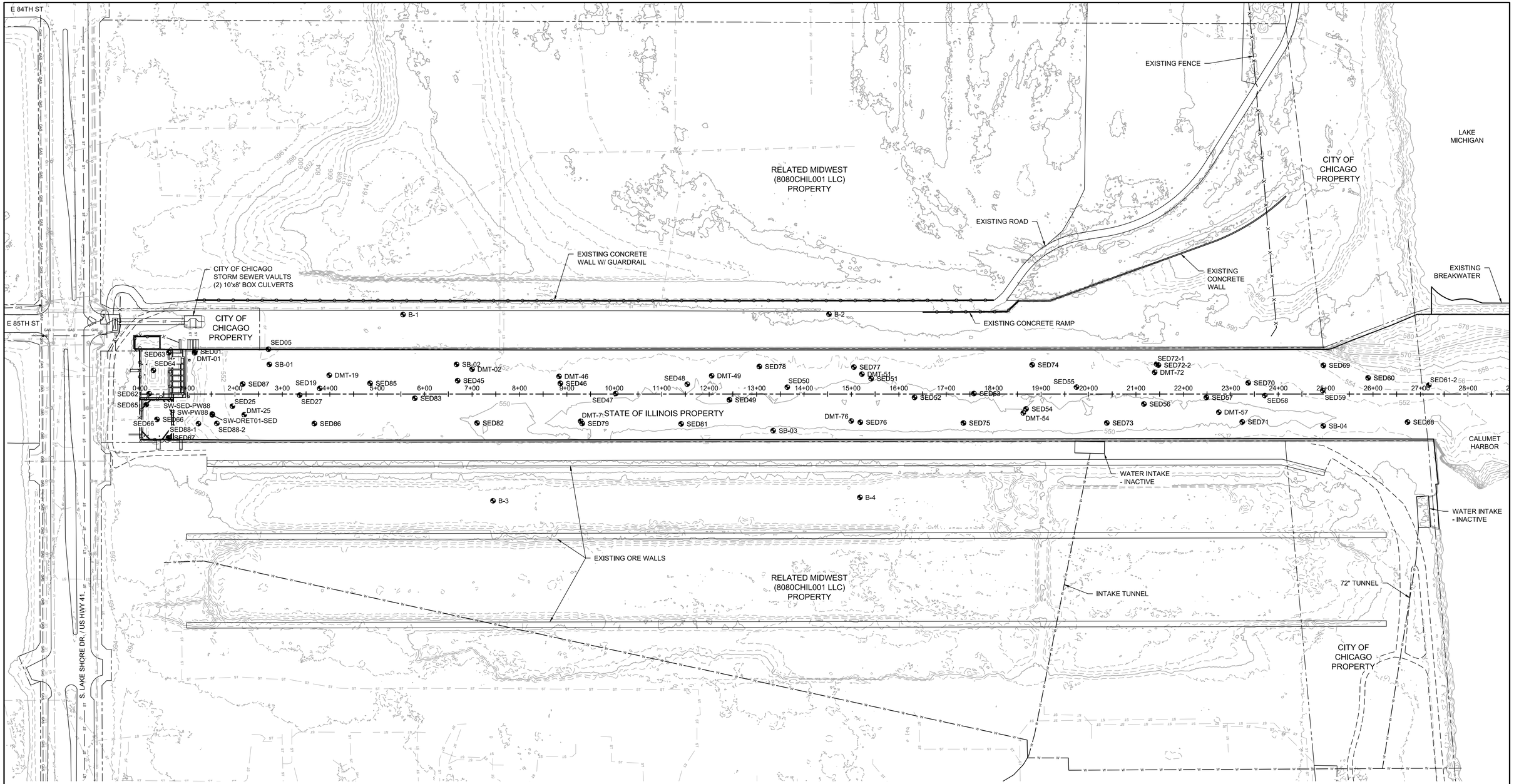

LEGEND

- EXISTING MAJOR 10' CONTOUR
- EXISTING MINOR 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING ABANDONED STORM SEWER
- EXISTING STORM SEWER
- EXISTING WATER INTAKE TUNNEL
- EXISTING GAS LINE
- EXISTING FENCE
- EXISTING GUARDRAIL
- EXISTING EDGE OF ROAD
- EXISTING EDGE OF TRAIL
- TYPICAL SHORE LINE
- INVESTIGATION LOCATION

1 - PLAN: INVESTIGATION LOCATIONS

0 100 200
SCALE IN FEET

NOTES:

1. THE LOCATION OF ALL UTILITIES ARE APPROXIMATE AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. EXISTING UTILITY SIZE, LOCATION, AND MATERIAL IS BASED ON OWNER SUPPLIED DRAWINGS AND SURVEY DATA. FIELD LOCATE ALL SITE UTILITIES PRIOR TO STARTING WORK, INCLUDING SIZE AND MATERIALS. PROTECT ALL UTILITIES UNLESS OTHERWISE SHOWN ON THE DRAWINGS. ANY UTILITIES DAMAGED BY CONTRACTOR SHALL BE REPAIRED TO THE SATISFACTION OF UTILITY OWNER AT CONTRACTOR'S EXPENSE.

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SUITE 200
MINNEAPOLIS, MN 55435

PH: 1-800-632-2277
WWW.BARR.COM
MINNESOTA ENGINEERING FIRM
NUMBER 10104111545

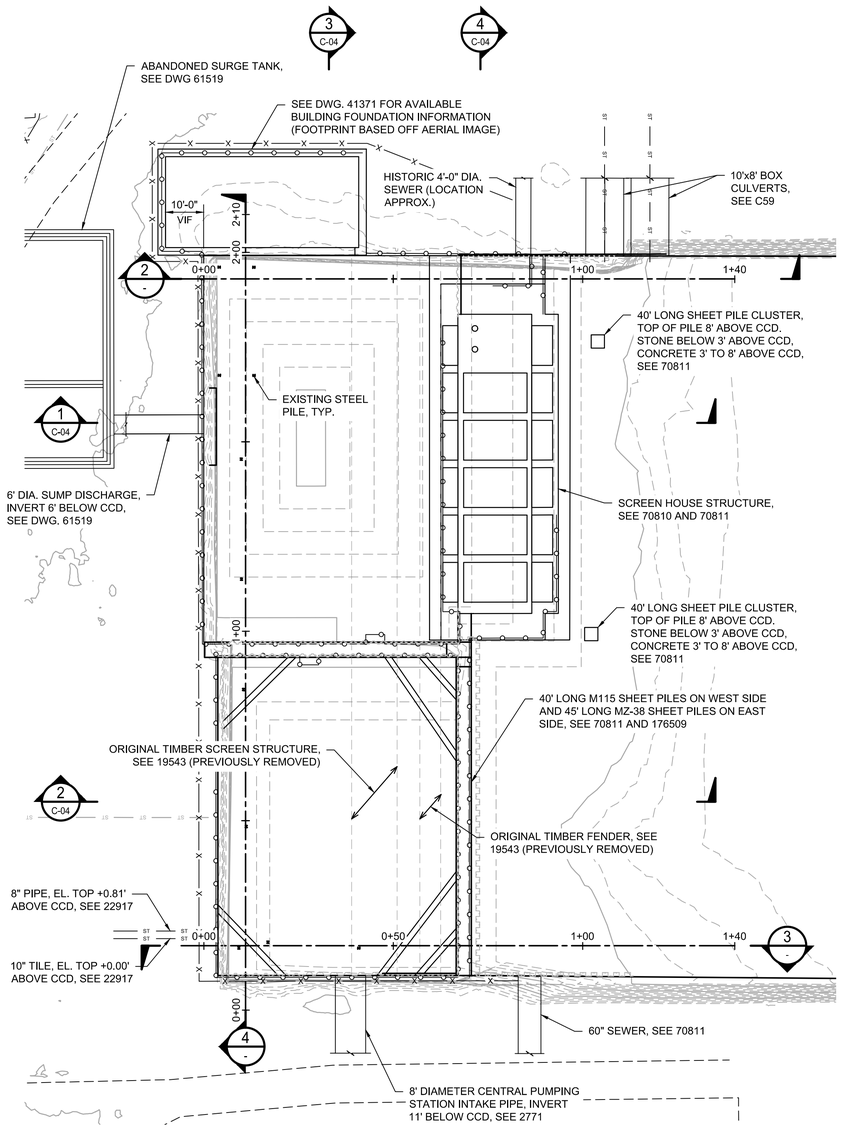
U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

INVESTIGATION LOCATIONS

BARR PROJECT # 1316101105
DWG # C-02
REV # A

ORIGINAL DRAWING SIZE: ANSI FULL BLEED D (34.00" X 22.00 INCHES) PLOT SCALE: 1:1 PLOT DATE: 4/29/2026 7:49 PM
CADD USER: MAX J. JOUPPE FILE: M:\DESIGN\1316101\1051316101105_C-02.DWG



1 - PLAN: EXISTING CONDITIONS - HEAD OF SLIP

0 20 40

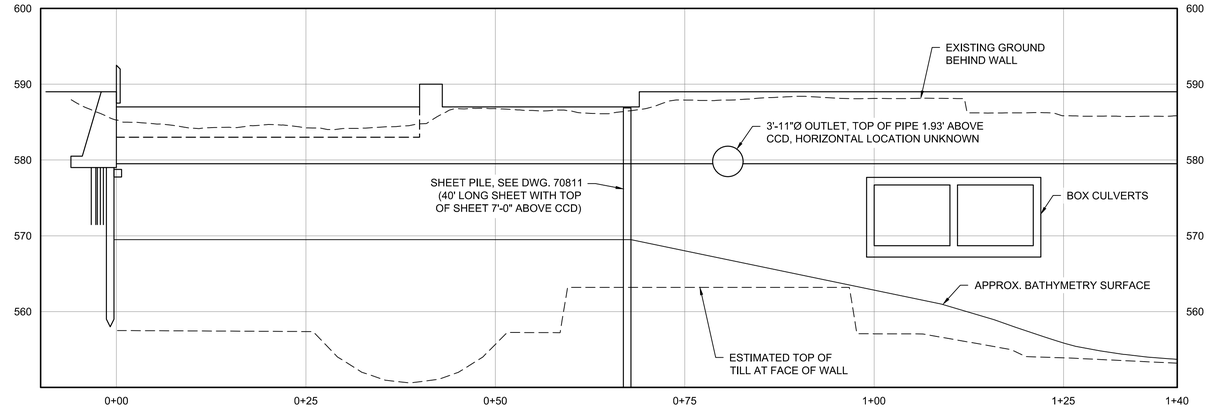
SCALE IN FEET

LEGEND

- EXISTING 10' MAJOR CONTOUR
- EXISTING 2' MINOR CONTOUR
- EXISTING SHEET PILE
- EXISTING GUARDRAIL
- EXISTING FENCE
- EXISTING STORM SEWER

GENERAL NOTES:

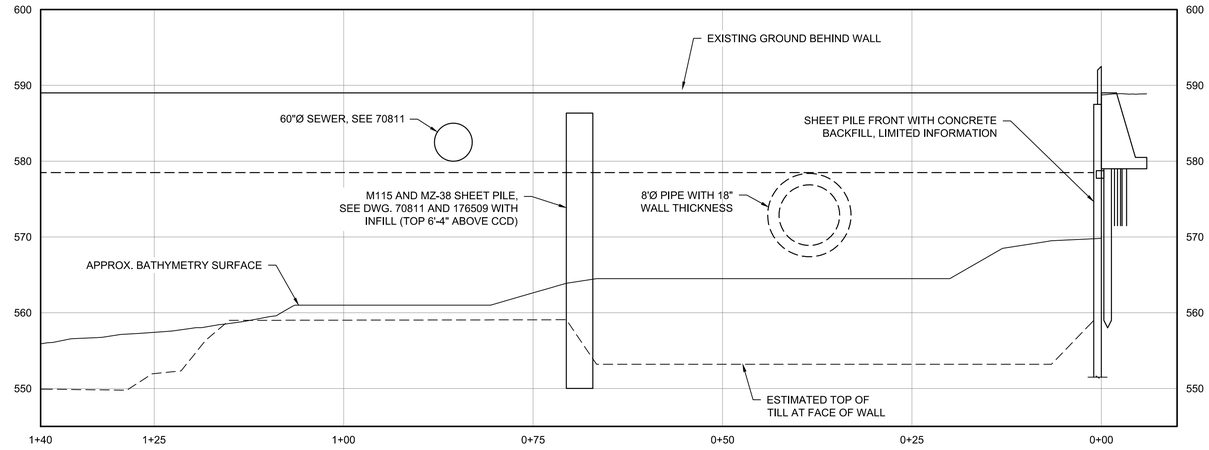
1. CONTOURS FROM WITHIN THE INTAKE AND SURGE BASINS ARE FROM TOP OF SEDIMENT ELEVATIONS MEASURED AT SIX SEDIMENT CORE LOCATIONS (THREE WITHIN EACH BASIN) DURING NOVEMBER 2019 INVESTIGATION.
2. A TABULATION OF HISTORICAL DRAWINGS REFERENCED FOR THE HEAD OF SLIP EXISTING CONDITIONS IS INCLUDED IN C-04.
3. SEE DRAWING C-04 FOR ADDITIONAL INFORMATION ON THE ABOVE REFERENCED DRAWINGS.



2 - ELEVATION: NORTH WALL

0 10 20

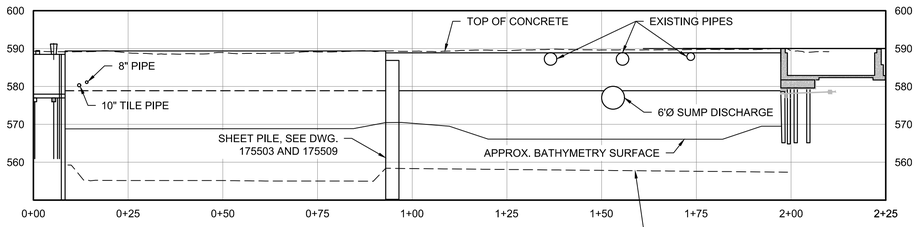
SCALE IN FEET



3 - ELEVATION: SOUTH WALL

0 10 20

SCALE IN FEET



4 - ELEVATION: WEST WALL

0 20 40

SCALE IN FEET

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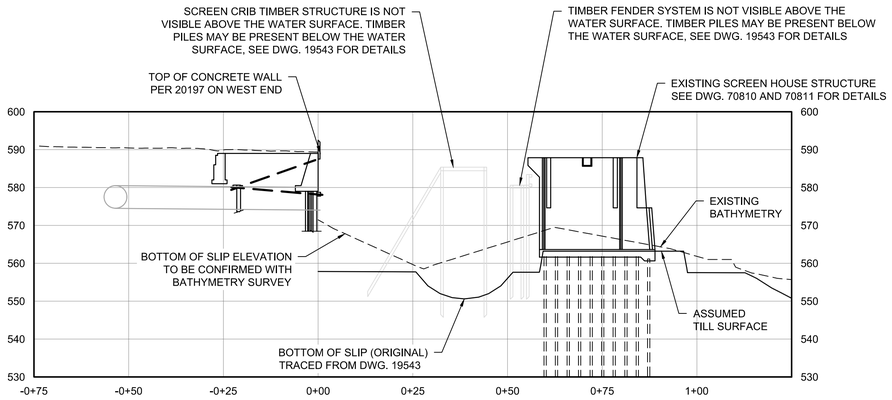
U. S. STEEL
CHICAGO, ILLINOIS

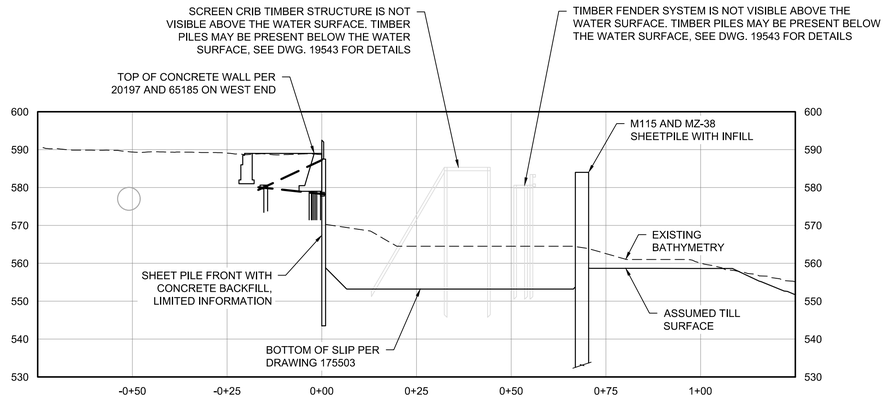
NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT
EXISTING CONDITIONS - HEAD OF SLIP
STRUCTURAL PLAN AND ELEVATIONS

BARR PROJECT # 1316101105
DWG # C-03
REV # A



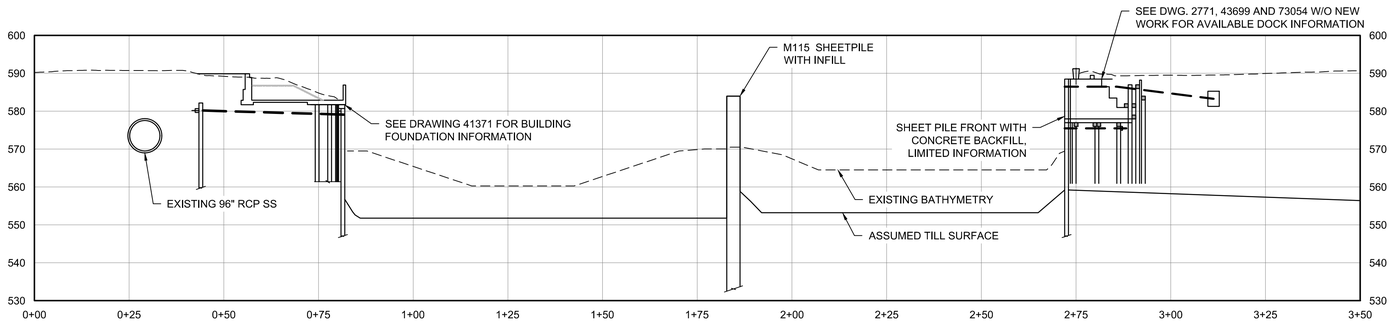
1 C-03 SECTION: HEAD OF SLIP - NORTH SIDE

0 20 40
SCALE IN FEET



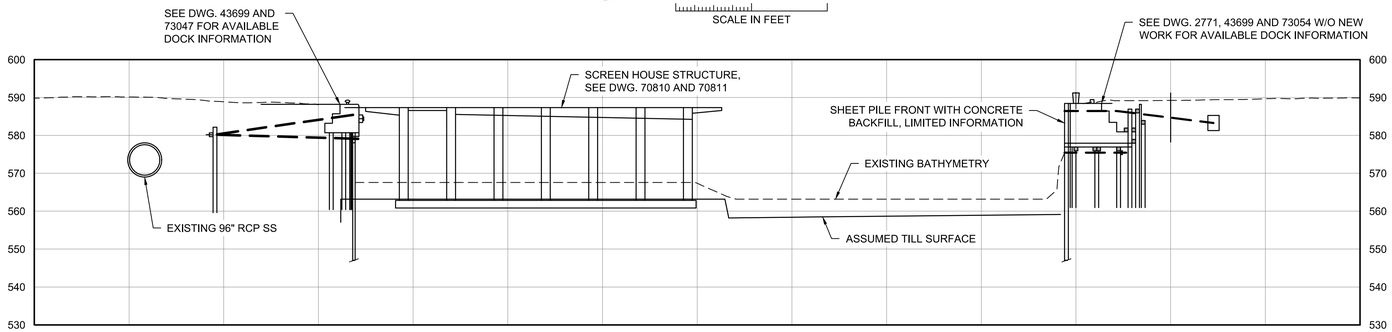
2 C-03 SECTION: HEAD OF SLIP - SOUTH SIDE

0 20 40
SCALE IN FEET



3 C-03 SECTION: HEAD OF SLIP - STA. 0+33

0 20 40
SCALE IN FEET



4 C-03 SECTION: HEAD OF SLIP - STRUCTURE

0 20 40
SCALE IN FEET

U. S. STEEL PLANT DRAWING REFERENCE LIST

DWG. NO.	DWG. NAME	YEAR
2771	CENTRAL PUMPING STATION - GENERAL PLAN OF INTAKE FOR PUMPING ENGINES	1900
19543	NORTH SLIP - REPAIRS TO SCREEN CRIB & FENDERS	1913
20197	NORTH SLIP - RETAINING WALL AT WEST END	1915
22917	NO NAME - PLANT SITE PIPING PLAN	N/A
41371	CENTRIFUGAL PUMPING STA. - SWITCHING APPARATUS ROOM - ERECTION DIAGRAM & FOUND. PLAN	1933
43699	BLAST FURNACES 5-10 - NORTH SLIP & ORE TROUGH HISTORICAL DATA	1941
61519	SOUTH WORKS - DIVERSION SEWER - SUMP	1946
70810	CENTRAL PUMPING STATION - WATER INTAKE & SCREEN HOUSE - FOUNDATION	1941
70811	CENTRAL PUMPING STATION - WATER INTAKE & SCREEN HOUSE - LOCATION PLAN & FOUNDATION STEEL DETAILS	1941
73047	NORTH VESSEL DOCK - NORTH DOCK - WEST SECTION - ALTERATIONS - PLAN & SECTIONS	1946
73054	NORTH VESSEL DOCK - SOUTH DOCK - WEST SECTION - ALTERATIONS - PLAN & SECTIONS	1946
175503	NORTH VESSEL SLIP SURGE BASIN - SHEET PILING PLAN - SOUTH WORKS	1981
175509	NORTH VESSEL SLIP SURGE BASIN - SLUICE GATES PLAN & SECTIONS - SOUTH WORKS	1976
176509	NORTH VESSEL SLIP SURGE BASIN - SHEET PILING PLAN - EAST WALL - SOUTH WORKS	1976
A75-054	NORTH SLIP APPROVED DREDGE SOUNDINGS	1975
C59	PLAN AND PROFILE 85TH STREET	2007
C100	DRAINAGE AND UTILITY 85TH STREET	2008

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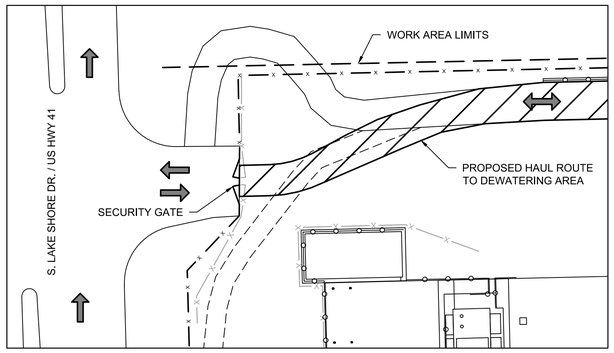
U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT
EXISTING CONDITIONS - HEAD OF SLIP
STRUCTURAL SECTIONS

BARR PROJECT # 1316101105
DWG # C-04
REV # A



LEGEND

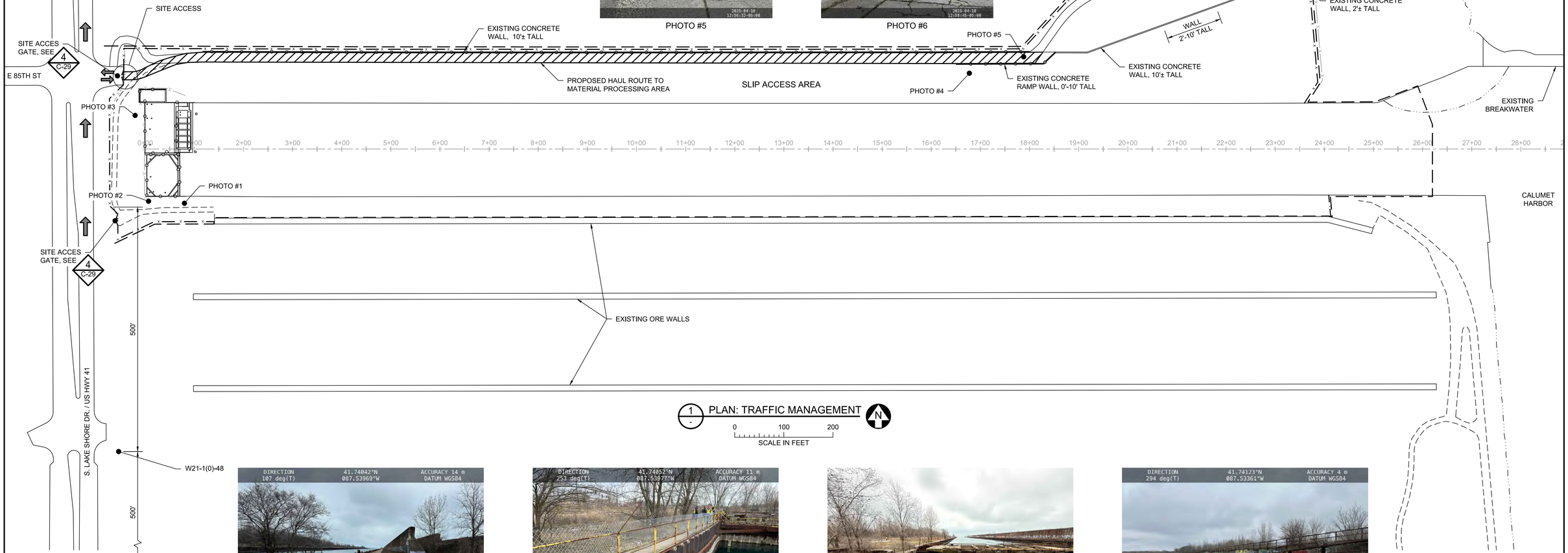
- EXISTING STORM SEWER
- EXISTING FENCE
- EXISTING EDGE OF TRAIL
- TYPICAL SHORE LINE
- SECURITY FENCE
- WORK AREA LIMITS
- TRAFFIC FLOW ARROW

NOTES:

1. ALL TEMPORARY TRAFFIC AND PEDESTRIAN CONTROLS SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR SHALL SUPPLY TRAFFIC CONTROL IN COMPLIANCE WITH CITY OF CHICAGO STANDARDS: ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, STANDARD 701101-05 OFF-RD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE.
3. CONTRACTOR SHALL DEVELOP AND MAINTAIN EQUIPMENT OFFSETS THAT MAINTAIN STABILITY OF THE NORTH VESSEL SLIP STRUCTURES. BASED ON FEASIBILITY-LEVEL TECHNICALNESS EVALUATION (SEE BARR'S 2022 GEOTECHNICAL EVALUATION REPORT - FEASIBILITY LEVEL), A 5-FOOT MINIMUM OFFSET FROM THE SHEET PILE WALLS IS RECOMMENDED.

PHOTO #5

PHOTO #6



1 - PLAN: TRAFFIC MANAGEMENT

0 100 200

SCALE IN FEET

PHOTO #1

PHOTO #2

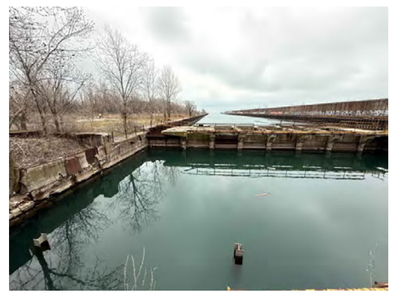


PHOTO #3

PHOTO #4

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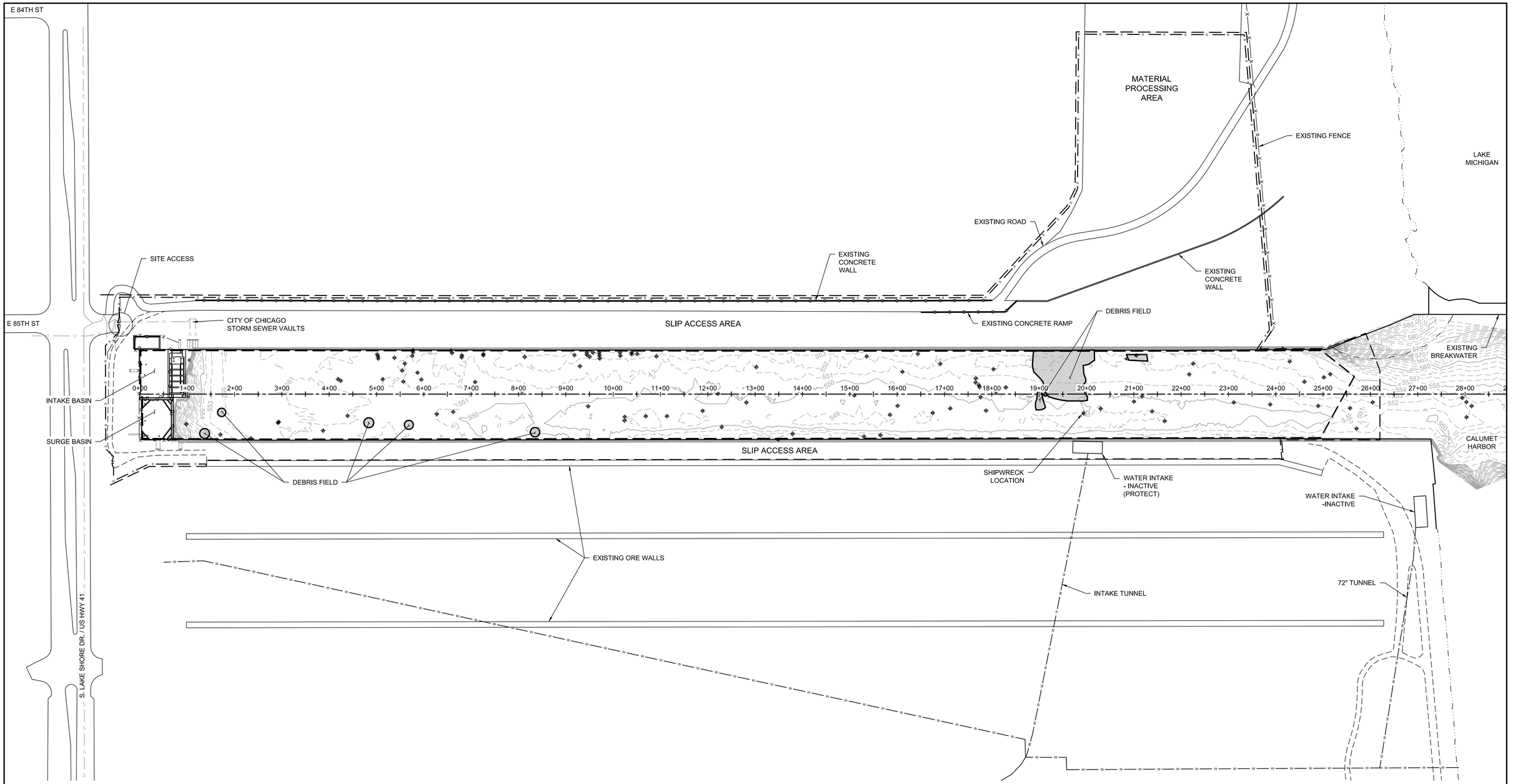
U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

TRAFFIC MANAGEMENT PLAN

BARR PROJECT # 1316101105
DWG # C-05
REV # A



LEGEND

- EXISTING 5' MAJOR CONTOUR
- EXISTING 1' MINOR CONTOUR
- EXISTING EDGE OF ROAD
- EXISTING STORM SEWER
- EXISTING WATER INTAKE TUNNEL
- EXISTING FENCE
- EXISTING EDGE OF TRAIL
- TYPICAL SHORE LINE
- WORK AREA LIMITS
- SECURITY FENCE
- PROPOSED CLEANUP EXTENT
- DEBRIS FIELD
- POINT DEBRIS (OLSON ENGINEERING, 2017) - DESCRIPTION NOT SHOWN FOR CLARITY, SEE DREDGE PRISM PLAN AND PROFILE SHEETS

1 - PLAN: SITE FEATURES

0 100 200

SCALE IN FEET

NOTES:

1. CONTOURS FROM WITHIN THE INTAKE AND SURGE BASINS ARE FROM TOP OF SEDIMENT ELEVATIONS MEASURED AT SIX SEDIMENT CORE LOCATIONS (THREE WITHIN EACH BASIN) DURING NOVEMBER 2019 INVESTIGATION.
2. DEBRIS SHOWN WERE IDENTIFIED DURING THE OLSEN ENGINEERING 2017 SURVEY, HOWEVER, THERE MAY BE OTHER DEBRIS PRESENT NOT IDENTIFIED DURING THE SURVEY DUE TO LIMITATIONS IN THE SURVEY METHODS.
3. A DEBRIS SURVEY WAS NOT COMPLETED IN THE HEAD OF THE SLIP, AND THEREFORE, NO DEBRIS IS NOTED IN THAT AREA FROM SURVEY RESULTS.

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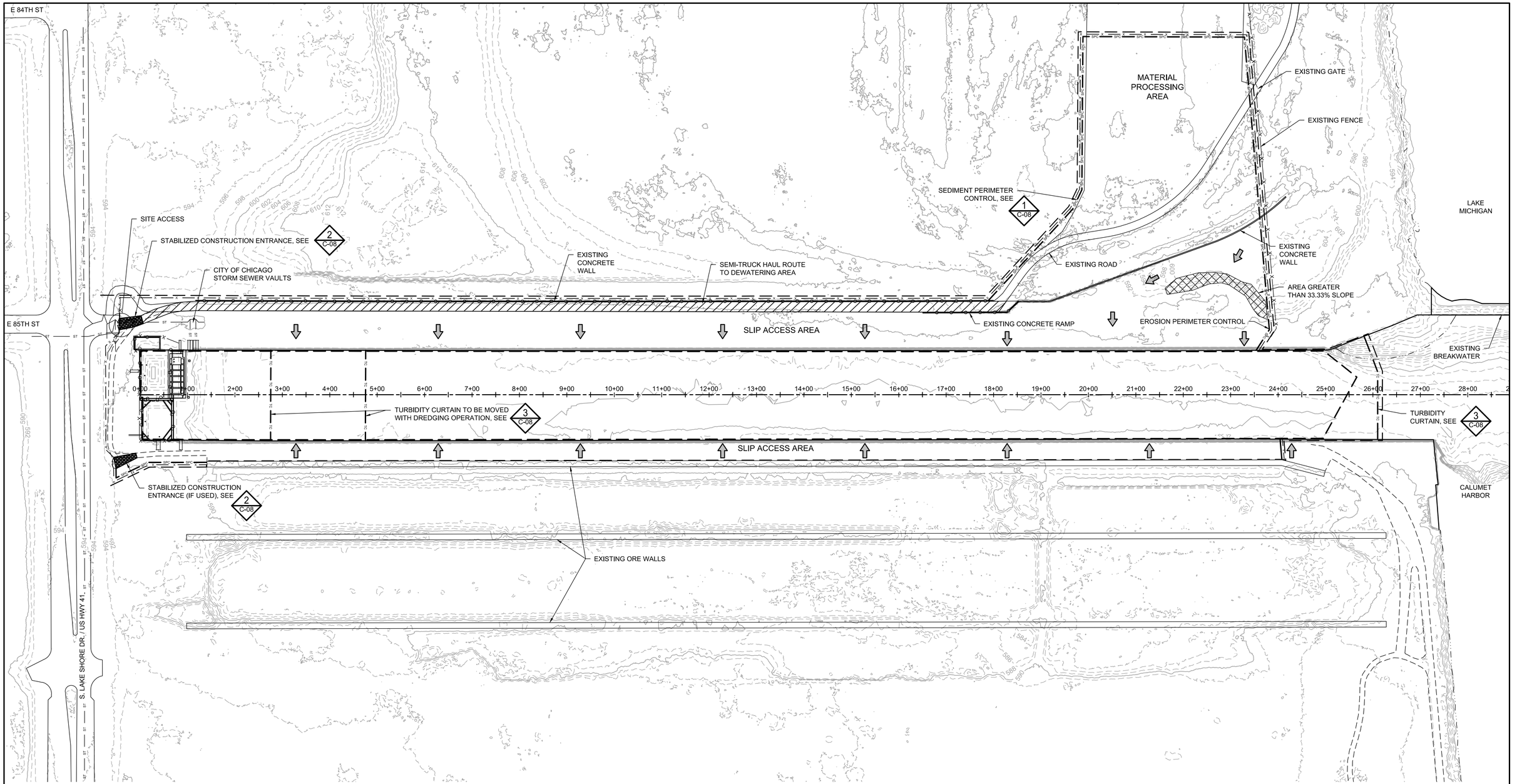
U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

DEBRIS SURVEY RESULTS

BARR PROJECT # 1316101105
DWG # C-06
REV # A

ORIGINAL DRAWING SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES) PLOT SCALE: 1:1.0001 PLOT DATE: 4/29/2026 7:55 PM
CADD USER: MAX J. JOUPPI FILE: N:\DESIGN\1316101105\1316101105_C-06.DWG



1 - PLAN: SWPPP CONTROL

0 100 200
SCALE IN FEET

N

LEGEND

- EXISTING 5' MAJOR CONTOUR
- EXISTING 1' MINOR CONTOUR
- EXISTING PROPERTY LINE
- EXISTING FENCE
- PROPOSED SEDIMENT PERIMETER CONTROL
- PROPOSED TURBIDITY CURTAIN
- FLOW ARROW
- EXISTING EDGE OF TRAIL
- TYPICAL SHORE LINE
- SECURITY FENCE
- WORK AREA LIMITS
- PROPOSED CLEANUP EXTENT

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U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

SWPPP CONTROL PLAN

BARR PROJECT # 1316101105
DWG # C-07
REV # A

ORIGINAL DRAWING SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES) PLOT SCALE: 1:1 PLOT DATE: 4/28/2026 7:56 PM
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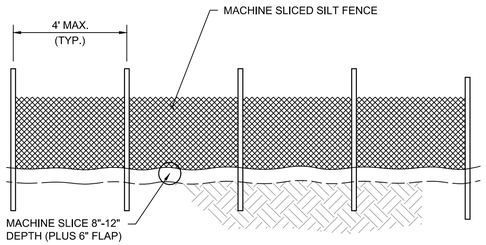
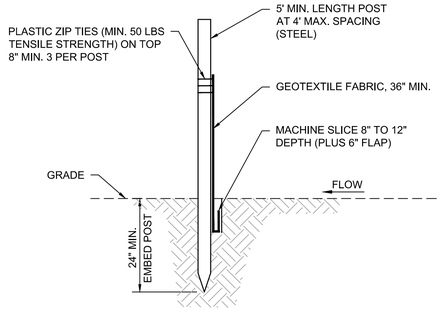


DOWNSTREAM VIEW

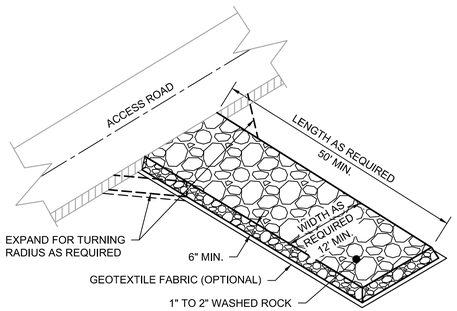


SECTION VIEW

NOTES:

1. INSTALL SILT FENCE PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED AND MAINTAIN THROUGHOUT THE CONSTRUCTION PERIOD. REMOVE SILT FENCE AND ANY ACCUMULATED SEDIMENT IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
2. NO HOLES OR GAPS SHALL BE PRESENT IN/UNDER SILT FENCE. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
3. REMOVE ACCUMULATED SEDIMENT WHEN BUILD UP REACHES 1/2 OF FENCE HEIGHT. OR INSTALL A SECOND SILT FENCE DOWNSTREAM OF THE ORIGINAL FENCE AT A SUITABLE DISTANCE.
4. WHEN SPLICES ARE NECESSARY MAKE SPLICE AT POST. PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE. ROTATE BOTH POSTS TOGETHER AT LEAST 180 DEGREES TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL. CUT THE FABRIC NEAR THE BOTTOM OF THE POSTS TO ACCOMMODATE THE 6 INCH FLAP, THEN DRIVE BOTH POSTS AND BURY THE FLAP AND COMPACT BACKFILL.

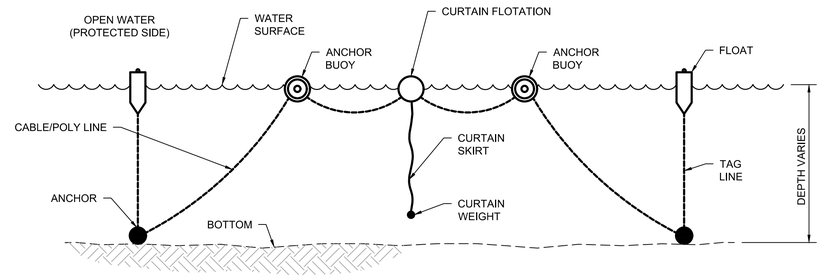
1 / C-07 DETAIL: SILT FENCE - MACHINE SLICED
NOT TO SCALE



NOTES:

1. MAINTAIN ENTRANCE/EXIT THROUGHOUT THE CONSTRUCTION PERIOD AND REPAIR OR REPLACE AS REQUIRED TO PREVENT TRACKING OFFSITE.
2. REMOVE ENTRANCE/EXIT IN CONJUNCTION WITH FINAL GRADING AND SITE STABILIZATION.

2 / C-07 DETAIL: CONSTRUCTION ENTRANCE/EXIT - ROCK
NOT TO SCALE

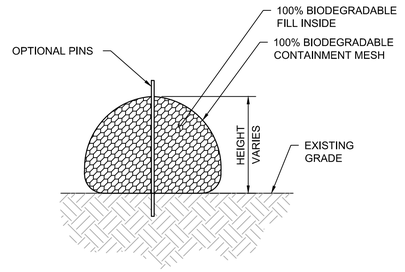


SECTION VIEW

NOTES:

1. INSTALL TURBIDITY CURTAIN PRIOR TO ANY WORK IN WATER.
2. ANCHOR TENSION CABLE AT SHORE AT BOTH END WITH STEEL POSTS OF DIAMETER AND LENGTH SUFFICIENT TO PREVENT BENDING AND PULL-OUT.
3. CURTAIN WEIGHT SHALL BE HEAVY ENOUGH TO HOLD CURTAIN VERTICAL IN CURRENT AND WAVES TYPICAL FOR THE SITE.
4. MAINTAIN SILT CURTAIN AND REPAIR OR REPLACE AS REQUIRED TO PREVENT DISCHARGE OF SEDIMENT TO PROTECTED WATER BODY.
5. REMOVE ANY ACCUMULATED SEDIMENT PRIOR TO REMOVAL OF SILT CURTAIN.
6. REMOVE SILT CURTAIN FOLLOWING SITE STABILIZATION OR AS DIRECTED BY ENGINEER.

3 / C-07 DETAIL: DOT TYPE III TURBIDITY CURTAIN (TYPICAL)
NOT TO SCALE



NOTES:

1. STAKE FREE SEDIMENT CONTROL LOG TO BE USED IN AREAS THAT ARE RELATIVELY FLAT AND SHOULD BE INSTALLED ALONG CONTOURS (CONSTANT ELEVATION).
2. NO GAPS SHALL BE PRESENT UNDER SEDIMENT CONTROL LOG. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN REACHING 1/2 OF LOG HEIGHT.
4. SEDIMENT CONTROL LOG SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND REPAIRED OR REPLACED AS REQUIRED.

4 / - DETAIL: SEDIMENT CONTROL LOG - STAKE FREE
NOT TO SCALE

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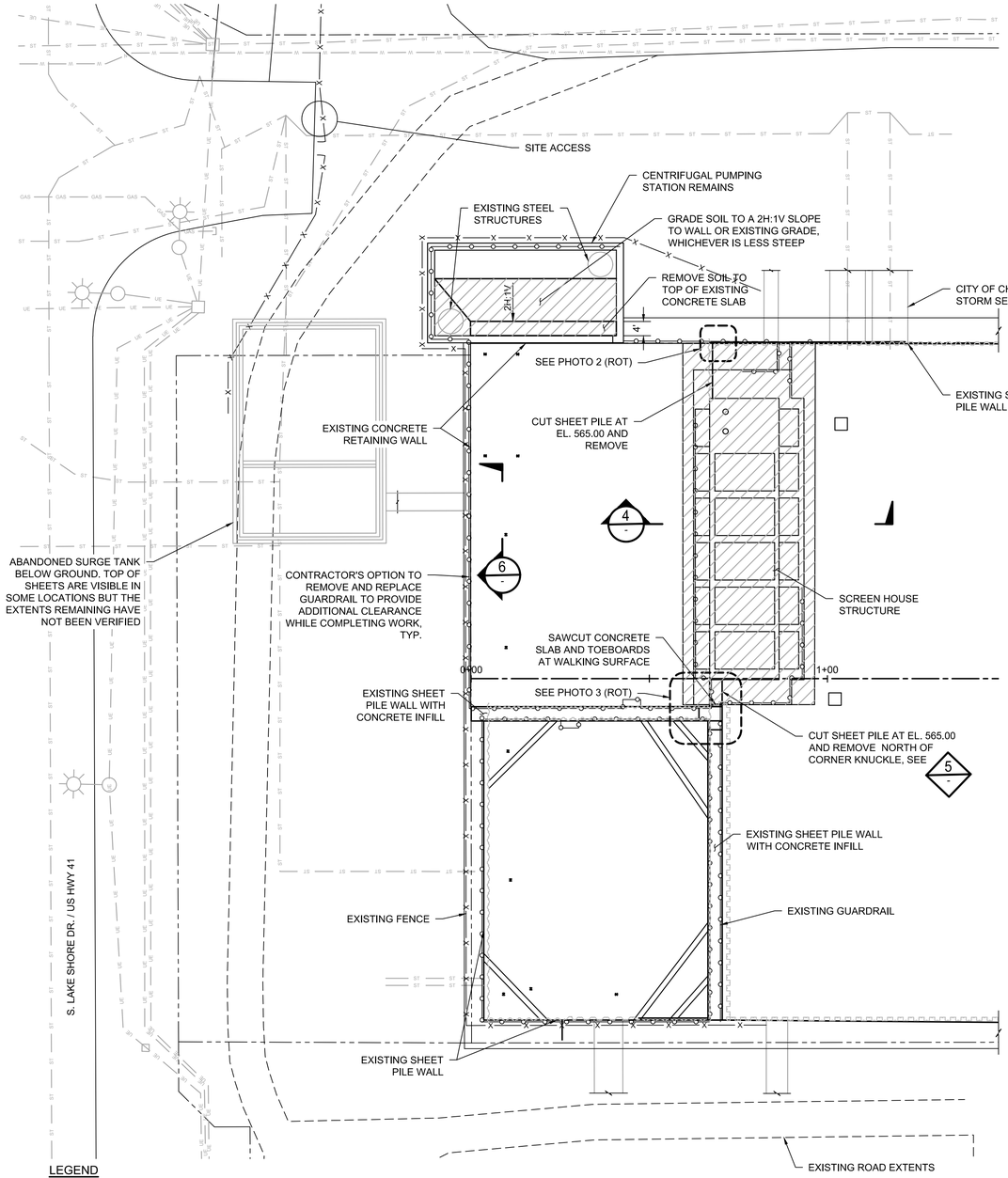
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

SWPPP DETAILS

BARR PROJECT # 1316101105
DWG # C-08
REV # A



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABANDONED STORM SEWER
- EXISTING STORM SEWER
- EXISTING WATER INTAKE TUNNEL
- EXISTING FENCE
- EXISTING UNDERGROUND ELECTRICAL
- EXISTING ROAD EXTENTS
- EXISTING GUARDRAIL

1 - PLAN: DEMOLITION - HEAD OF SLIP

0 20 40
SCALE IN FEET

GENERAL NOTES:

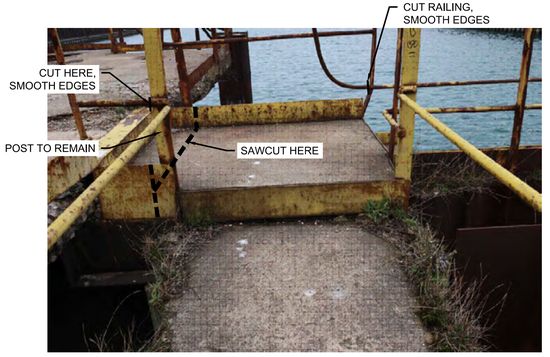
1. SEE SHEET C-03 FOR EXISTING CONDITIONS DRAWING
2. SEE SHEET C-11 FOR WALER AND TIEBACK PLAN

2 - PHOTO: NORTH WALL

NOT TO SCALE

NOTE:

1. PHOTO TAKEN LOOKING EAST.

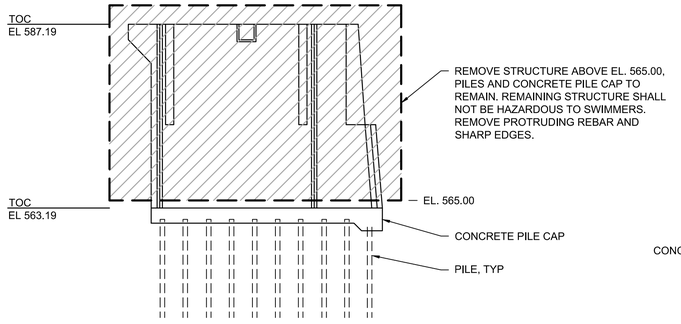


3 - PHOTO: CENTER OF SLIP

NOT TO SCALE

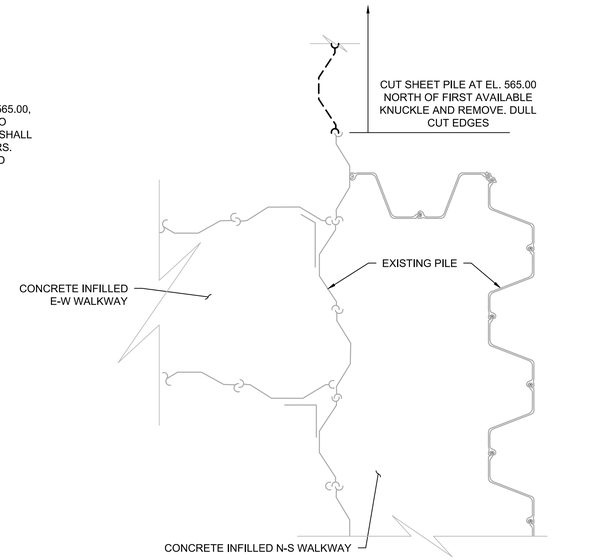
NOTE:

1. PHOTO TAKEN LOOKING EAST.



4 - SECTION: SCREEN HOUSE STRUCTURE

NOT TO SCALE



5 - DETAIL: MIDDLE OF SLIP

NOT TO SCALE

6 - SECTION: EXISTING STEEL DEMOLITION ON WEST WALL

NOT TO SCALE

NOTE:

1. PHOTO TAKEN LOOKING SOUTHWEST.

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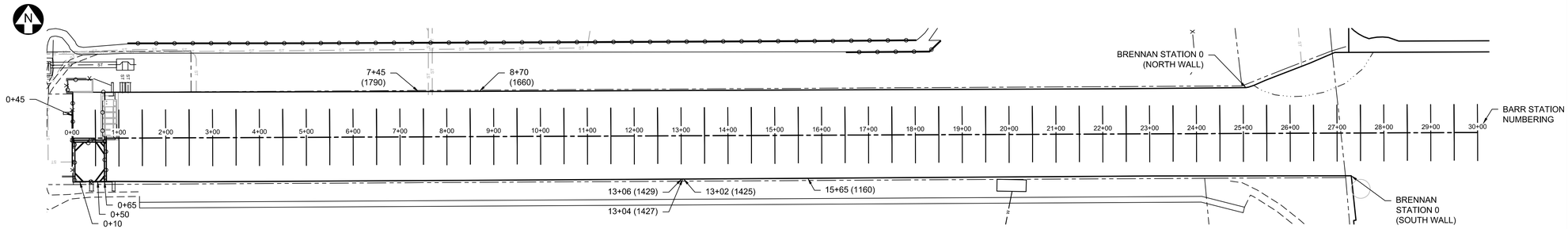
WWW.BARR.COM
MINNESOTA ENGINEERING FIRM
NUMBER 10104111545

U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

DEMOLITION PLAN

BARR PROJECT # 1316101105
DWG # C-10
REV # A



1 - PLAN: SHEET PILE REPAIRS

1/128" = 1'-0"

0 40 80 160 240

SCALE

KEY NOTES:

1. REPAIR DETAILS ARE EXAMPLE ONLY. FINAL REPAIR DETAIL WILL BE DESIGNED FOLLOWING REPAIR-CONTRACTOR'S CLEANING AND DIVE-INSPECTION OF THE AREAS NOTED IN THE SCHEDULE. REPAIRS WILL BE BASED OFF OF DETAILED FINDINGS FROM THAT INSPECTION AND REPAIR CONTRACTOR'S RECOMMENDATIONS.

SHEET PILE REPAIR SCHEDULE

BARR STATION NUMBER	BRENNAN STATION NUMBER	BRENNAN-PROVIDED DESCRIPTION	ESTIMATED ELEVATION	PROPOSED REPAIR METHOD (NOTE 1)
8+70 (NORTH WALL)	1660 (NORTH WALL)	HOLE IN SHEETING AT WATERLINE, 6"W X 8"H.	582	ASSUMED TO BE ABOVE WATERLINE. PATCH WITH FIELD-WELDED REPAIR PLATE.
7+45 (NORTH WALL)	1790 (NORTH WALL)	HOLE IN SHEETING AT WATERLINE, 6"W X 8"H.	582	ASSUMED TO BE ABOVE WATERLINE. PATCH WITH FIELD-WELDED REPAIR PLATE.
0+10 (SOUTH WALL)	-	MISSING 9" WIDE SHEET FROM SLIP BOTTOM TO BOTTOM OF CONCRETE SLIP WALL, UP TO 4.5' DEEP VOID.	559 - 578	DETAIL 1/C-17, WITH 1'-3" WIDE X 19' TALL PLATE
0+50 (SOUTH WALL)	-	MISSING 22 1/2" WIDE SHEET FROM BOTTOM TO BOTTOM OF CONCRETE SLIP WALL, 11" DEEP VOID, PARTIALLY FILLED IN WITH SHEET METAL.	559 - 578	DETAIL 1/C-17, WITH 2'-4" WIDE X 19' TALL PLATE
0+65 (SOUTH WALL)	-	5" WIDE OPENING WITH NO VOID DEPTH DUE TO ROCK BACKFILL FROM TOP TO BOTTOM.	559 - 578	DETAIL 1/C-17, WITH 11" WIDE X 19' TALL PLATE
15+65 (SOUTH WALL)	1160 (SOUTH WALL)	SPLIT KNUCKLE 3' BELOW WATERLINE.	547 - 579	DETAIL 2/C-17
13+02 (SOUTH WALL)	1425 (SOUTH WALL)	AT 17-FEET BELOW THE WATERLINE THE SHEETING WAS SEPARATED AND PUSHED OUT. 20-FEET BELOW THE WATERLINE THE SHEETING WAS GONE. THIS CREATED A HOLE MEASURING 22-INCHES WIDE BY 22-INCHES HIGH AND HAD 13-INCHES OF LOSS.	563 - 565	DETAIL 3/C-17
13+04 (SOUTH WALL)	1427 (SOUTH WALL)	VERTICAL SEAM WAS SEPARATED 25-FEET BELOW THE WATERLINE AND SPANNED A VERTICAL HEIGHT OF 4-FEET 2-INCHES. THE ENTIRE OUTPAN WAS SPLIT AND MEASURED 22-INCHES WIDE.	553 - 557	DETAIL 3/C-17
13+06 (SOUTH WALL)	1429 (SOUTH WALL)	THE ENTIRE OUTPAN WAS GONE STARTING 14-FEET BELOW THE WATERLINE AND RUNNING TO THE MUDLINE OF 26-FEET DEEP. THERE WAS ROCK SEEN BEHIND IT.	547 - 568	DETAIL 3/C-17
0+45 FROM NORTH (WEST WALL)	-	VOID AT WATERLINE, 10' W X 16" H X 6' DEEP	578 - 580	DETAIL 4/C-17

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U. S. STEEL
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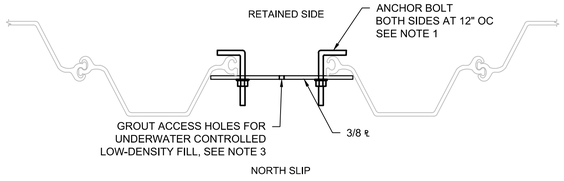
NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

SHEET PILE REPAIR PLAN

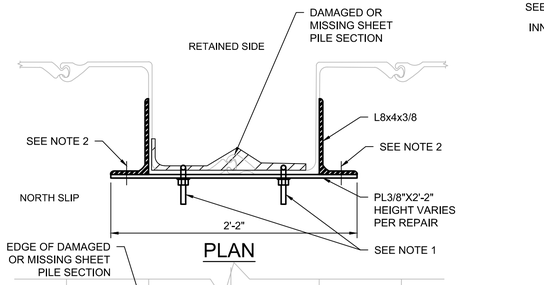
BARR PROJECT # 1316101105
DWG # C-16
REV # A



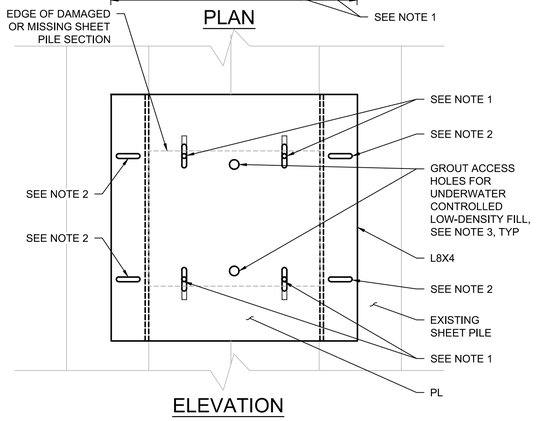
1 C-16 PLAN: TALL SLOT INFILL

0 3 6 9 1 2

SCALE



PLAN

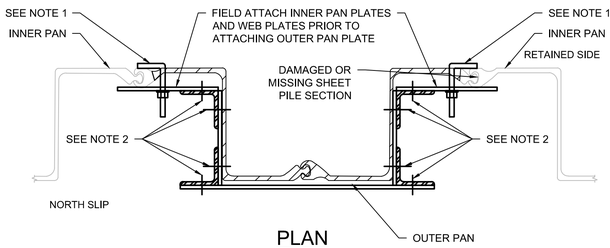


ELEVATION

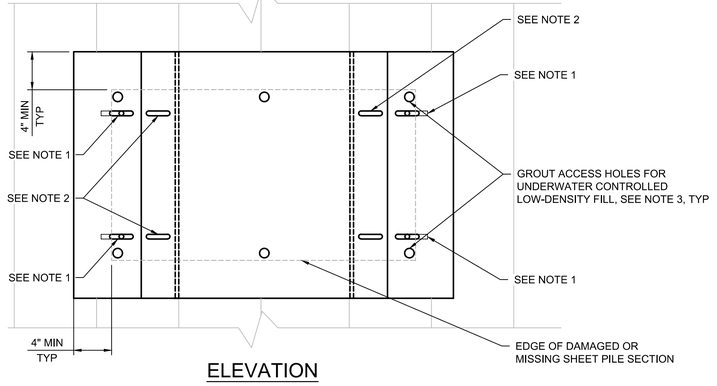
2 C-16 DETAIL: MID-HEIGHT SMALL INFILL

0 3 6 9 1 2

SCALE



PLAN



ELEVATION

3 C-16 DETAIL: MID-HEIGHT LARGE INFILL

0 3 6 9 1 2

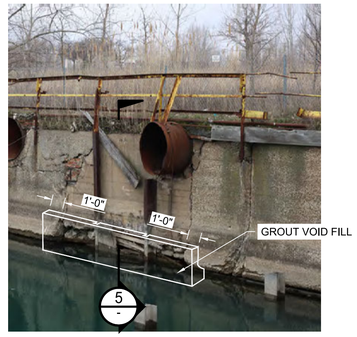
SCALE

GENERAL NOTES:

1. THE REPAIRS SHOWN ON THIS SHEET DO NOT REPRESENT STRUCTURAL REPAIRS TO THE SHEET PILE WALL. THE PURPOSE OF THE REPAIRS IS TO PROVIDE A BARRIER TO PREVENT THE LOSS OF ADDITIONAL SOIL FROM BEHIND THE SHEET PILE WALL.

KEY NOTES:

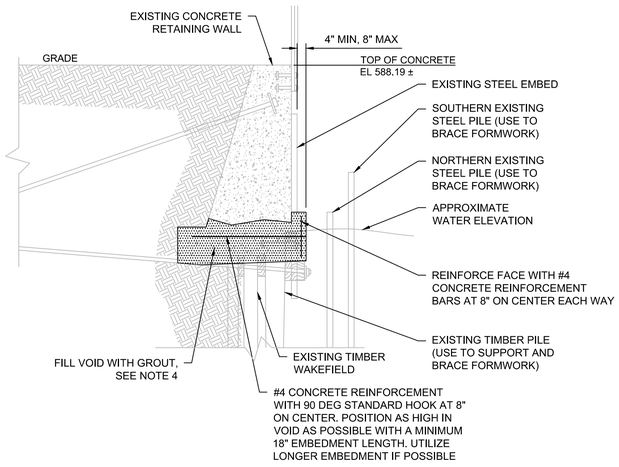
1. 1/2" DIAMETER 90 DEGREE ANCHOR BOLT, 180 DEGREE ANCHOR BOLT, OR ALL THREADED 90 DEGREE BENT ROD. USE LONG SLOTTED HOLES IN PLATE AND STANDARD HOLES IN ANGLES TO PROVIDE ADJUSTABILITY.
2. USE LONG SLOTTED HOLES IN PLATE AND STANDARD HOLES IN ANGLES TO PROVIDE ADJUSTABILITY.
3. INSTALL STEEL PLATE AND TIGHTEN FIRMLY AGAINST EXISTING SHEET PILE
4. USING ANCHOR BOLTS TO HOLD PLATE IN PLACE, SEAL GAPS AROUND EDGES TO MINIMIZE WASHOUT. FILL VOID THROUGH GROUT ACCESS HOLES WITH UNDERWATER CONTROLLED LOW DENSITY FILL. HOLE SIZE TO BE DETERMINED BY GROUTING CONTRACTOR
5. FORM AREA TO CONTAIN GROUT TO FULLY FILL VOID. PROVIDE VENT TUBING TO ALLOW AIR TO ESCAPE DURING GROUT PLACEMENT, INSTALL CONCRETE REINFORCEMENT. FILL VOID WITH SIKAGROUT 500 AQUA, FIVE STAR CEMENTITIOUS UNDERWATER HIGH STRENGTH GROUT, OR APPROVED EQUAL. INSTALL GROUT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.



4 C-16 DETAIL: INTAKE BASIN WEST WALL INFILL

0 1 5

SCALE



5 C-17 SECTION: INTAKE BASIN WEST WALL INFILL

0 1 5

SCALE

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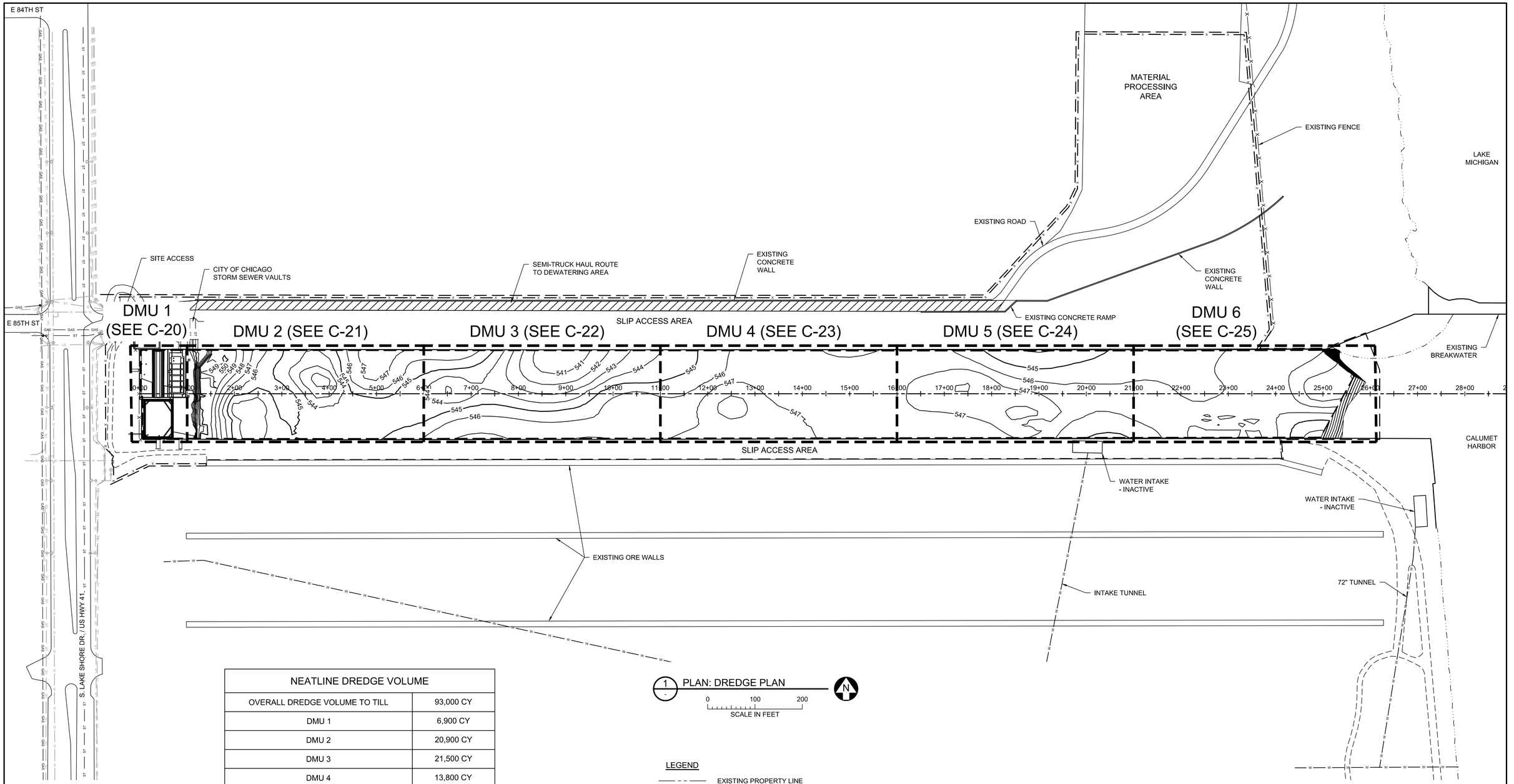
NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

SHEET PILE REPAIR DETAILS

BARR PROJECT # 1316101105
DWG # C-17
REV # A



NEATLINE DREDGE VOLUME	
OVERALL DREDGE VOLUME TO TILL	93,000 CY
DMU 1	6,900 CY
DMU 2	20,900 CY
DMU 3	21,500 CY
DMU 4	13,800 CY
DMU 5	14,200 CY
DMU 6	15,700 CY

1 PLAN: DREDGE PLAN

0 100 200
SCALE IN FEET

LEGEND

- EXISTING PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING WATER INTAKE TUNNEL
- EXISTING FENCE
- DREDGE MANAGEMENT UNIT (DMU)
- WORK AREA LIMITS
- SECURITY FENCE
- PROPOSED CLEANUP EXTENT
- PROPOSED MAJOR 5' CONTOUR
- PROPOSED MINOR 1' CONTOUR

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NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

DREDGE PLAN

BARR PROJECT # 1316101105
DWG # C-18
REV # A

E 84TH ST

E 85TH ST

S. LAKE SHORE DR. / US HWY 41

MATERIAL PROCESSING AREA

EXISTING FENCE

EXISTING ROAD

SITE ACCESS

CITY OF CHICAGO STORM SEWER VAULTS

SEMI-TRUCK HAUL ROUTE TO DEWATERING AREA

EXISTING CONCRETE WALL

EXISTING CONCRETE WALL

EXISTING CONCRETE RAMP

LAKE MICHIGAN

DMU 1 (SEE C-20)

DMU 2 (SEE C-21)

DMU 3 (SEE C-22)

SLIP ACCESS AREA

DMU 4 (SEE C-23)

DMU 5 (SEE C-24)

DMU 6 (SEE C-25)

EXISTING BREAKWATER

SLIP ACCESS AREA

CALUMET HARBOR

WATER INTAKE

WATER INTAKE

EXISTING ORE WALLS

INTAKE TUNNEL

72" TUNNEL

NEATLINE COVER FILL QUANTITY TABLE		
	VOLUME	AREA
OVERALL COVER FILL	12,300 CY	11.18 ACRES
DMU 1	3,300 CY	0.46 ACRES
DMU 2	1,800 CY	2.17 ACRES
DMU 3	1,800 CY	2.17 ACRES
DMU 4	1,800 CY	2.17 ACRES
DMU 5	1,800 CY	2.17 ACRES
DMU 6	1,800 CY	2.04 ACRES

1 - PLAN: RESIDUAL COVER

N

0 100 200

SCALE IN FEET

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABANDONED STORM SEWER
- EXISTING STORM SEWER
- EXISTING WATER INTAKE TUNNEL
- EXISTING FENCE
- TYPICAL SHORELINE
- PROPOSED 5' MAJOR CONTOUR
- PROPOSED 1' MINOR CONTOUR
- WORK AREA LIMITS
- SECURITY FENCE
- DREDGE MANAGEMENT UNIT (DMU)
- WORK AREA LIMITS

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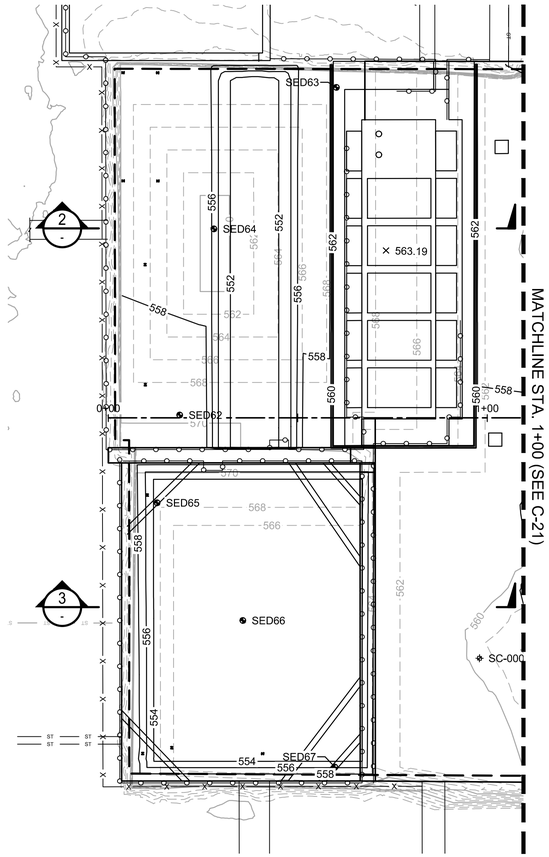
NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

RESIDUAL COVER PLAN

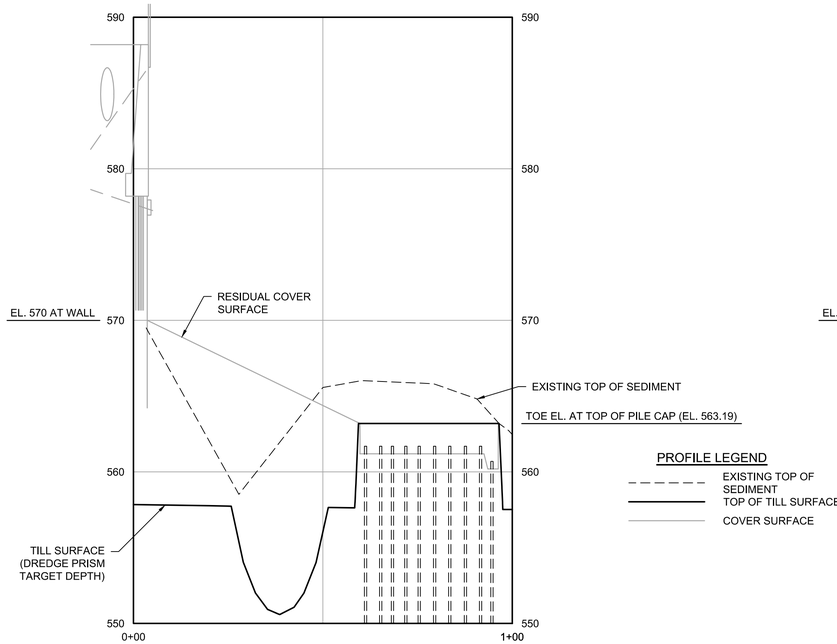
BARR PROJECT # 1316101105
DWG # C-19
REV # A



1 - PLAN: DREDGE PRISM (DMU 1)

0 20 40

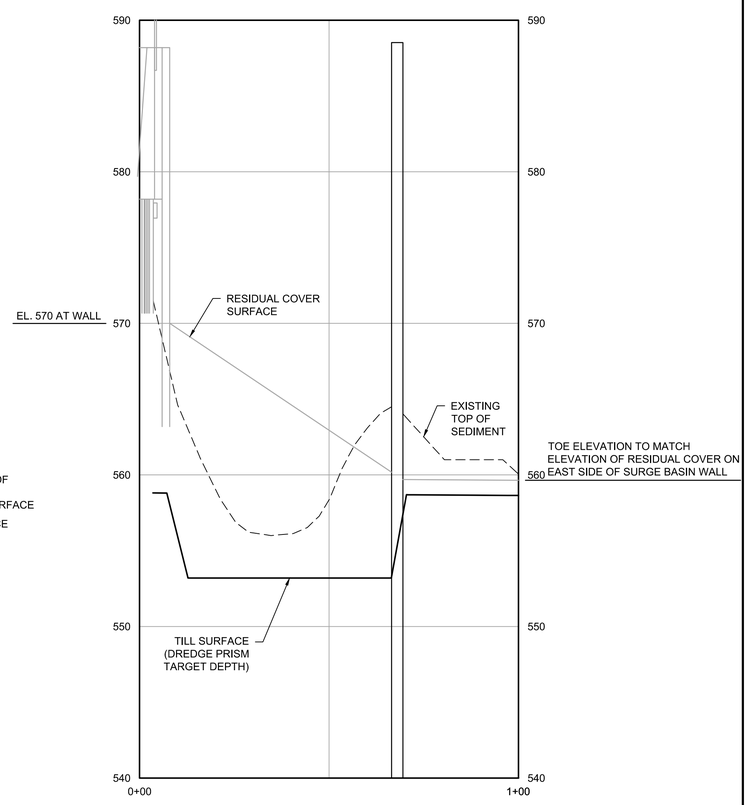
SCALE IN FEET



2 - PROFILE: DREDGE PRISM (DMU 1) - INTAKE BASIN

0 20 40 HORZ. SCALE IN FEET

0 5 10 VERT. SCALE IN FEET



3 - PROFILE: DREDGE PRISM (DMU 1) - SURGE BASIN

0 20 40 HORZ. SCALE IN FEET

0 5 10 VERT. SCALE IN FEET

LEGEND

- EXISTING 10' MAJOR CONTOUR
- EXISTING 2' MINOR CONTOUR
- EXISTING FENCE
- EXISTING GUARDRAIL
- PROPOSED DREDGE 10' MAJOR CONTOUR
- PROPOSED DREDGE 2' MINOR CONTOUR
- DREDGE MANAGEMENT UNIT (DMU)
- PROPOSED CLEANUP EXTENT
- SED85 EXISTING INVESTIGATION LOCATION
- SC-0001 EXISTING POINT DEBRIS

NOTES:

THE TOP OF TILL ELEVATIONS UTILIZED IN THE CONSTRUCTION DOCUMENTS IN AND NEAR THE HEAD OF THE SLIP WERE BASED ON THE FOLLOWING:

1. UPPER MOST TOP OF TILL ELEVATION FOR THE SITE IS A SURFACE DEVELOPED BY BARR BASED ON THE TOP OF TILL IDENTIFIED IN UPLAND BORINGS AND PROJECTED THROUGH THE SLIP.
2. TOP OF TILL ELEVATION WEST OF THE SCREEN STRUCTURE WAS THEN LOWERED TO THE LOWEST ELEVATION FOUND IN THE FOLLOWING DRAWINGS:
   A. U. S. STEEL DRAWING 19543 - NORTH SLIP REPAIRS TO SCREEN CRIB & FENDER - 1913
   B. U. S. STEEL DRAWING 175503 - NORTH VESSEL SLIP SURGE BASIN SHEET PILING PLAN - 1974
3. TOP OF TILL ELEVATION EAST OF THE SCREEN STRUCTURE TO SLIP STATION 2+00 WAS THEN LOWERED PER THE FOLLOWING:
   A. SURFACE DEVELOPED BY BARR BASED ON INVESTIGATIONS (IDENTIFIED ON DRAWING C-02) COMPLETED AS PART OF THIS PROJECT (2017 AND 2020).
   B. BULTEMA DOCK & DREDGE DRAWING A75-054 - NORTH SLIP APPROVED DREDGE SOUNDINGS - 1975
   C. BASED ON THE FINDINGS THAT THE SEDIMENT LAYER THICKNESS IS GENERALLY CONSISTENT, WHEN GRADE SLOPES TO CONNECT SURFACES, THE RISE-RUN OF THE TOP OF TILL SURFACE MATCHES THAT OF THE SEDIMENT ABOVE.
4. SEE DRAWING C-04 FOR ADDITIONAL INFORMATION ON THE ABOVE REFERENCED DRAWINGS.

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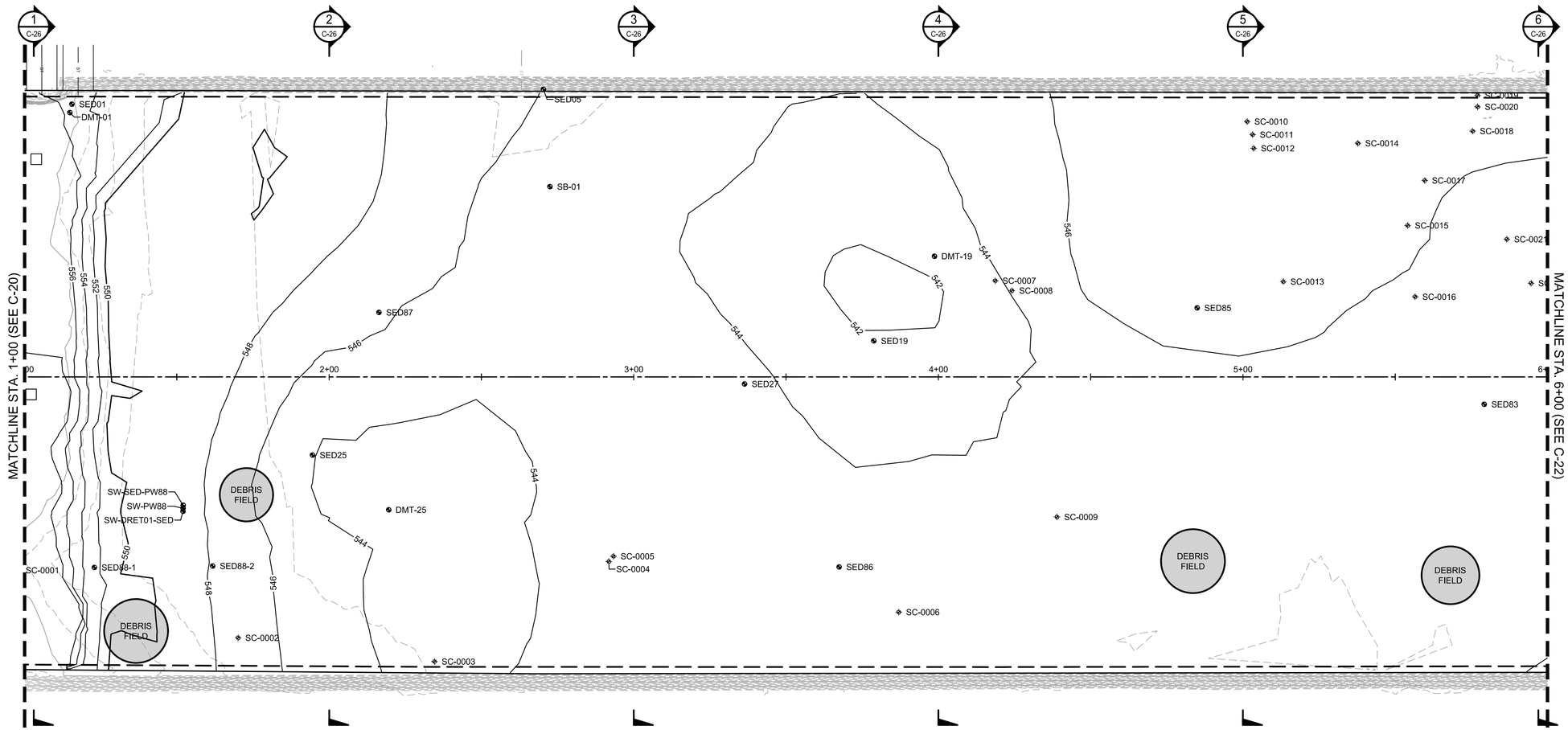
FORMER U. S. STEEL SOUTH WORKS PLANT

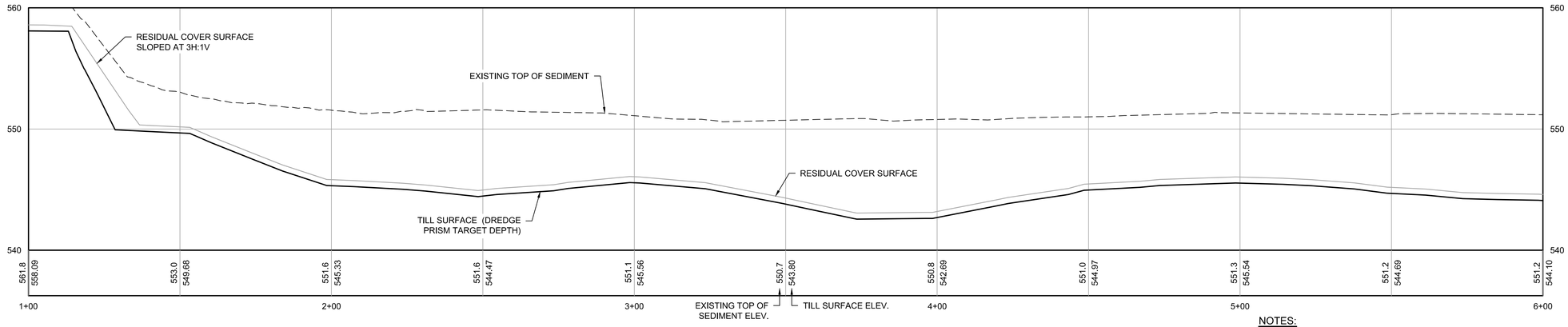
DREDGE PRISM (DMU 1) - STA. 0+00 TO 1+00

BARR PROJECT # 1316101105
DWG # C-20
REV # A



1 - PLAN: DREDGE PRISM (DMU 2)

0 20 40
SCALE IN FEET



PROFILE LEGEND
EXISTING TOP OF SEDIMENT
TOP OF TILL SURFACE
COVER SURFACE

2 - PROFILE: DREDGE PRISM (DMU 2)

0 20 40
HORZ. SCALE IN FEET

0 5 10
VERT. SCALE IN FEET

NOTES:
1. 90TH PERCENTILE WATER SURFACE ELEVATION = 577.42
2. PROFILE SHOWN REPRESENTS ALIGNMENT SHOWN IN PLAN.

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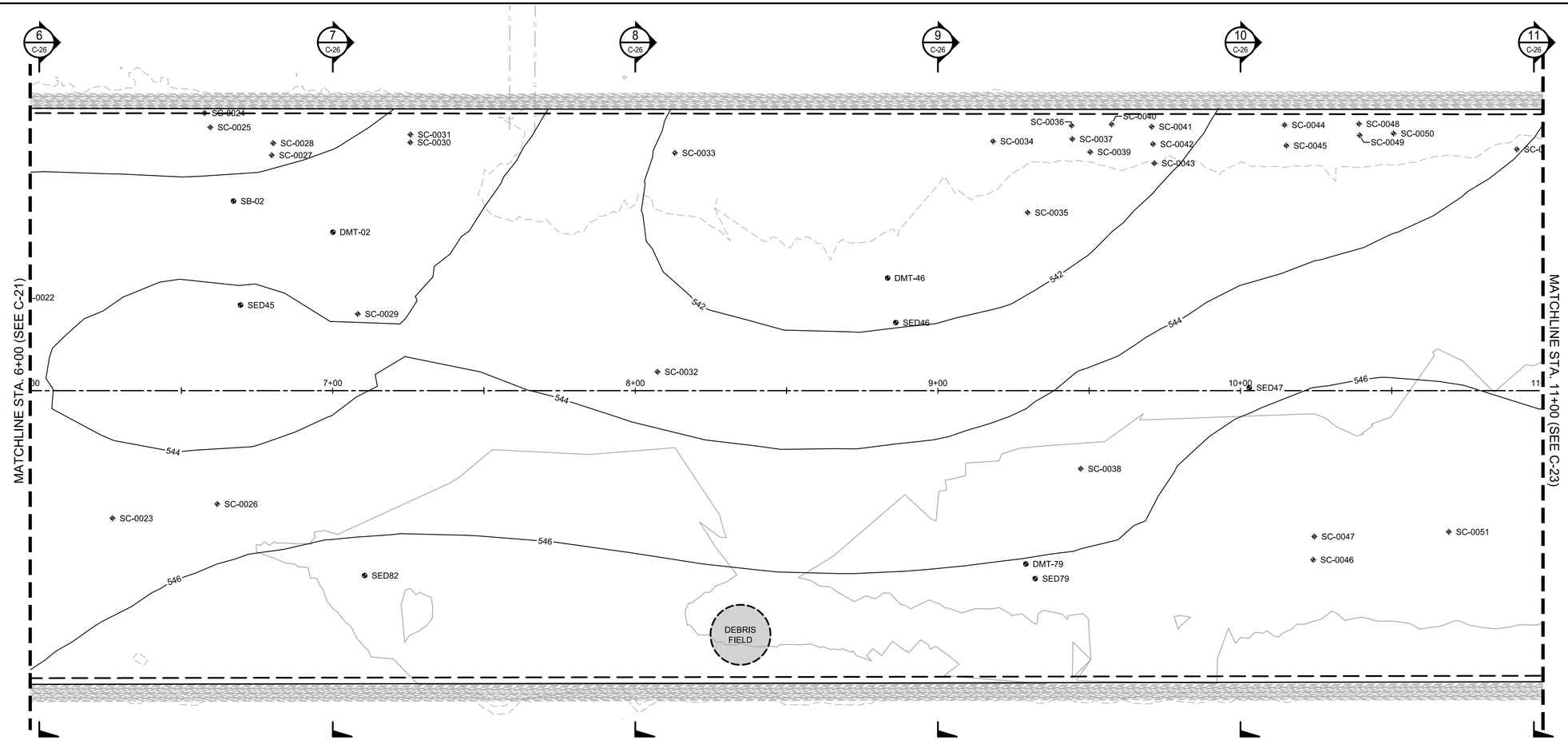
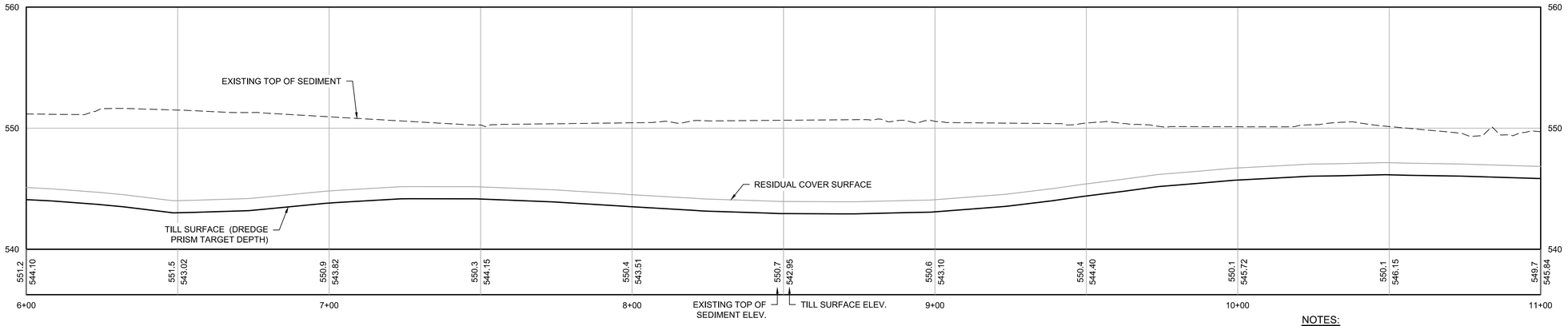
DREDGE PRISM (DMU 2) - STA. 1+00 TO 6+00

BARR PROJECT # 1316101105
DWG # C-21
REV # A



1 PLAN: DREDGE PRISM (DMU 3)

0 20 40
SCALE IN FEET



2 PROFILE: DREDGE PRISM (DMU 3)

0 20 40
HORZ. SCALE IN FEET

0 5 10
VERT. SCALE IN FEET

PROFILE LEGEND
EXISTING TOP OF SEDIMENT
TOP OF TILL SURFACE
COVER SURFACE

NOTES:
1. 90TH PERCENTILE WATER SURFACE ELEVATION = 577.42
2. PROFILE SHOWN REPRESENTS ALIGNMENT SHOWN IN PLAN.

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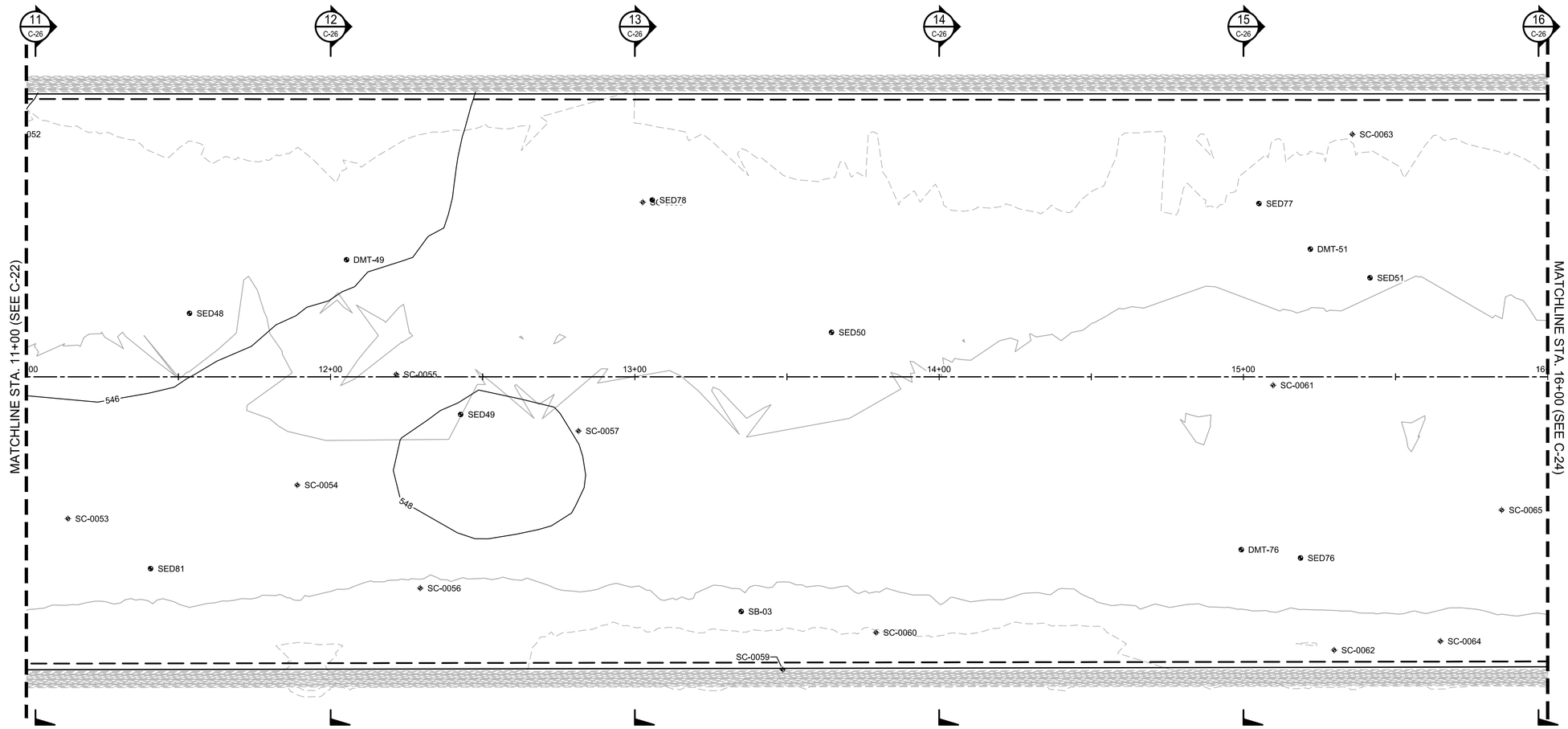
DREDGE PRISM (DMU 3) - STA. 6+00 TO 11+00

BARR PROJECT # 1316101105
DWG # C-22
REV # A



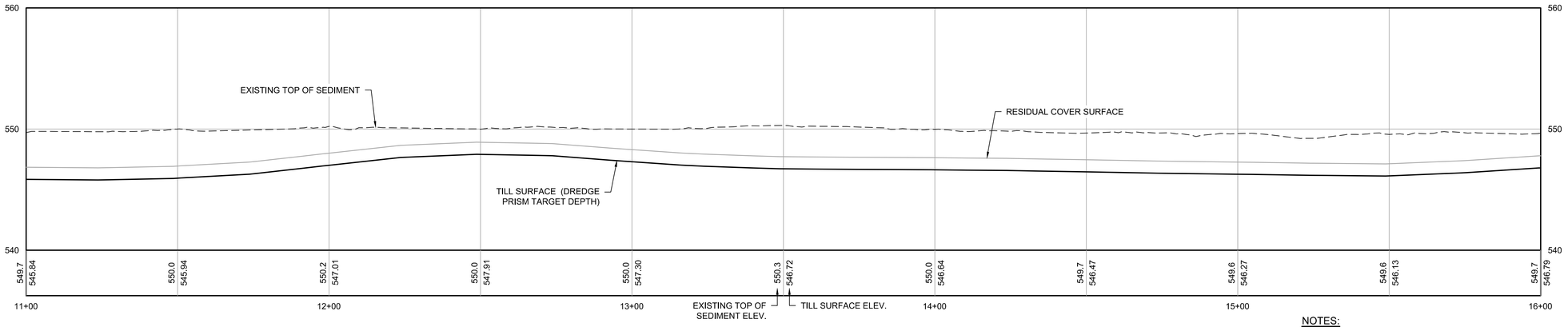
LEGEND

- EXISTING 10' MAJOR CONTOUR
- EXISTING 2' MINOR CONTOUR
- PROPOSED DREDGE 10' MAJOR CONTOUR
- PROPOSED DREDGE 2' MINOR CONTOUR
- DREDGE MANAGEMENT UNIT (DMU)
- PROPOSED CLEANUP EXTENT
- SED85 EXISTING INVESTIGATION LOCATION
- SC-0001 EXISTING POINT DEBRIS

1 - PLAN: DREDGE PRISM (DMU 4)

0 20 40
SCALE IN FEET

N



PROFILE LEGEND

- EXISTING TOP OF SEDIMENT
- TOP OF TILL SURFACE
- COVER SURFACE

2 - PROFILE: DREDGE PRISM (DMU 4)

0 20 40
HORZ. SCALE IN FEET

0 5 10
VERT. SCALE IN FEET

NOTES:

1. 90TH PERCENTILE WATER SURFACE ELEVATION = 577.42
2. PROFILE SHOWN REPRESENTS ALIGNMENT SHOWN IN PLAN.

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FORMER U. S. STEEL SOUTH WORKS PLANT

DREDGE PRISM (DMU 4) - STA. 11+00 TO 16+00

BARR PROJECT # 1316101105
DWG # C-23
REV # A

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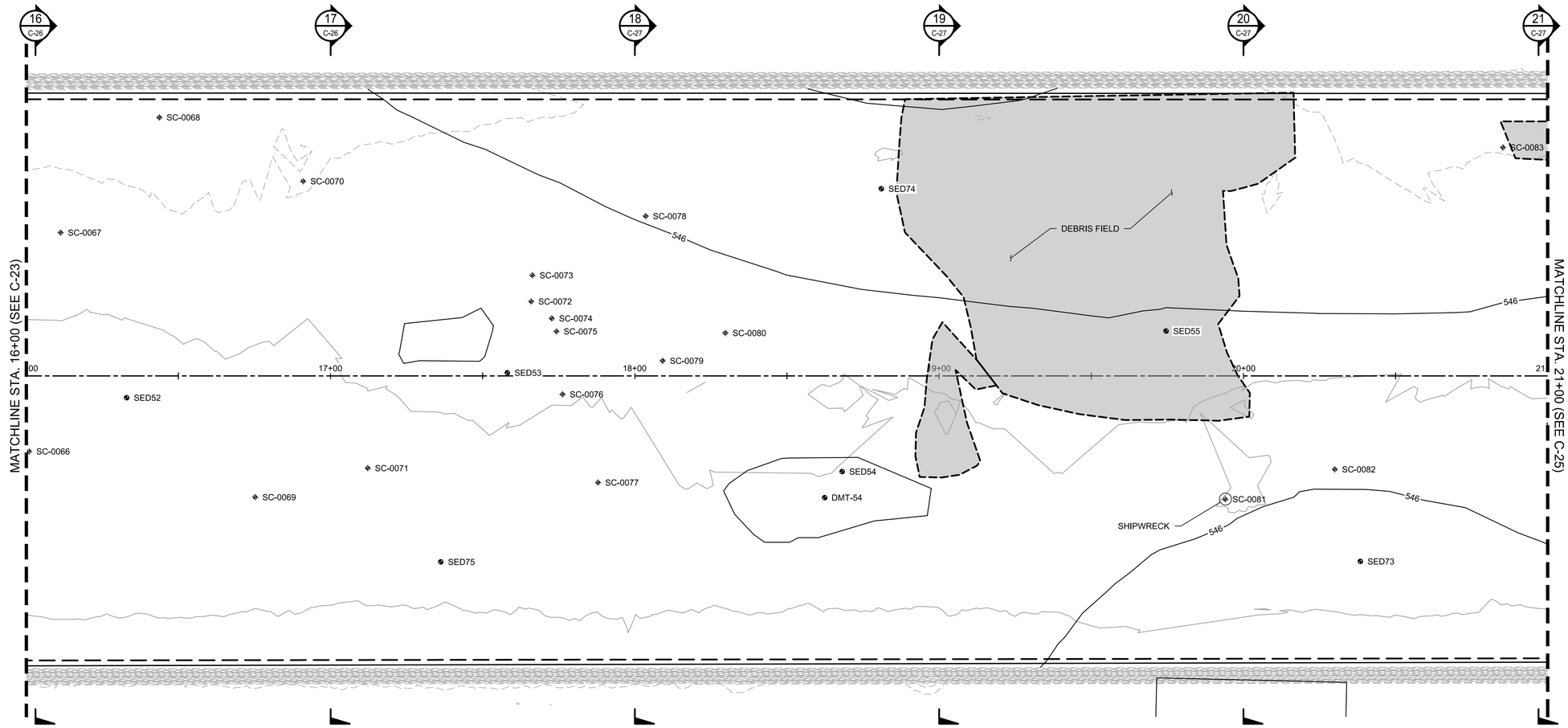
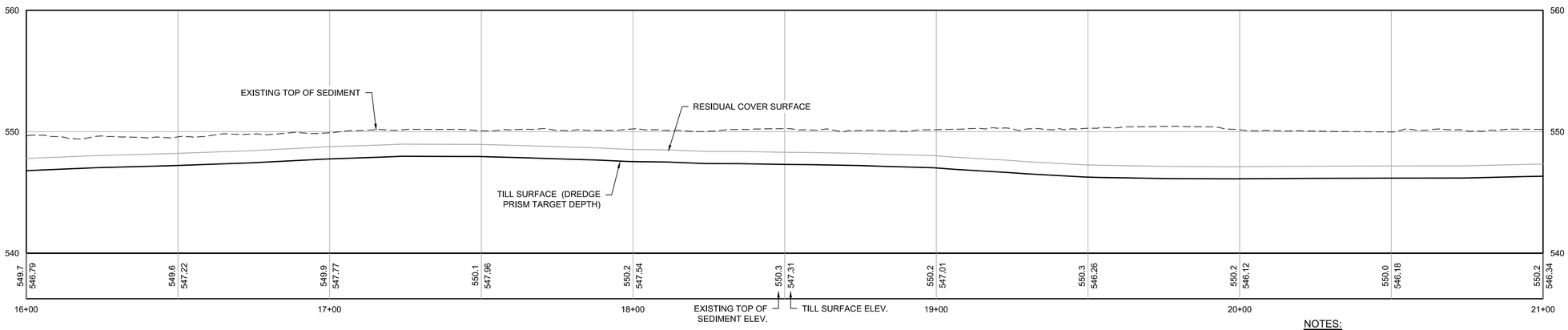


1 - PLAN: DREDGE PRISM (DMU 5)

0 20 40
SCALE IN FEET

N



2 - PROFILE: DREDGE PRISM (DMU 5)

0 20 40
HORZ. SCALE IN FEET

0 5 10
VERT. SCALE IN FEET

LEGEND

- EXISTING 10' MAJOR CONTOUR
- EXISTING 2' MINOR CONTOUR
- PROPOSED DREDGE 10' MAJOR CONTOUR
- PROPOSED DREDGE 2' MINOR CONTOUR
- DREDGE MANAGEMENT UNIT (DMU)
- PROPOSED CLEANUP EXTENT
- SED85 EXISTING INVESTIGATION LOCATION
- SC-0001 EXISTING POINT DEBRIS

PROFILE LEGEND

- EXISTING TOP OF SEDIMENT
- TOP OF TILL SURFACE
- COVER SURFACE

NOTES:

1. 90TH PERCENTILE WATER SURFACE ELEVATION = 577.42
2. PROFILE SHOWN REPRESENTS ALIGNMENT SHOWN IN PLAN.

ISSUED FOR BID / PERMITTING
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
A	MJJ	KPW	MJE	04/29/2026	ISSUED FOR BID / PERMITTING

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

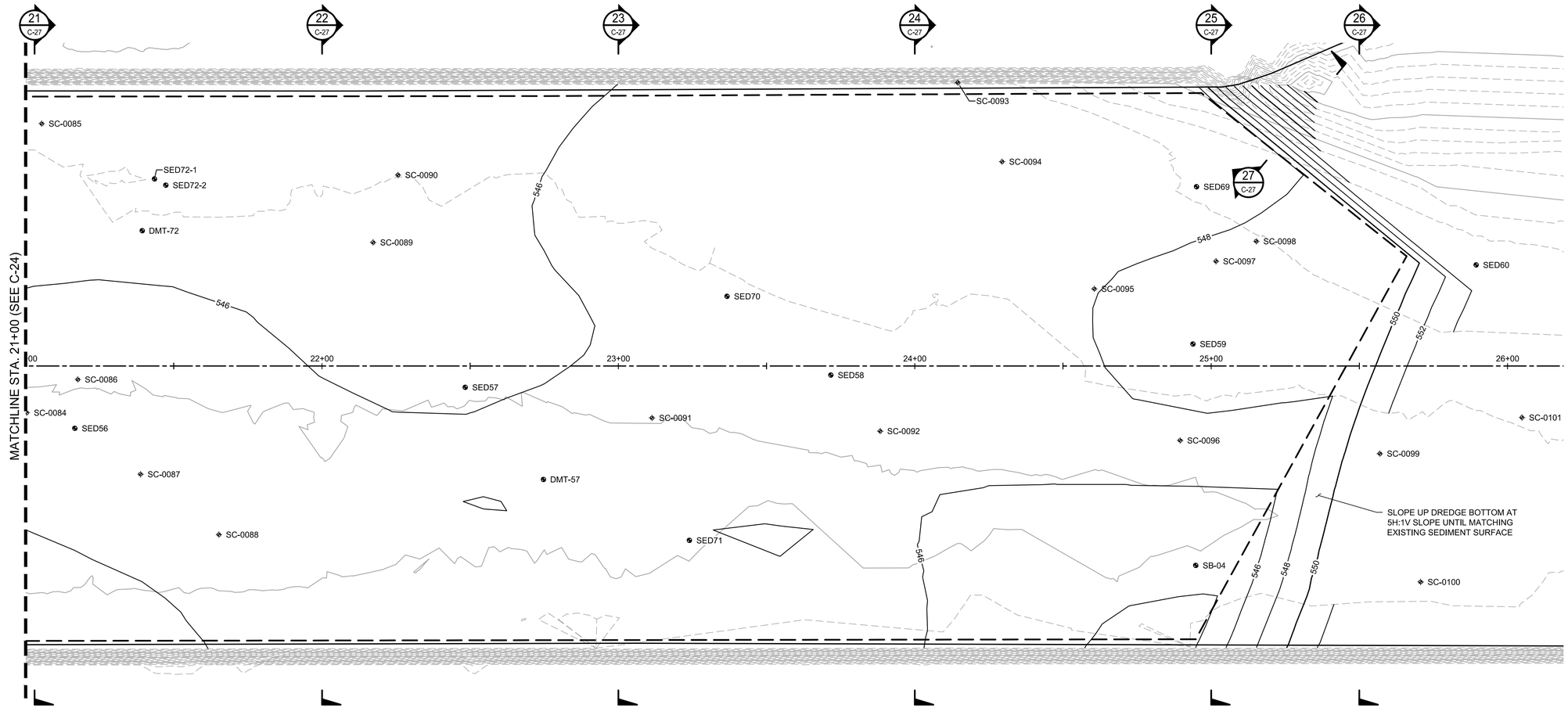
PH: 1-800-632-2277
WWW.BARR.COM
MINNESOTA ENGINEERING FIRM
NUMBER 10104111545

U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

DREDGE PRISM (DMU 5) - STA. 16+00 TO 21+00

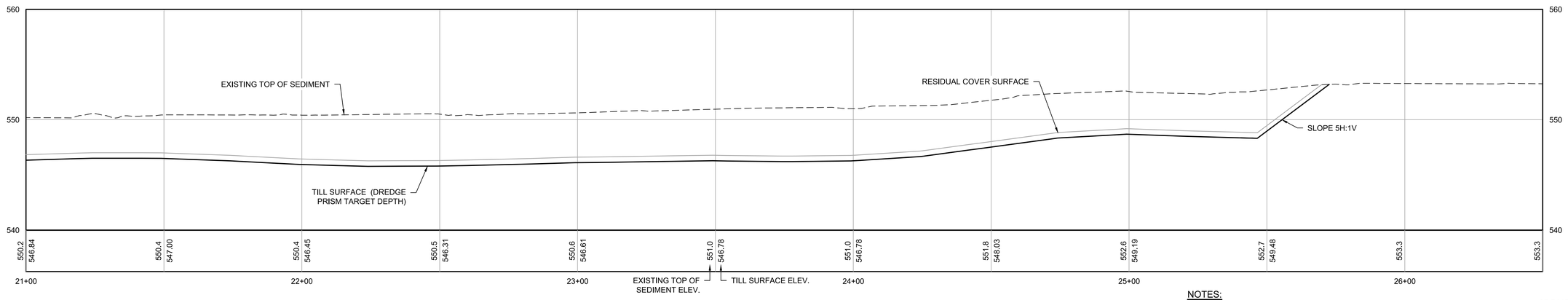
BARR PROJECT # 1316101105
DWG # C-24
REV # A



1 - PLAN: DREDGE PRISM (DMU 6)

0 20 40
SCALE IN FEET

N



PROFILE LEGEND

EXISTING TOP OF SEDIMENT
TOP OF TILL SURFACE
COVER SURFACE

2 - PROFILE: DREDGE PRISM (DMU 6)

0 20 40
HORZ. SCALE IN FEET

0 5 10
VERT. SCALE IN FEET

NOTES:

1. 90TH PERCENTILE WATER SURFACE ELEVATION = 577.42
2. PROFILE SHOWN REPRESENTS ALIGNMENT SHOWN IN PLAN.

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U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

DREDGE PRISM (DMU 6) - STA. 21+00 TO 26+00

BARR PROJECT # 1316101105
DWG # C-25
REV # A

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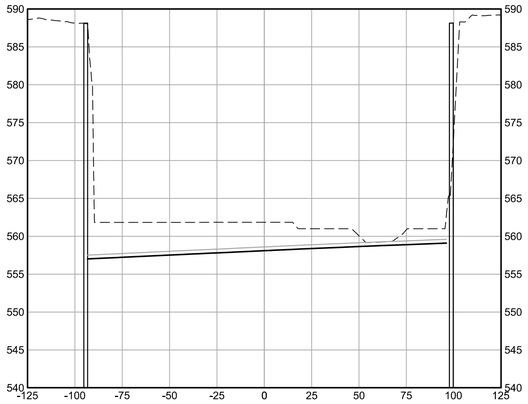
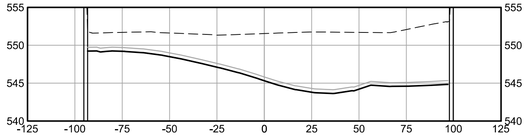
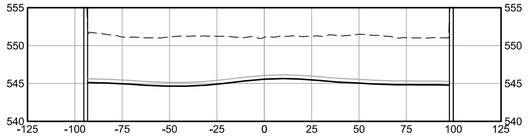


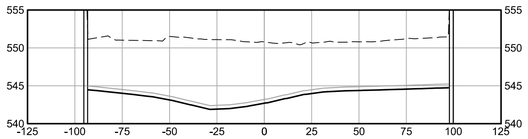
1 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 1+00



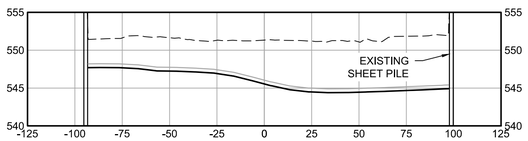
2 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 2+00



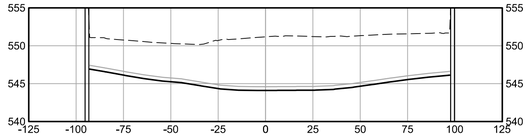
3 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 3+00



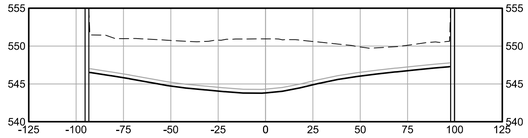
4 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 4+00



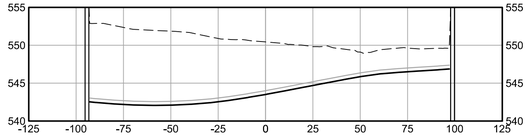
5 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 5+00



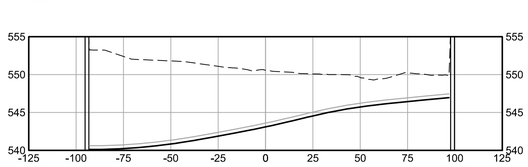
6 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 6+00



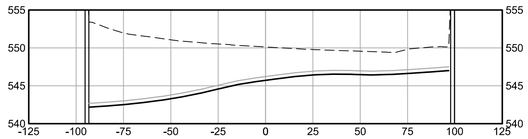
7 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 7+00



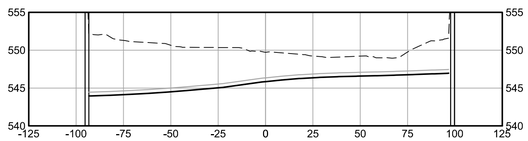
8 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 8+00



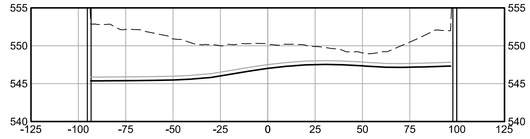
9 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 9+00



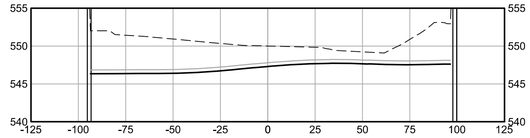
10 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 10+00



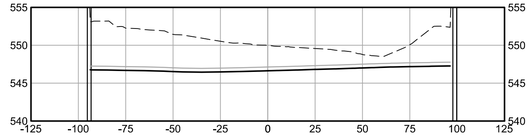
11 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 11+00



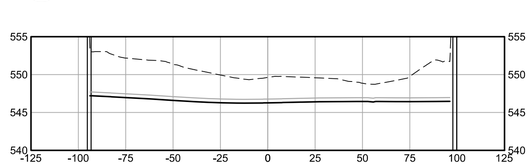
12 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 12+00



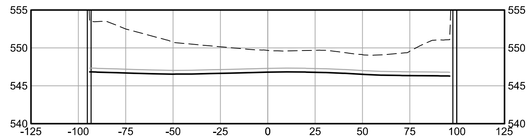
13 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 13+00



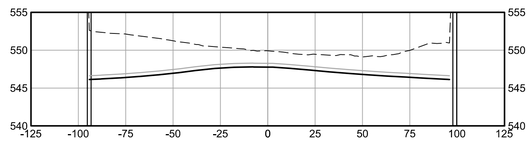
14 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 14+00



15 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 15+00



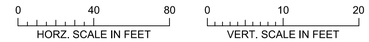
16 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 16+00



17 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 17+00

LEGEND

- EXISTING TOP OF SEDIMENT
- TOP OF TILL SURFACE
- COVER SURFACE



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SUITE 200
MINNEAPOLIS, MN 55435

PH: 1-800-632-2277
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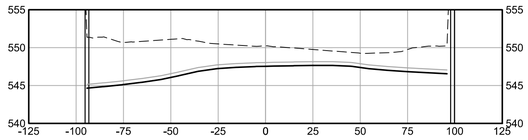
MINNESOTA ENGINEERING FIRM
NUMBER 10104111545

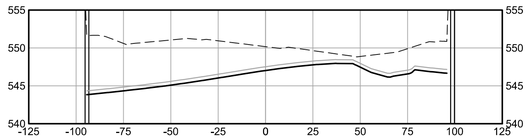
U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT
DREDGE PRISM CROSS SECTIONS
STATION 1+00 THRU 17+00

BARR PROJECT # 1316101105
DWG # C-26
REV # A



18 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 18+00



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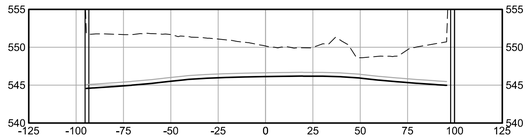

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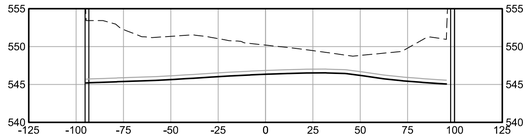
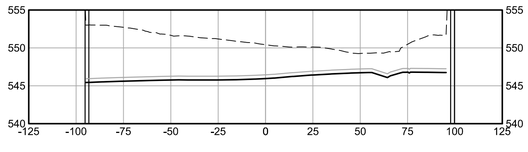
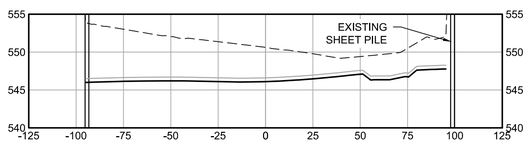


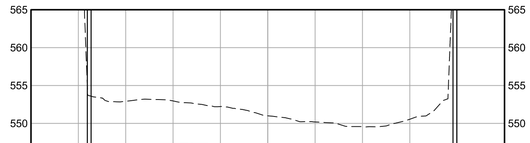
21 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 21+00



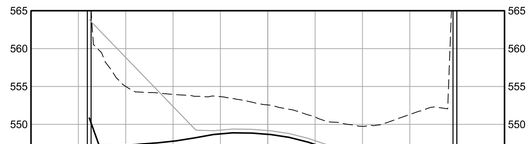
22 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 22+00



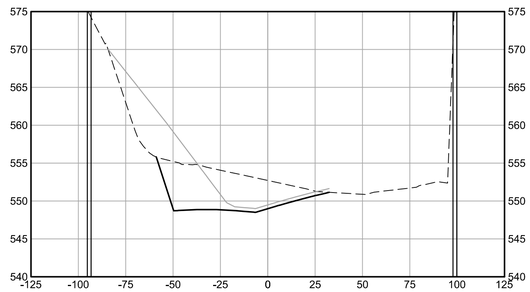
23 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 23+00



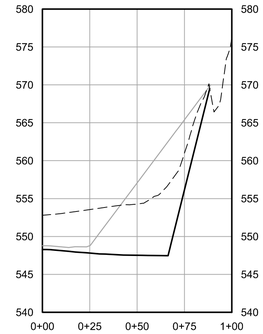
24 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 24+00



25 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 25+00



26 - SECTION: DREDGE AND RESIDUAL COVER AT STA. 25+50



27 - C-25 SECTION: DREDGE AND RESIDUAL COVER AT SLIP INLET

LEGEND

- EXISTING TOP OF SEDIMENT
- TOP OF TILL SURFACE
- COVER SURFACE

0 40 80
HORZ. SCALE IN FEET

0 10 20
VERT. SCALE IN FEET

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SUITE 200
MINNEAPOLIS, MN 55435

PH: 1-800-632-2277
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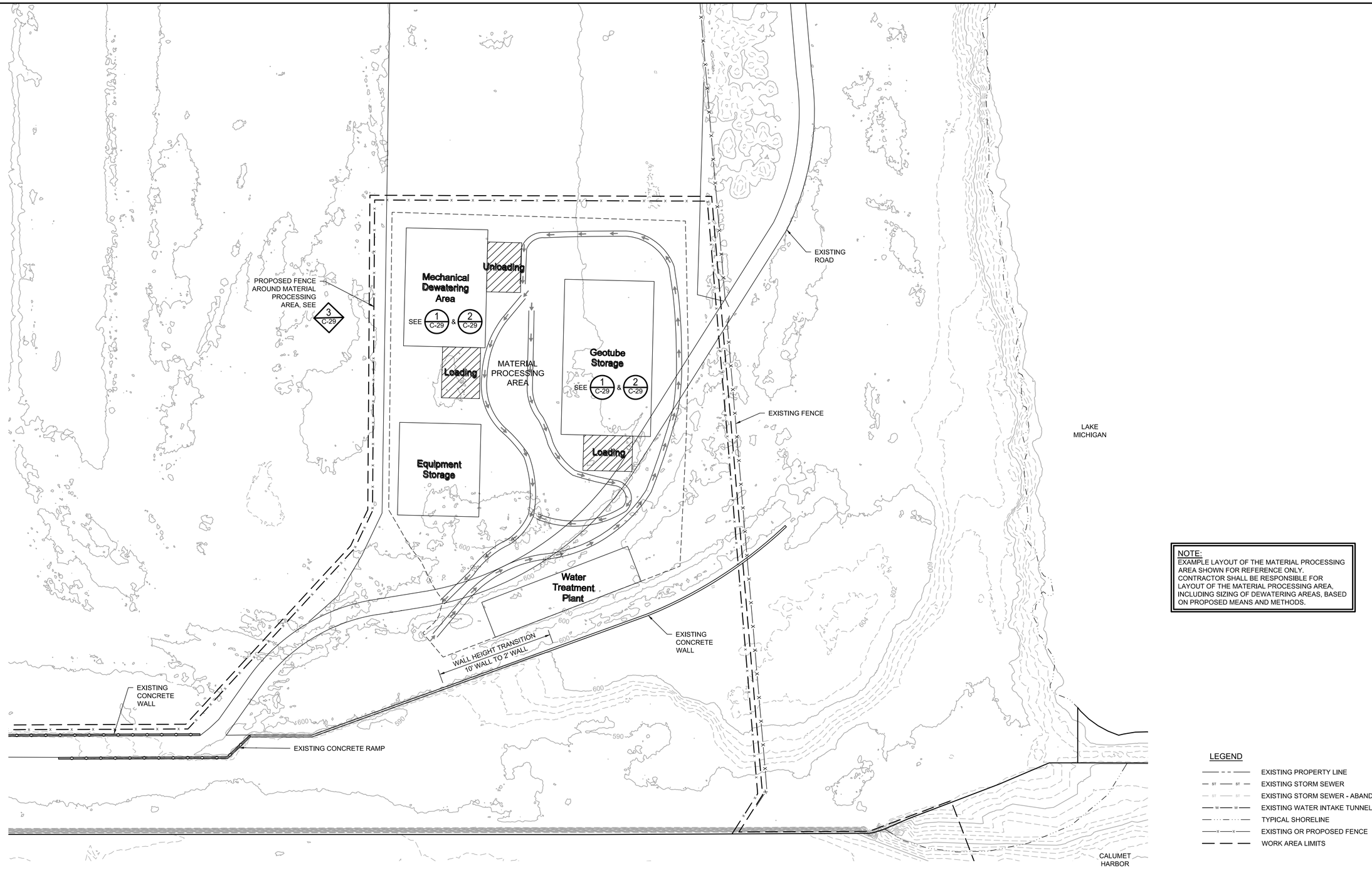
MINNESOTA ENGINEERING FIRM
NUMBER 10104111545

U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT
DREDGE PRISM CROSS SECTIONS
STATION 18+00 THRU 26+00

BARR PROJECT # 1316101105
DWG # C-27
REV # A



NOTE:
EXAMPLE LAYOUT OF THE MATERIAL PROCESSING AREA SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF THE MATERIAL PROCESSING AREA, INCLUDING SIZING OF DEWATERING AREAS, BASED ON PROPOSED MEANS AND METHODS.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING STORM SEWER - ABANDONED
- EXISTING WATER INTAKE TUNNEL
- TYPICAL SHORELINE
- EXISTING OR PROPOSED FENCE
- WORK AREA LIMITS

1 - PLAN: MATERIAL PROCESSING AREA

0 50 100
SCALE IN FEET

ISSUED FOR BID / PERMITTING
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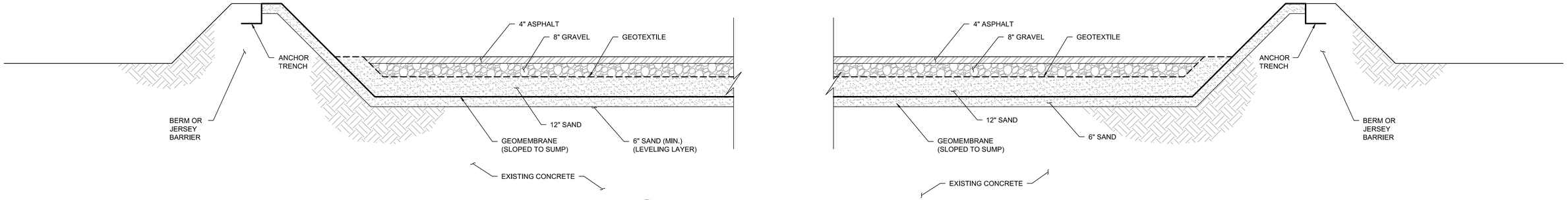
U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

EXAMPLE MATERIAL PROCESSING AREA LAYOUT

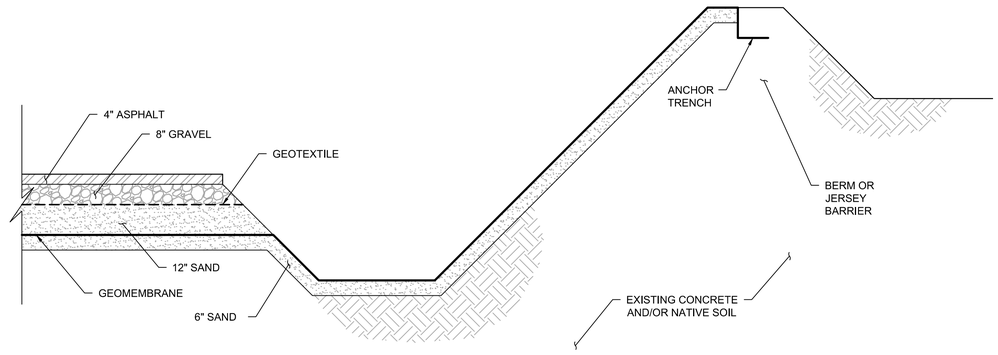
BARR PROJECT # 1316101105
DWG # C-28
REV # A



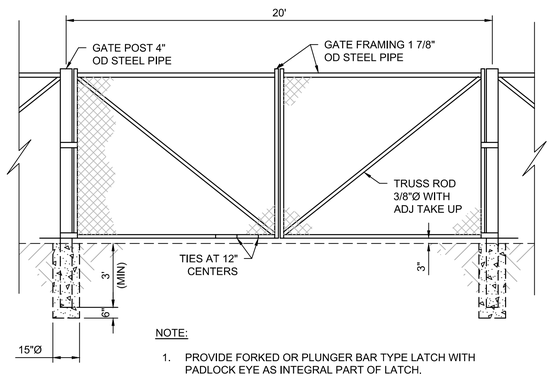
1 C-28 SECTION: MATERIAL PROCESSING AREA
NOT TO SCALE

NOTES:

1. SECTION DESIGN IS PROPOSED FOR BIDDING PURPOSES. CONTRACTOR MAY SUBMIT AN ADDITIONAL ALTERNATIVE SECTION DESIGN FOR ENGINEER'S APPROVAL.



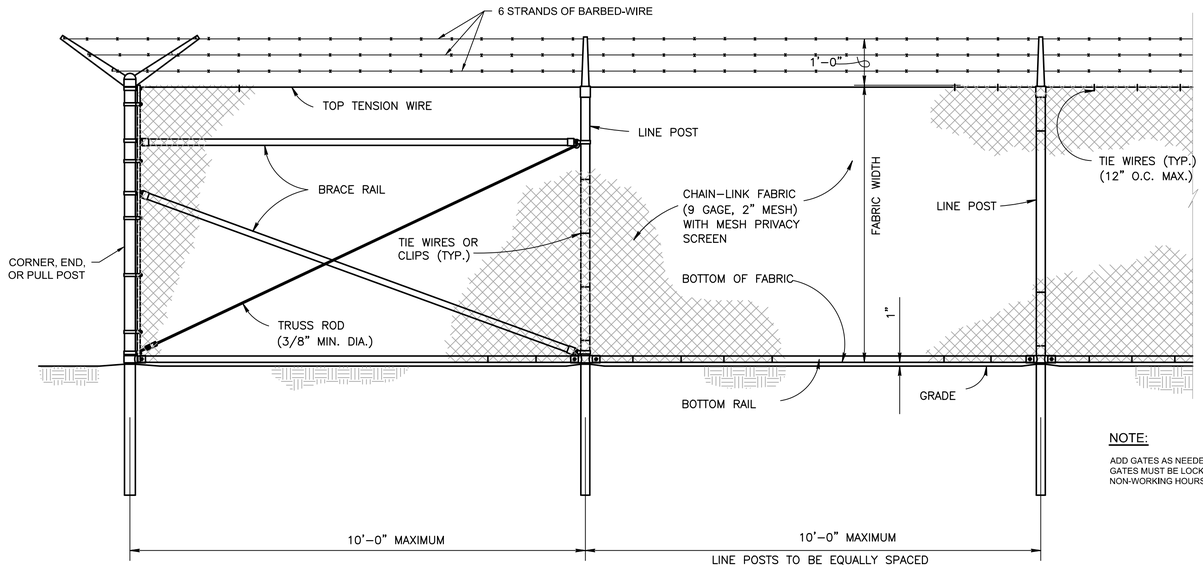
2 C-28 SECTION: MATERIAL PROCESSING AREA SUMP
NOT TO SCALE



NOTE:

1. PROVIDE FORKED OR PLUNGER BAR TYPE LATCH WITH PADLOCK EYE AS INTEGRAL PART OF LATCH.

4 C-05 DETAIL: SECURITY FENCE SWING ENTRANCE GATE (TYP)
NOT TO SCALE



NOTE:

ADD GATES AS NEEDED FOR ACCESS. GATES MUST BE LOCKED DURING NON-WORKING HOURS.

3 C-28 DETAIL: SECURITY FENCE

ISSUED FOR BID / PERMITTING
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U. S. STEEL
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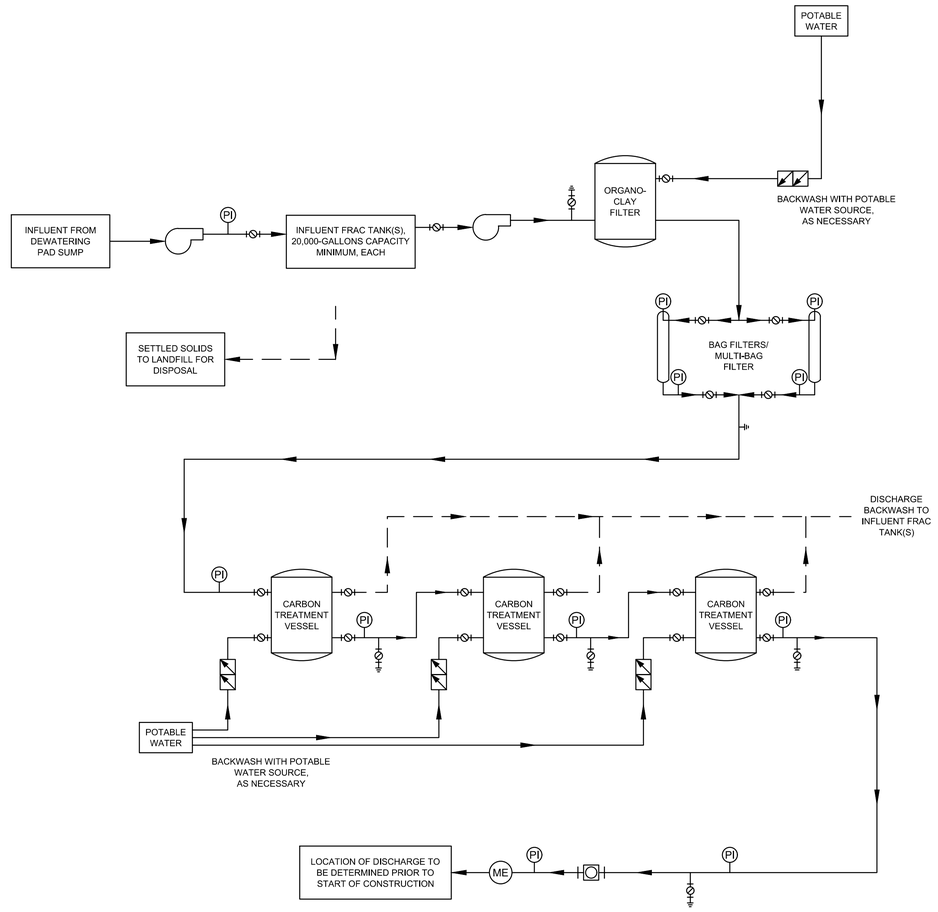
NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT
DEWATERING AND MATERIAL PROCESSING AREA SECTIONS AND DETAILS

BARR PROJECT # 1316101105
DWG # C-29
REV # A

Table of Loading Estimates and Effluent Limits[3]

Chemical	Estimated Maximum Influent Concentration - Elutriate (Mechanical Dredging)[1]	Estimated Maximum Influent Concentration - Filtrate (Hydraulic Dredging)[1]	DRET Test (Concentrations in Water Within Work Area) Raw Water[2]	Preliminary Predicted Effluent Limits (Most Stringent Regulatory Values)
General Parameters [mg/L unless otherwise noted]				
pH (su)	--	--	--	6.5-9
Turbidity (NTU)	--	--	--	
Dissolved Oxygen	--	--	--	>5
Total Suspended Solids	--	--	--	15.00
Total Dissolved Solids	--	< --	--	1000.00
Carbon, total organic	60	10	1.80	--
Hardness, as CaCO3	1800	200	133.00	--
Oil and Grease	190	7	2.40	0.10
Metals (dissolved) [µg/L]				
Antimony	16.0	< 1.8	--	--
Arsenic	--	7.3	--	148.00
Barium	930.0	76.0	--	--
Beryllium	0.5	< 0.2	--	--
Cadmium	2.3	< 0.8	--	1.27
Chromium	130.0	3.5	--	--
Chromium, hexavalent	2.9	< 2.9	--	11.00
Chromium, trivalent	130.0	3.2	--	93.61
Cobalt	20.0	0.5	--	--
Copper	200.0	8.7	--	11.43
Iron	230000.0	3600.0	--	300.00
Lead	520.0	29.0	--	6.92
Nickel	220.0	4.2	--	6.35
Selenium	4.7	< 3.2	--	5.00
Silver	< 25.0	< 2.5	--	--
Thallium	< 2.6	< 2.6	--	--
Tin	23.0	< 3.2	--	--
Vanadium	35.0	1.6	--	--
Zinc	1100.0	59.0	--	38.09
Metals (total) [µg/L]				
Antimony	10.0	< 1.8	0.18	320.00
Arsenic	--	6.7	1.08	50.00
Barium	910.0	82.0	21.80	1000.00
Beryllium	< 0.2	< 0.2	< 0.01	--
Cadmium	< 0.8	< 0.8	< 0.01	150.00
Calcium	550000.0	26000.0	34600.00	--
Chromium	38.0	2.7	0.21	1000.00
Chromium, hexavalent	< 2.9	< 2.9	--	11.00
Chromium, trivalent	38.0	< 2.9	--	--
Cobalt	12.0	< 0.4	0.04	--
Copper	73.0	< 4.6	0.47	500.00
Iron	140000.0	3000.0	37.70	2000.00
Lead	200.0	27.0	0.12	50.00
Magnesium	74000.0	19000.0	12120.00	--
Mercury	66.0	0.0330	< 0.0006	--
Nickel	160.0	4.0	0.3400	1000.00
Selenium	6.7	< 3.2	< 0.2000	10.00
Silver	< 25.0	< 2.5	< 0.0090	5.00
Thallium	< 2.6	< 2.6	0.0170	3.00
Tin	8.5	< 3.2	< 0.0400	--
Vanadium	11.0	1.6	0.5400	--
Zinc	420.0	50.0	0.6000	1000.00
SVOCS [µg/L]				
1-Methylnaphthalene	0.340	0.160	< 0.00380	12.00
2-Methylnaphthalene	0.220	0.170	0.00330	12.00
Acenaphthene	< 0.096	< 0.040	< 0.00470	62.00
Acenaphthylene	< 0.062	< 0.026	< 0.00370	15.00
Anthracene	< 0.096	< 0.040	< 0.00390	0.53
Benz(a)anthracene	0.250	0.084	< 0.00280	--
Benzo(a)pyrene	0.260	0.085	< 0.00460	--
Benzo(b)fluoranthene	0.360	0.150	< 0.00440	--
Benzo(g,h,i)perylene	< 0.290	< 0.120	< 0.00310	--
Benzo(k)fluoranthene	0.330	0.130	< 0.00320	--
Chrysene	0.570	0.180	< 0.00370	--
Dibenz(a,h)anthracene	< 0.340	< 0.140	< 0.00270	--
Fluoranthene	0.400	0.230	< 0.01100	1.80
Fluorene	< 0.094	0.065	< 0.00410	16.00
Indeno(1,2,3-cd)pyrene	< 0.340	< 0.140	< 0.00280	--
Naphthalene	< 0.084	0.210	< 0.02600	68.00
Phenanthrene	< 0.058	0.230	< 0.00540	3.70
Pyrene	0.620	0.300	< 0.00570	3500.00
VOCS [µg/L]				
Benzene	< 4.500	< 0.450	--	12.00
Ethyl benzene	< 3.400	< 0.340	--	14.00
Toluene	< 4.500	< 0.450	--	51.00
Xylene, m & p	< 8.100	< 0.810	--	--
Xylene, o	< 3.100	< 0.310	--	--
Xylene, total	< 8.100	< 0.810	--	360.00
PCBs [pg/L]				
PCB-105	12600	71000	--	26.00
PCB-106/118	28500	180000	--	26.00
PCB-114	649	4150	--	26.00
PCB-123	551	3160	--	26.00
PCB-126	37.9	207	--	26.00
PCB-156	3220	21800	--	26.00
PCB-157	723	5030	--	26.00
PCB-167	1100	7870	--	26.00
PCB-168	14.4	56.4	--	26.00
PCB-189	98.7	697	--	26.00
PCB-77	274	1380	--	26.00
PCB-81	17.3	90.1	--	26.00

1 Estimated maximum influent concentration based on testing study completed in September 2021
2 Estimated maximum influent concentration based on testing study completed in September 2023
3 Final effluent limits will be specified upon of a final discharge permit



1 — PROCESS FLOW DIAGRAM: CONCEPTUAL WATER TREATMENT SYSTEM
NOT TO SCALE

NOTES:

1. TYPE AND NUMBER OF COMPONENTS MAY VARY DEPENDING ON TREATMENT NEEDS.
2. PROCESS FLOW DIAGRAM SHOWN HERE IS AN EXAMPLE OF BASIC SYSTEM COMPONENTS TO BE SUPPLIED BY CONTRACTOR. SEE SPECIFICATION SECTION 35 20 23.73 FOR SPECIFIC REQUIREMENTS. CONTRACTOR MAY PROPOSE DIFFERENT CONFIGURATIONS SUBJECT TO REVIEW AND APPROVAL BY ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR OPERATING THE SYSTEM TO MEET THE PERMIT REQUIREMENTS.
3. PROVIDE N+1 REDUNDANCY FOR ANY EQUIPMENT AND UNIT PROCESSES THAT WILL REQUIRE TREATMENT TO STOP FOR REGULAR MAINTENANCE.

ISSUED FOR BID / PERMITTING
NOT FOR CONSTRUCTION

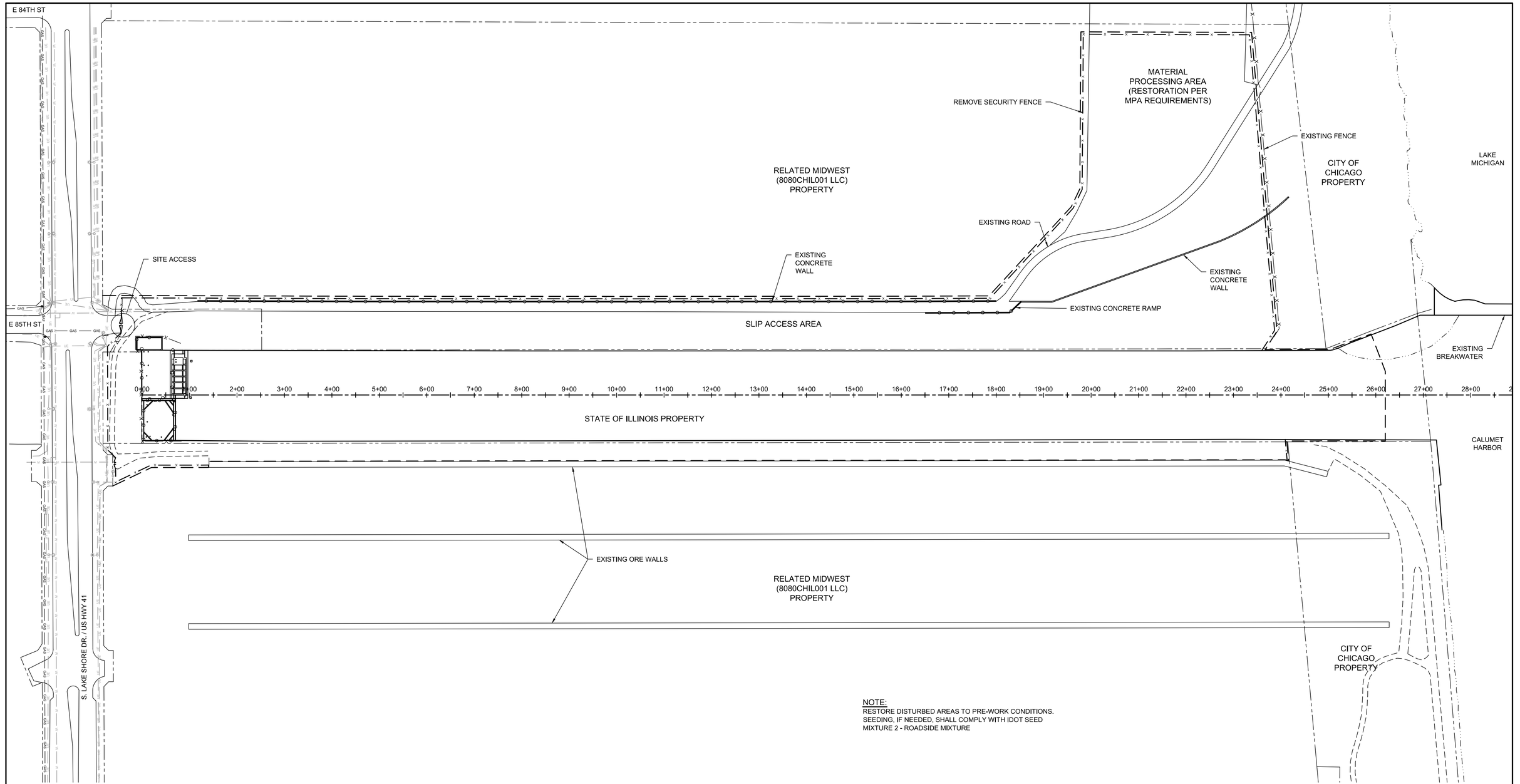
#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
A	MJJ	KPW	MJE	04/29/2026	ISSUED FOR BID / PERMITTING

BARR
BARR ENGINEERING CO.
4300 MARKETPOINTE DRIVE
SUITE 200
MINNEAPOLIS, MN 55435
PH: 1-800-632-2277
WWW.BARR.COM
MINNESOTA ENGINEERING FIRM
NUMBER 10104111545

U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT
CONCEPTUAL WATER TREATMENT SYSTEM
PROCESS FLOW DIAGRAM

BARR PROJECT # 1316101105
DWG # C-30
REV # A



NOTE:
RESTORE DISTURBED AREAS TO PRE-WORK CONDITIONS. SEEDING, IF NEEDED, SHALL COMPLY WITH IDOT SEED MIXTURE 2 - ROADSIDE MIXTURE

LEGEND

- EXISTING PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING STORM SEWER - ABANDONED
- EXISTING WATER INTAKE TUNNEL
- EXISTING FENCE
- TYPICAL SHORELINE
- WORK AREA LIMITS
- SECURITY FENCE

1 - PLAN: RESTORATION

0 100 200
SCALE IN FEET

ISSUED FOR BID / PERMITTING
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
A	MJJ	KPW	MJE	04/29/2026	ISSUED FOR BID / PERMITTING

BARR
BARR ENGINEERING CO.
4300 MARKETPOINTE DRIVE
SUITE 200
MINNEAPOLIS, MN 55435
PH: 1-800-632-2277
WWW.BARR.COM
MINNESOTA ENGINEERING FIRM
NUMBER 10104111545

U. S. STEEL
CHICAGO, ILLINOIS

NORTH VESSEL SLIP SEDIMENT REMEDIATION
FORMER U. S. STEEL SOUTH WORKS PLANT

RESTORATION PLAN

BARR PROJECT # 1316101105
DWG # C-31
REV # A

Appendix B

Threatened and Endangered Species Review

Sensitive Species Review - Illinois
Project Name: U.S. Steel South Works **T38N R15E S32**

Federal Review (IPaC)

County	Common Name	Scientific Name	Federal Endangered Species Act Status	Habitat	Decision	Justification
Cook	Bald Eagle	*Haliaeetus leucocephalus*	Protected by Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act	Nests in mature trees near bodies of water.	No Effect	Minimal mature tree cover is located within the project vicinity and the project area is located in an area subject to a high degree of human disturbance. Bald eagles are unlikely to nest within 660 feet of the project site and impacts to this species are not anticipated.
	Migratory Birds	*NA*	Protected by Migratory Bird Treaty Act	Migratory birds nest in a variety of habitats including woody vegetation, on the ground, and on manmade structures.	May Affect	A nest survey for federally protected migratory birds will be conducted for vegetation clearing (mowing, brushing, limbing, tree/shrub removal, and grading of vegetated surfaces) conducted between April 1 to July 15
	Piping Plover	*Charadrius melodus*	Endangered	Associated with fairly wide, sandy, sparsely or unvegetated beaches when nesting. Outside breeding season birds may be found on beaches, lagoon edges or areas of rubble. Lake County is designated critical habitat.	No Effect	The project site is not located in the vicinity of sandy, sparsely vegetated, or unvegetated beach habitat. The project occurs predominantly within the North Vessel Slip of Calumet Harbor with adjacent workspace and staging located on paved/concrete areas, unvegetated areas, and maintained uplands of the former U.S. Steel South Works Plant. Impacts to this species are not anticipated.
	Rufa Red Knot	*Calidris canutus rufa*	Threatened	During migration, utilizes coastal zones, generally coastal marine and estuarine habitats, with large areas of exposed intertidal sediments. Prefer muddy or sandy coastal areas, specifically the mouths of bays and estuaries and tidal flats/inlets. Nests near wetlands and lakes in the Canadian arctic.	No Effect	Species nests in the Canadian arctic. There are no suitable muddy or sandy coastal areas within the project vicinity that would serve as stopover habitat. The project occurs predominantly within the North Vessel Slip of Calumet Harbor with adjacent workspace and staging located on paved/concrete areas, unvegetated areas, and maintained uplands of the former U.S. Steel South Works Plant. Impacts to this species are not anticipated.
	Eastern Massasauga	*Sistrurus catenatus*	Threatened	During spring, Massasaugas use open shallow wetlands or shrub swamps. They can be found in crayfish towers or small animal burrows which are adjacent to drier upland open shrub forest sites. During summer, Massasaugas move upland to drier areas. Look for them "sunning" in open fields, grassy meadows or farmed sites.	No Effect	The project occurs predominantly within the North Vessel Slip of Calumet Harbor with adjacent workspace and staging located on paved/concrete areas, unvegetated areas, and maintained uplands of the former U.S. Steel South Works Plant that are unsuitable for Eastern Massasauga Rattlesnake. There are no suitable wetland or riparian areas located within the project vicinity that EMR would occupy.

	Hine's Emerald Dragonfly	*Somatochlora hineana*	Endangered	Hine's emerald dragonflies use a variety of habitats - most are wetland systems. The dragonfly breeds in marshes and sedge meadows that are underlain by dolomite bedrock and fed by calcareous groundwater seeps. Larvae are aquatic, living in rivulets and seepage areas within wetland systems for 3 to 5 years, eating smaller insects and shedding their skin many times. Adults use wetlands as well as a mixture of adjacent uplands.	No Effect	No suitable groundwater seeps, open water features, or calcareous wetland features are present. The project occurs predominantly within the North Vessel Slip of Calumet Harbor with adjacent workspace and staging located on paved/concrete areas, unvegetated areas, and maintained uplands of the former U.S. Steel South Works Plant. Impacts to this species are not anticipated.
	Monarch Butterfly	*Danaus plexippus*	Proposed Threatened	Dependent upon milkweed to complete it's life cycle.	No Effect	No suitable habitat for milkweed is present and ground disturbance outside the Noth Vessel Slip is not anticipated. The project occurs predominantly within the North Vessel Slip of Calumet Harbor with adjacent workspace and staging located on paved/concrete areas, unvegetated areas, and maintained uplands of the former U.S. Steel South Works Plant. Impacts to this species are not anticipated.
	Leafy Prairie-Clover	*Dalea foliosa*	Endangered	This plant is found in prairie remnants along the Des Plains River in Illinois, in thin soils over limestone substrate. Habitats are restricted to mesic dolomite prairies and rocky riverbanks.	No Effect	No suitable prairie habitat is present. The project occurs predominantly within the North Vessel Slip of Calumet Harbor with adjacent workspace and staging located on paved/concrete areas, unvegetated areas, and maintained uplands of the former U.S. Steel South Works Plant. Impacts to this species are not anticipated.

State Review (EcoCAT)

County	Common Name	Scientific Name	IL Status	Habitat	Decision	Justification
Cook	The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory Sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.					

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Service Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800

In Reply Refer To: 10/15/2025 20:51:33 UTC
Project Code: 2026-0005192
Project Name: U.S. South Steel Works

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:

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/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (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. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please 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. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the 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 IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) 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 NLEB 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 NLEB 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.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

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:

Chicago Ecological Service Field Office
1511 47th Ave
Moline, IL 61265-7022

PROJECT SUMMARY

Project Code: 2026-0005192
Project Name: U.S. South Steel Works
Project Type: Pipeline - Onshore - Maintenance / Modification - Below Ground
Project Description: The project would consist of dredging sediment from the North Vessel Slip (North Slip) in order to remove chemically impacted sediment that poses a risk to human health and aquatic life.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.74190945,-87.53184955925414,14z

Counties: Cook County, Illinois

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.

---

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.

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. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Endangered
Rufa Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

INSECTS

NAME	STATUS
Hine's Emerald Dragonfly *Somatochlora hineana* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7877	Endangered
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Leafy Prairie-clover *Dalea foliosa* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5498	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Shaughn Barnett
Address: 3005 Boardwalk Drive
City: Ann Arbor
State: MI
Zip: 48108
Email
Phone:

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

EcoCAT
Ecological Compliance Assessment Tool

Applicant: Shaughn Barnett
Contact: Shaughn Barnett
Address: 3005 Boardwalk Avenue
Ann Arbor, MI 48108

Project: U.S. Steel South Works Project
Address: U.S. Steel South Works Plant, Chicago

IDNR Project Number: 2606395
Date: 10/14/2025

Description: The project would consist of dredging sediment from the North Vessel Slip (North Slip) in order to remove chemically impacted sediment that poses a risk to human health and aquatic life.

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

Consultation is terminated. This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary. Termination does not imply IDNR's authorization or endorsement.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Cook

Township, Range, Section:
38N, 15E, 32

IL Department of Natural Resources Contact
Isabella Newingham

Division of Ecosystems & Environment

Government Jurisdiction
City of Chicago Department of Buildings
Unknown
2045 W Washington Blvd
Chicago, Illinois 60612

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

EcoCAT
Ecological Compliance Assessment Tool

EcoCAT Receipt

Project Code 2606395

APPLICANT	DATE
Shaughn Barnett Shaughn Barnett 3005 Boardwalk Avenue Ann Arbor, MI 48108	10/14/2025

DESCRIPTION	FEE	CONVENIENCE FEE	TOTAL PAID
EcoCAT Consultation	$ 125.00	$ 2.81	$ 127.81

TOTAL PAID $ 127.81

Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702

Appendix C

Cultural Resources Desktop Review Technical Memorandum

Technical Memorandum

To: Bethany Rosemore, U. S. Steel
From: Justin Bracken, Barr Engineering Co.
Subject: Cultural Resources Desktop Review
Date: December 10, 2025
Project: North Vessel Slip, Former U. S. Steel South Works Plant Chicago, Illinois
c: Jamie Bankston, Mike Ellis, Amy Wolcott, and Veronica Parsell, Barr Engineering Co.

This memorandum (memo) summarizes known cultural resources in and near the North Vessel Slip at the former U. S. Steel South Works Plant in Chicago, Illinois.

1 Introduction

The project would involve dredging sediment from the North Vessel Slip (North Slip) to remove chemically impacted sediment that poses a risk to human health and aquatic life. The North Slip is a component of the former U. S. Steel South Works Plant (South Works), located in the Calumet Harbor of Lake Michigan in southern Chicago, Illinois. The former steel mill operated from 1882 to 1992 and most of the former steel mill structures have been demolished (IEPA 2001). The North Slip bisects the former steel mill and was used to moor barges for off-loading raw materials and loading product during the former steel mill's operation. After the steel mill ceased operations, the North Slip was leased for miscellaneous barge activity.

The North Slip is a surface water feature formed by vertical steel sheet pile walls and surrounding dock wall structures and supports. The underwater land of the North Slip (i.e., land beneath the surface water) is owned by the State of Illinois. The land and features surrounding the North Slip were sold to 8080CHIL001, LLC in September 2025, except for the land closest to the mouth of the slip, which is owned by the City of Chicago. The North Slip is located in Section 32, Township 38N, Range 15E, on the Lake Calumet, Illinois-Indiana 7.5' USGS topographic quadrangle (1997) (Figure 1).

The North Slip measures approximately 2,750 feet long, 200 feet wide, and 38 feet deep (top of pier to sediment). The western end of the North Slip includes remnant basin foundations and sewer outfalls. All outfalls previously discharging to the North Slip were abandoned prior to termination of the U. S. Steel NPDES permit (IL 0002691) by the Illinois Environmental Protection Agency (IEPA) on July 30, 2004. To support potential redevelopment, the City of Chicago completed significant road improvements to Lakeshore Drive, along with storm sewer improvements near the North Slip. These improvements included a stormwater treatment structure and storm sewer junction chamber vaults that discharge into the North Slip. The only known ongoing discharges to the North Slip are from the City of Chicago storm sewers.

2 Project Overview

In 2017, the U. S. Coast Guard identified a sheen on the surface water in the western part of the North Slip. Following this discovery, investigations in 2017 and 2020 were conducted to evaluate environmental conditions and possible sheen sources within the North Slip (Barr Engineering, Co. 2025a: 2). The investigations identified an oily black silt containing concentrations of chemicals exceeding risk-based screening values, which include multiple metals, polycyclic aromatic hydrocarbons (PAHs), total

petroleum hydrocarbons (TPH), and polychlorinated biphenyls (PCBs). This impacted black silt was identified as the source of the surface water sheen, where gas pockets containing petroleum hydrocarbons are generated within the sediment and released to the surface water through a microbial process known as ebullition.

In order to address environmental impacts to surface water (i.e., sheen) as well as risks posed by chemicals within the sediment to human health and aquatic life, a remedial action plan will be prepared to propose dredging sediments containing unacceptable concentrations of chemicals from the North Slip. Due to regulatory authority, the remedial action is regulated separately by the United States Environmental Protection Agency (USEPA), which has authority over reviewing and approving remedial objectives and actions concerning PCBs, and the Illinois Environmental Protection Agency (IEPA), which authorizes remedial objectives and actions for all other chemicals. The USEPA required cleanup plan (Barr Engineering Co. 2025b: 30) and the IEPA required remedial action plan (to be submitted) will contain the same proposed cleanup/remedial action: removing debris and dredging impacted sediments, then placing a residual cover of sand over the area that was dredged to manage residual sediments that remain (Barr Engineering Co. 2025b: vii). Select demolition of and/or modifications to structures at the head of the North Slip, which are likely more than fifty years old, is being evaluated as a means of facilitating the dredging activity.

3 Cultural Resources Desktop Review

The objective of the desktop review is to identify and evaluate previously documented cultural resources present within or adjacent to the North Slip (the project area), as well as assess the potential for the project area to contain undocumented cultural resources.

The desktop review was directed towards identifying known, previously recorded archaeological sites, historic architectural resources, and other cultural resources. Barr reviewed the Illinois Inventory of Archaeological Sites (IIAS) for archaeological site location information. The Illinois Historic and Architectural Resources Geographic Information System (HARGIS) was reviewed for information pertaining to historic architectural resources. Additionally, in 2019, divers performed an underwater and sector scan of the slip (J. F. Brennan and Company, Inc. 2019). The Underwater Inspection Report produced as a result of this investigation was reviewed for potential archaeological and historic architectural resources. Barr focused on previously recorded resources within 1 mile (mi) of the project, and consulted the following resources:

- National Historic Landmark list;
- National Register of Historic Places (NRHP) database;
- Archaeological site files;
- Historic architectural inventory files;
- Historic cemeteries;
- Historic maps and aerial photographs;
- The Underwater Inspection Report.

Reviewed records indicate that no previously recorded archaeological sites or historic architecture resources have been recorded within the project area. Within 1 mi of the project area, three archaeological sites and one historic cemetery are documented (Figure 2). This includes two sites that are adjacent to the project area. No previously documented National Historic Landmarks or resources listed in the National Register of Historic Places (NRHP) public database are located in or near the project area. A review of available historic maps and aerials indicates that no buildings or structures predate the slip. The Underwater Inspection Report indicated the presence of a sunken sailboat atop the sediment, near the southern wall of the slip (Brennan 2019: 4). The boat has been determined to be modern and therefore not a cultural resource (see Section 3.8).

3.1 National Historic Landmarks

No National Historic Landmarks are located within the Project area or within 1 mi of the Project area.

3.2 National Register of Historic Places Database

Research indicates no NRHP-listed or eligible resources are located within the Project area or a 1-mi buffer. Survey 12683, completed by Midwest Archaeological Research Services, Inc (See Section 3.6 for additional information), indicates that two previously documented sites adjacent to the project area (11CK944 and 11CK945) are not likely individually eligible for the NRHP, but may contribute to the significance of South Works as a larger, NRHP-eligible complex (Bird and Tolmie 2000). This is speculative, however, as South Works has not been documented as a cultural resource or evaluated for NRHP eligibility.

3.3 Archaeological Site Files

Three archaeological sites have been documented outside of the project area but within the 1-mi buffer: 11CK942, 11CK944, and 11CK945 (Figure 2). Site 11CK942 lies exactly 1 mi south of the southern edge of the project area. It consists of a brick machine shed and office building constructed after 1900 and has not been formally evaluated for NRHP eligibility.

The other two sites are located adjacent to the project area and within the South Works property. Site 11CK944 runs along the southern edge of the North Slip for nearly its entirety, measures 120m x 780m, and is composed of post-1900 steel ore bins belonging to South Works. Site 11CK945 sits immediately to the south of 11CK944 and was a power plant located within the South Works property. These two sites have not been formally evaluated for NRHP eligibility. However, as indicated above, the two sites, while likely not individually eligible for the NRHP, may contribute to the historic significance of South Works.

3.4 Historic Architectural Inventory Files

A review of HARGIS indicates that no documented historic architectural resources are within the project area or within 1 mile of the project.

3.5 Historic Cemeteries

No cemeteries or burial sites are located within the project area boundaries. Within a 1-mi buffer of the project area, one historic cemetery is present (Figure 2). Located approximately 0.95 mi south of the SE corner of the project area, the Andreas von Zirngibl Grave is a single-grave cemetery with Cemetery ID 9033. Zirnbigl was a veteran of the Battle of Waterloo, who died in 1855 and was buried in that location on what was at the time his own land (Dunnell 2018).

3.6 Previous Cultural Resource Investigations

Data from the IIAS indicates that the project area has not been previously surveyed for cultural resources (Figure 2). Within a 1-mile buffer of the project area, four surveys have been conducted: 7641, 10634, 12683, and 13863, along with ISAS2738 (ITARP 05073), an addendum to 13863.

Survey 7641 was a 1996 Phase I Investigation of Shaft Locations in the Calumet River Tunnel System performed by Archaeological Research, Inc. One Drop Shaft, CDS-36, falls within the 1-mi buffer, approximately 0.7 mi south of the project area, and consisted of fill (Archaeological Research, Inc. 1996).

Survey 10634 was conducted in 2000 by the Illinois Transportation Archaeological Research Program (ITARP) to prepare for the improvement and construction of South Harbor Drive and Industrial Boulevard. Its northern extent came within approximately 0.25 mi of the project area, and no archaeological material was located (ITARP 2000).

Survey 12683 was a 2000 report by Midwest Archaeological Research Services, Inc. for Whitecap Energy System. The survey covered the areas immediately north, south, and west of the project area and identified Sites 11CK942, 11CK944, and 11CK945, along with others outside the project area and within a 1-mile buffer (Bird and Tolmie 2000).

Survey 13863 was conducted in 2002 by ITARP along a north-south line to the west of the Project area, with the nearest point to the project area being 0.08 miles away. No new cultural resources were identified during the survey, nor in the follow-up survey represented by the addendum ISAS2738 (ITARP 2002, 2005).

3.7 Historic Maps and Aerials

Eight historic maps and eleven historic aerial photographs were referenced to understand the historic use of the project area through time (BLM 1850; Cook County Government 1998, 2003, and 2024; Illinois State Geological Survey 1938; USGS 1893, 1900, 1901, 1929, 1952, 1953, 1964, 1978, 1983, 1988, 1991, 1992, 1997, 2002).

The earliest map to depict the project area is from the General Land Office and dates to 1850 (Figure 3). Here, the outline of the present North Slip is shown to be fully in the waters of Lake Michigan, its inland edge just off the natural shoreline. Likewise, a 1893 USGS map shows the project area underwater, as the infilling that created the slip has not yet occurred (Figure 4). Road and rail construction nearby has taken place in earnest; however, with each extending right to the shoreline adjacent to the project area. Some structures have been built within the blocks formed by those roads. Additionally, piers have been constructed at the mouth of the Calumet River immediately south of the project area, extending into the lake from the shoreline at each bank.

By 1900, the North Slip is first visible, with the shoreline appearing to have been constructed and expanded eastward into the lake (Figure 5). Two rail lines and perhaps ten structures appear in the new land to the south of the slip. Otherwise, the infilled area appears devoid of construction, particularly surrounding the new North Slip. Significant development occurred in the year that followed, as by 1901, additional rail spurs and buildings appear south of the slip, while a short, angled breakwater first extends out into the lake from the north edge of the slip (Figure 6). Three lighthouses are noted in the immediate vicinity of the slip at this time: one on the breakwater, a second on land to the south of the slip, and a third just offshore from the second lighthouse.

By 1929, additional infilling expanded the land north and south of the slip into the lake, thereby extending the slip to its present size (Figure 7). The full breadth of South Works is now apparent; a handful of new structures and many new railroad tracks appear on the land immediately north of the slip. Likewise, to the south of the slip, a high density of structures and rail lines now appear. While no structure is indicated on the map along the southern edge of the slip, the area of the steel ore bins (11CK944), the lack of rail lines or other structures there potentially indicates their presence by this point, A few blocks inland to the west, US Route 41 appears for the first time, running north-south.

The next available map of the site, from 1953, shows that several large structures have been added on the land to the north of the slip (Figure 8). In the portion of the site to the south, the buildings and rail lines in the western half appear unchanged. In the eastern half, though, what had been primarily rail lines has been replaced by two large structures in the northeast portion, immediately below the steel ore bins, that appear to be the extant power plant (11CK945). In the southeast quadrant, the single building depicted on the 1929 map has been expanded into or replaced by a larger structure, whose footprint overlays what had previously been several rail lines. Furthermore, lighthouses have been added to the two eastern corners of the slip where it meets the lake.

The 1991 map shows the area north of the slip to be mostly unchanged, with a few additional structures in place, while in the area to the south, a reduction in the number of structures has occurred (Figure 9). The most recent USGS map, from 1997, presents a nearly identical scene to that presented in 1991 (Figure 10). Noteworthy, however, is that the 1997 USGS map is noted to have been derived “from imagery taken in 1988 and other sources.” This may explain why a number of structures depicted to the south of the slip in this 1997 map are shown in aerial imagery to have been at least partially demolished by 1988 and fully razed by 1992, as discussed below.

Aerial photographs of the project area over time serve to corroborate the map information above and provide additional visual details of the developments surrounding the North Slip. The earliest available aerial imagery, dating back to 1938, indicates that substantial construction took place on the land north of the slip after it was mapped in 1929 (Figure 11). The railroad tracks that had cut across the area at an angle have been realigned to match the series of long, north-south oriented structures now filling most of that area. South of the slip, the changes discussed above as they appear on the 1953 USGS map appear to be fully in place by this point. The steel ore bins (11CK944) and the power plant (11CK945) have been constructed in the northeast quadrant of the south parcel. Below them, the larger structure has replaced the smaller one depicted in the 1929 map. It appears, then, that by the time this 1938 aerial photo was taken, the site had reached its maximum in terms of structures and activity. This trend is also evident in the 1953 map, as well as in the aerial imagery from 1952 that complements it (Figure 12). The finer details of 11CK944 and 11CK945, as well as the density of structures and rail activity across South Works, can all be seen in the 1938 and 1952 aerial imagery (Figure 11 and Figure 12).

Aerial photographs from 1964 and 1978 show no major changes to the site in comparison to the details seen in 1952 (Figure 13 and Figure 14). One exception appears to be the construction of a series of buildings immediately north of the western end of the North Slip, completed at some point between 1964 and 1978. A false-color aerial photograph from 1983 shows a comparable scene, while another such image from 1988 depicts changes to the area south of the slip (Figure 15 and Figure 16). While Figure 16 lacks the crisp resolution of Figure 15, it is clear that by 1988, many of the structures in the southern portion of the U. S. Steel site, between the slip and the Calumet River, had been razed, particularly in the center and southeastern portions of that plot. This activity is confirmed by the USGS map from 1991 and a clearer black-and-white aerial photograph from 1992, which shows only the steel ore bins and the

power plant, along with perhaps three or four structures at the western edge, still standing in the southern portion of the site (Figure 17).

A black and white aerial photograph from 1998 shows that many of the structures marked that were depicted on the 1997 USGS map are no longer standing (Figure 18). As noted above, for the area south of the slip, this is likely due to the 1997 mapping data, which derived from imagery taken in 1988. Many of the structures there were demolished around that time and fully gone by 1992. It appears that there are few to no extant structures to the north of the slip at this point, which is a dramatic shift from the 1992 aerial (Figure 17). A color aerial photograph from 2002 depicts a comparable scene (Figure 19). It is possible that one or two large structures remain to the north of the slip, along with a few to the south, and the power plant and steel ore bins remain intact. By 2003, however, the power plant (11CK945) and the other structures south of the slip have been razed to the ground, leaving only the steel ore bins (11CK944) (Figure 20). The land north of the slip, in contrast, appears unchanged from the previous year. In the most recent aerial photograph, dated April 22, 2024, the area in and around the slip appears nearly identical to its appearance in the 2003 photograph (Figure 21).

Based on the historic map and aerial review, there are no visible or mapped cultural resources within the project area aside from the slip itself.

3.8 Underwater Inspection Report

In the course of their underwater and sector scan, divers performed a detailed inspection of a debris field along the floor of the slip. The inspection documented a sunken sailboat slightly in from the southern wall of the slip amid construction items, metal pieces, 275-gallon drums, and timber debris (Brennan 2019:4). The sinking of the sailboat must have occurred at some point following the most recent dredging of the slip in the late 1970s, too recent to be documented as an archaeological resource or eligible for the NRHP due to the fact that it occurred within the last fifty years (U. S. Steel, Personal Communication).

4 Applicable Regulations and Guidelines

Federal and state laws applicable to the project regarding cultural resources include Section 106 of the National Historic Preservation Act (Section 106) and the Illinois State Agency Historic Resources Preservation Act (20 ILCS 3420).

4.1 Federal Regulations

Section 106 requires that federal agencies assess the effects of their projects on cultural resources eligible for or listed in the NRHP. Section 106 applies to any federal agency undertaking that has the potential to affect NRHP-eligible or listed cultural resources, should they be present. This federal agency action may include permitting funding or other approvals for project activities. The current project would require a permit from the U.S. Army Corps of Engineers (USACE), constituting an undertaking subject to Section 106.

Section 106 requires that the federal agency assess effects of their undertakings in areas where the effects are likely to occur, known as the area of potential effects (APE). The APE takes into account both direct and indirect effects. Direct effects occur in areas where project-related ground disturbance would occur and also include visual effects. Direct effects in these areas may impact archaeological or architectural resources if they are present. Indirect effects encompass areas where noise, changes in traffic patterns, or other project-related impacts occur outside the project area's footprint. Indirect effects may impact architectural resources, specific types of archaeological resources, or other cultural

resources, if present. For the Purposes of Section 106, the assumed APE for the project corresponds to the boundaries of the North Slip.

4.2 State Regulations

The Illinois State Agency Historic Resources Preservation Act (20 ILCS 3420) requires state agencies to ensure that their undertakings (including funding, permits, licenses, and/or approvals) consider the preservation and enhancement of cultural resources. This law mimics Section 106, in that it requires state agencies to determine whether cultural resources are present within the area to be impacted by the undertaking, and take steps to eliminate, minimize, or mitigate these impacts. The Illinois State Agency Historic Resources Preservation Act also defines areas of “high probability” for encountering cultural resources throughout the state, and an archaeological survey is required for any private undertaking proposed within an area of high probability, regardless of state or federal involvement in the project. The project is located adjacent to a high-probability area; however, the North Slip itself does not fall within this high-probability area (see Figure 2).

5 Summary and Recommendations

The desktop review indicates that no known cultural resources are located within the project area. However, the North Slip is over 50 years old and would therefore be considered a historic cultural resource pursuant to Section 106. The project consists of dredging impacted sediment from the slip and will not structurally impact the slip itself. Select removal and/or modifications to structures at the head of the North Slip to facilitate the dredging is currently being evaluated and could result in removal or modifications to elements that are likely over fifty years old. However, considering the fact that nearly all the structures on the South Works site were removed in the late 1980s and early 1990s, removal of the water intake structure would not alter the integrity of the site, as doing so would not alter the location, design, setting, workmanship, feeling, or association of the slip. As a result, removal of the water intake would have no adverse effect upon the eligibility of the North Slip or South Works for the NRHP. Therefore, no additional work is recommended for the project to proceed.

While Site 11CK944 is immediately adjacent to the project area to the south, it is outside the project’s assumed APE, and the work is therefore not anticipated to impact this site in any manner. Site 11CK945 is no longer extant at the surface and is further from the slip than 11CK944. The dredging work therefore will not impact this site. Likewise, Site 11CK942 and the cemetery, which includes the Zirnbigl grave, are located just under a mile away from the project area and will not be impacted by the proposed work. The sunken sailboat discovered at the base of the slip is not a cultural resource and can be removed without concern. In the event that artifacts and/or human remains are identified within the project area, dredging activities should cease and the Illinois SHPO contacted.

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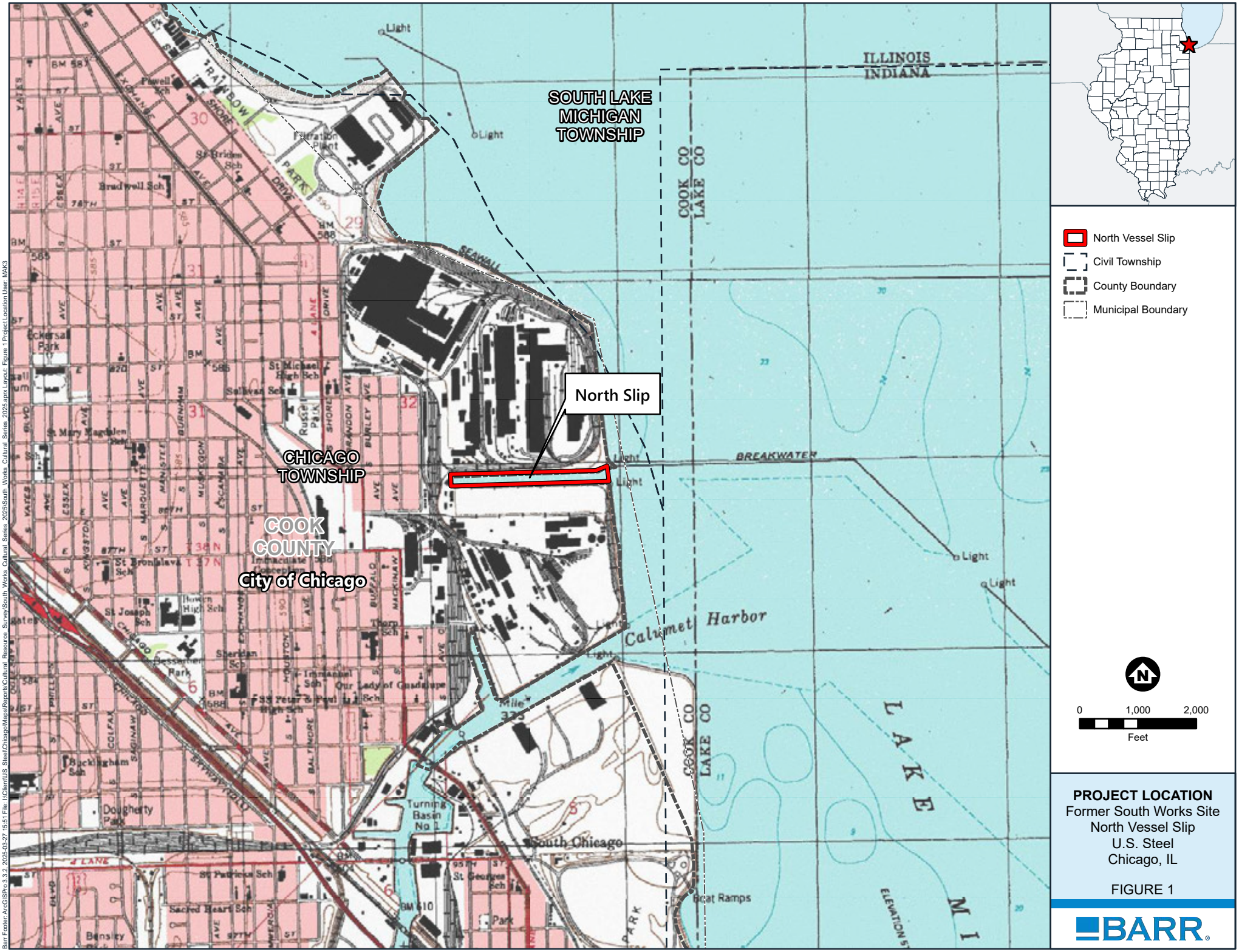
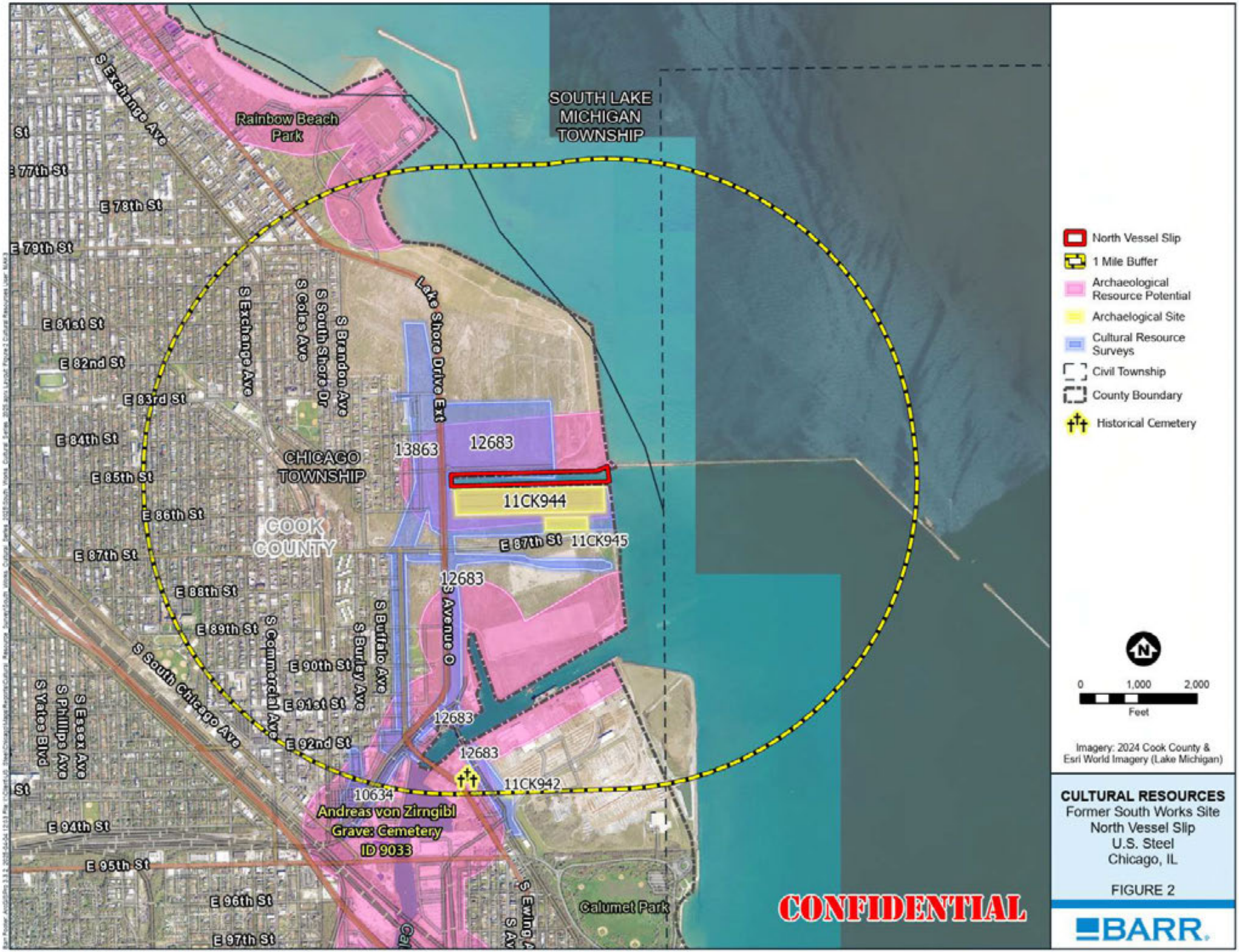
Figures



PROJECT LOCATION
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 1

BARR



CONFIDENTIAL

CULTURAL RESOURCES
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 2

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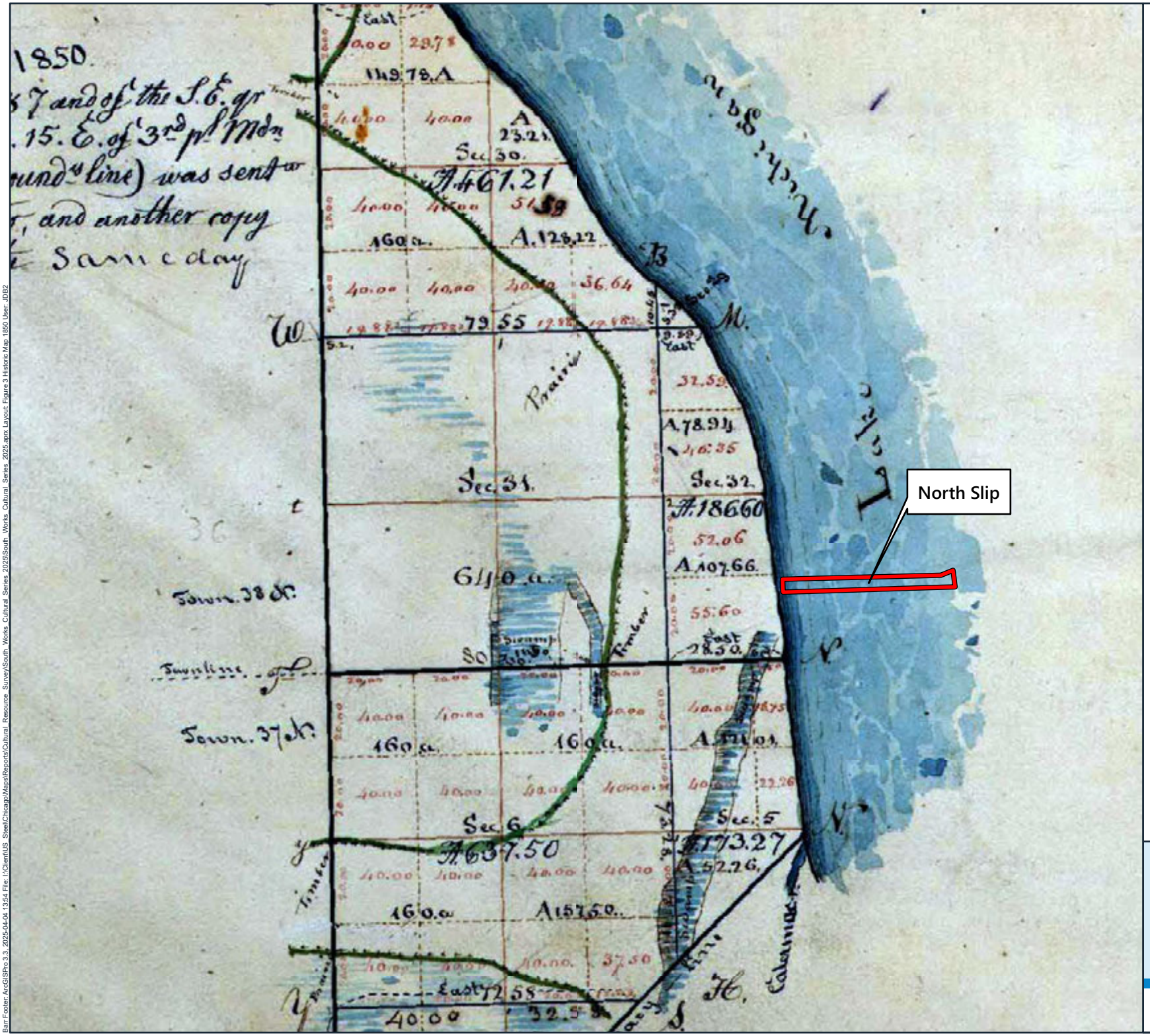

North Vessel Slip

0 1,000 2,000
Feet

1850 HISTORIC MAP
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 3

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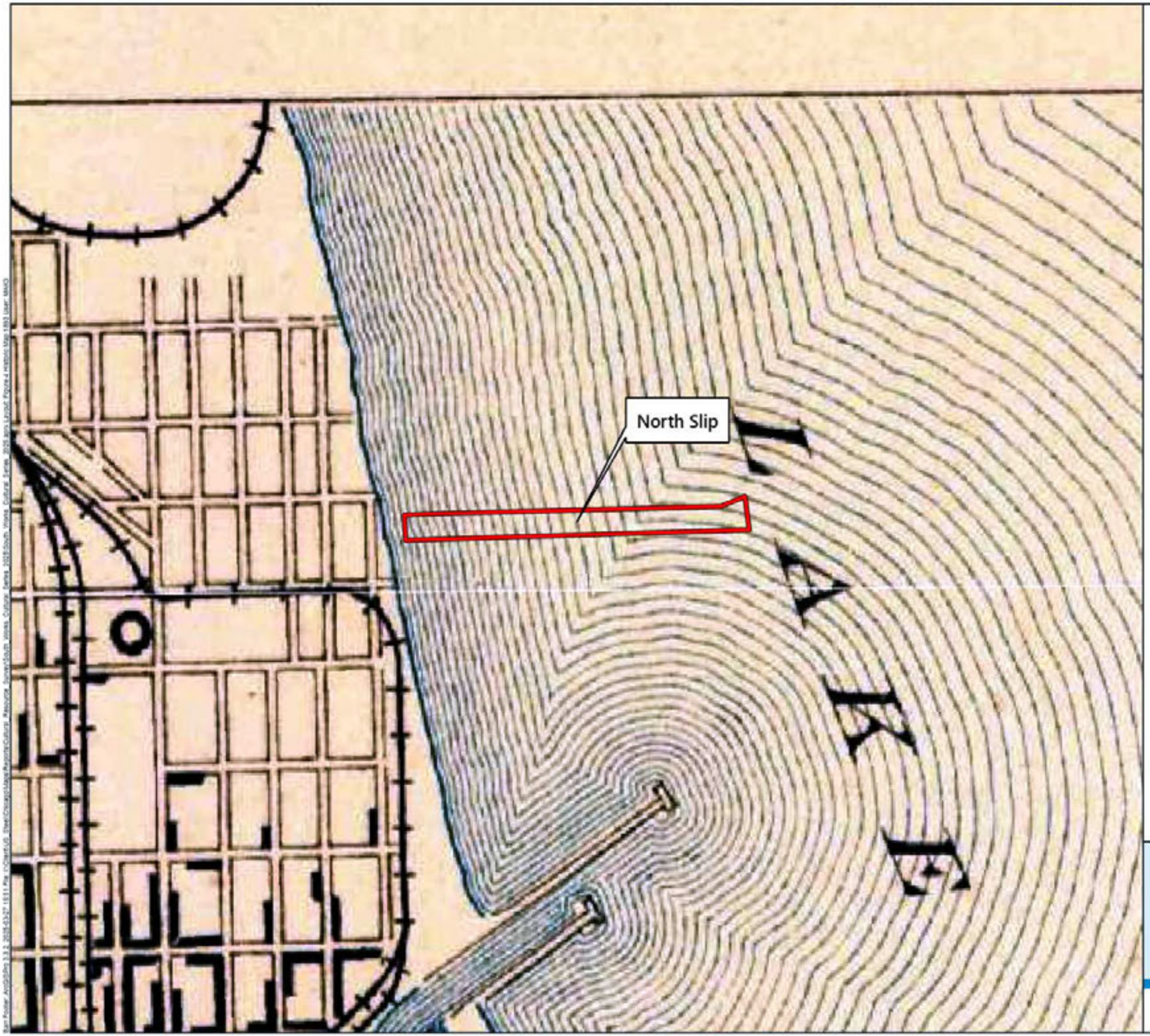


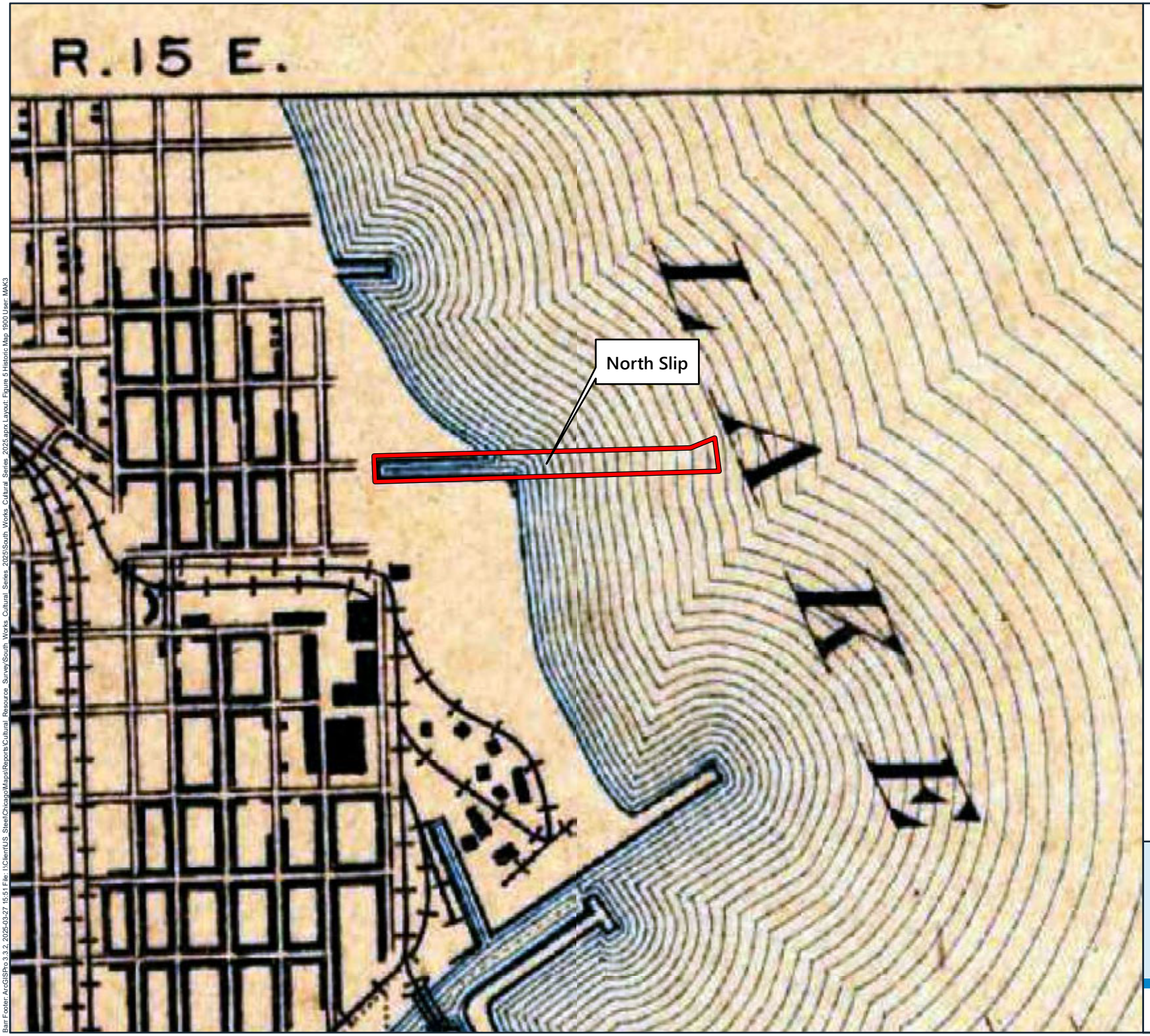
North Vessel Slip

0 500 1,000
Feet

1893 HISTORIC MAP
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 4

BARR



North Vessel Slip

N

0 500 1,000

Feet

1900 HISTORIC MAP
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 5

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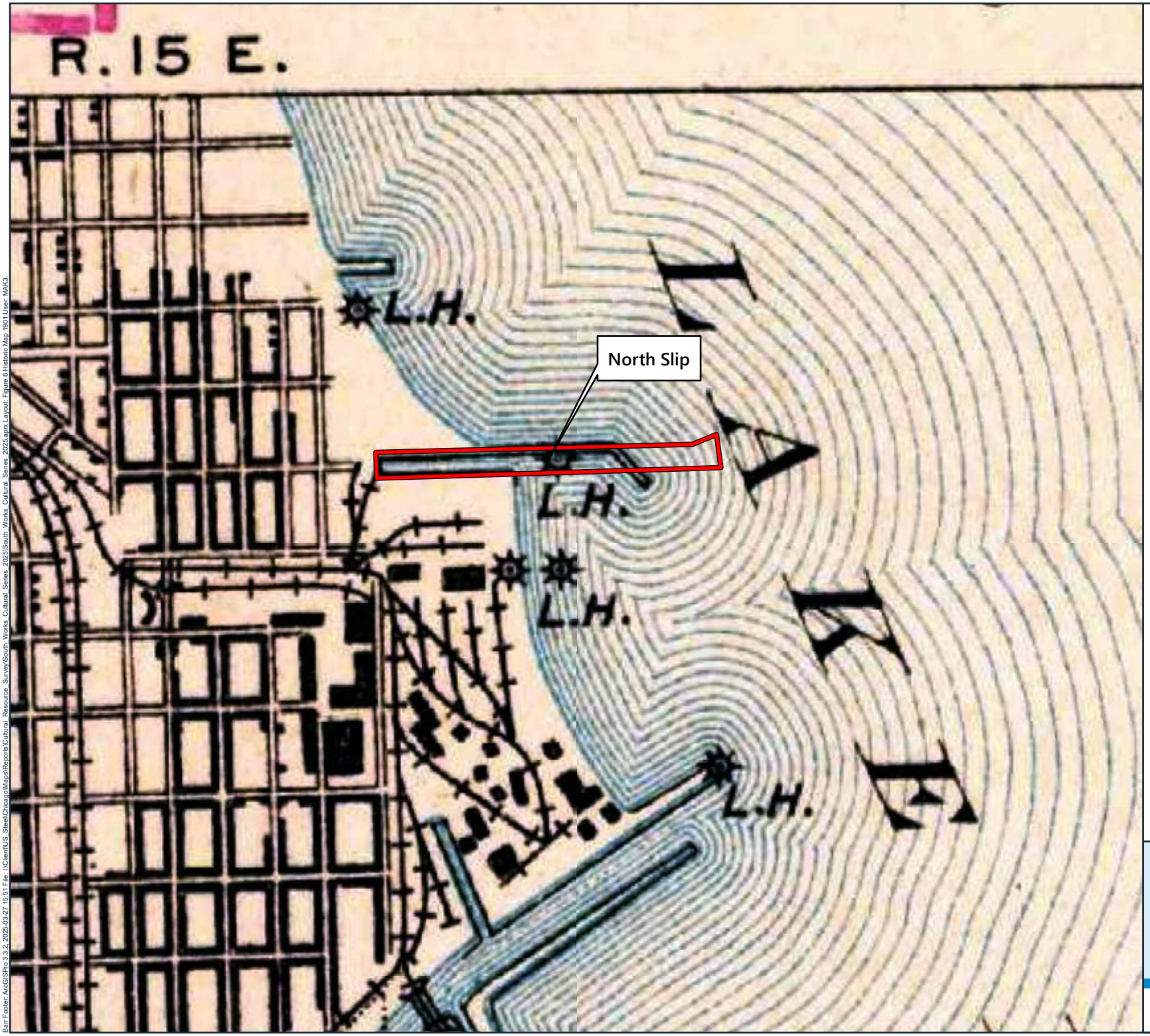


North Vessel Slip

N

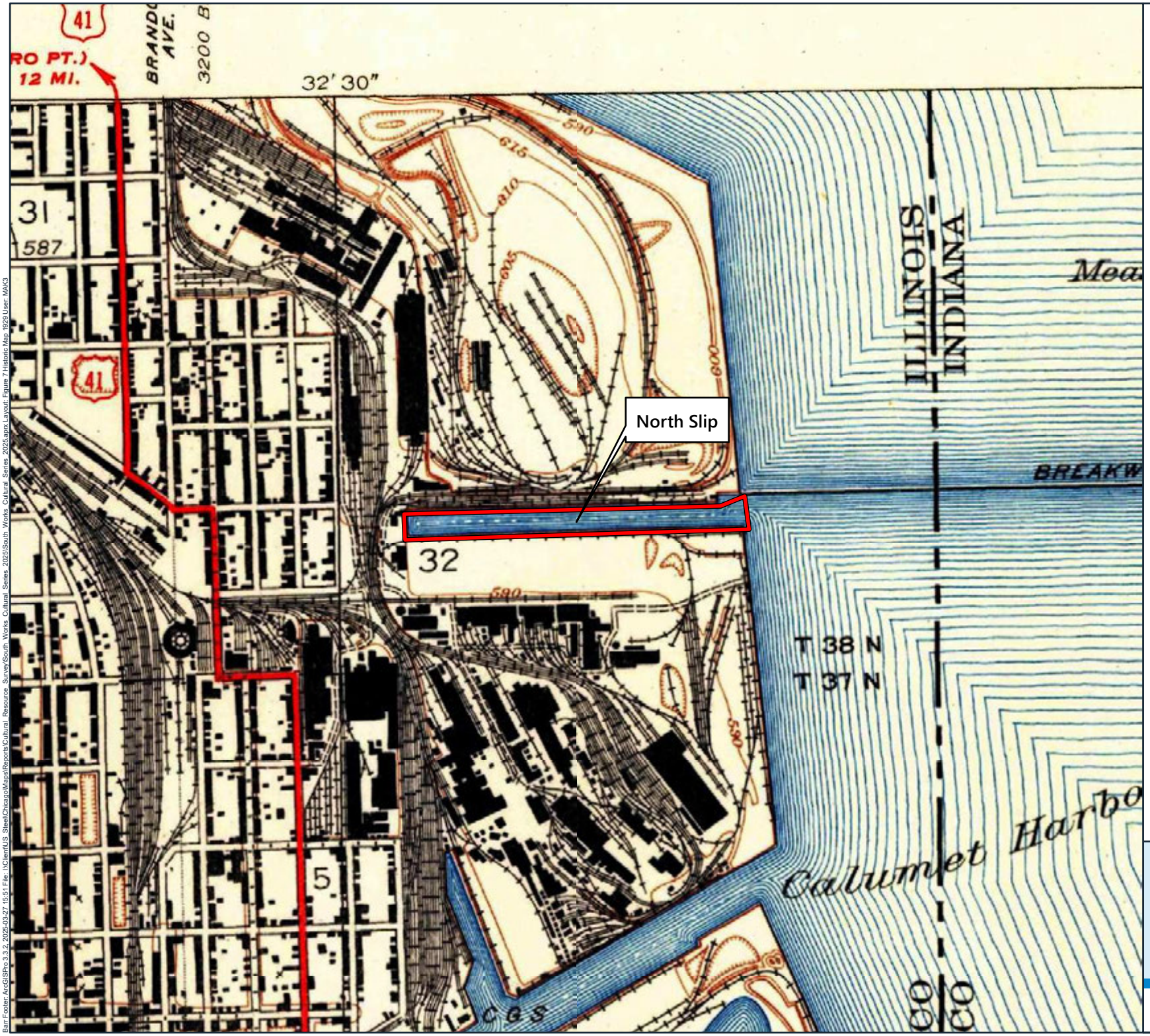
0 500 1,000

Feet

1901 HISTORIC MAP
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 6

BARR



North Vessel Slip

N

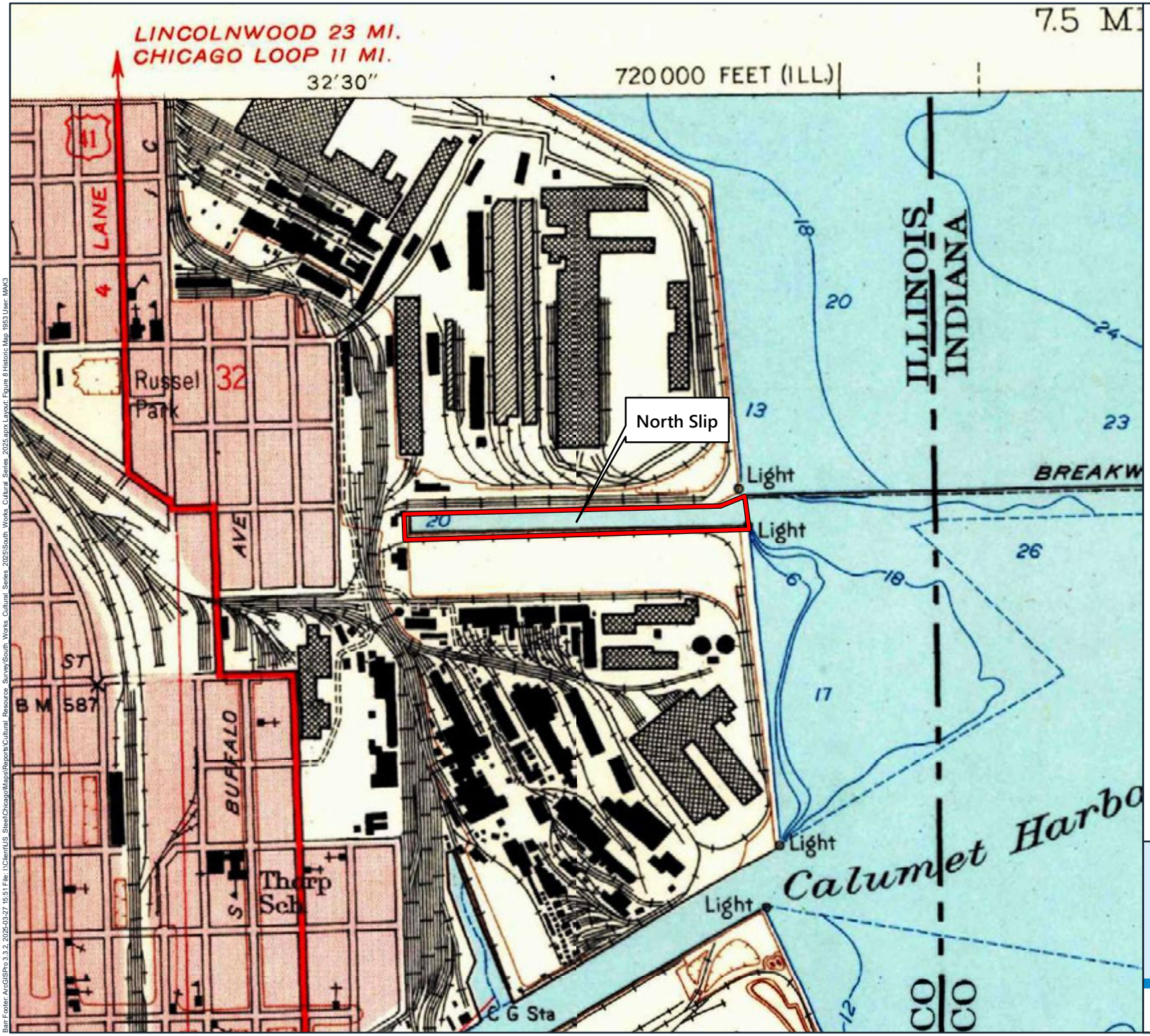
0 500 1,000

Feet

1929 HISTORIC MAP
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 7

BARR



North Vessel Slip

N

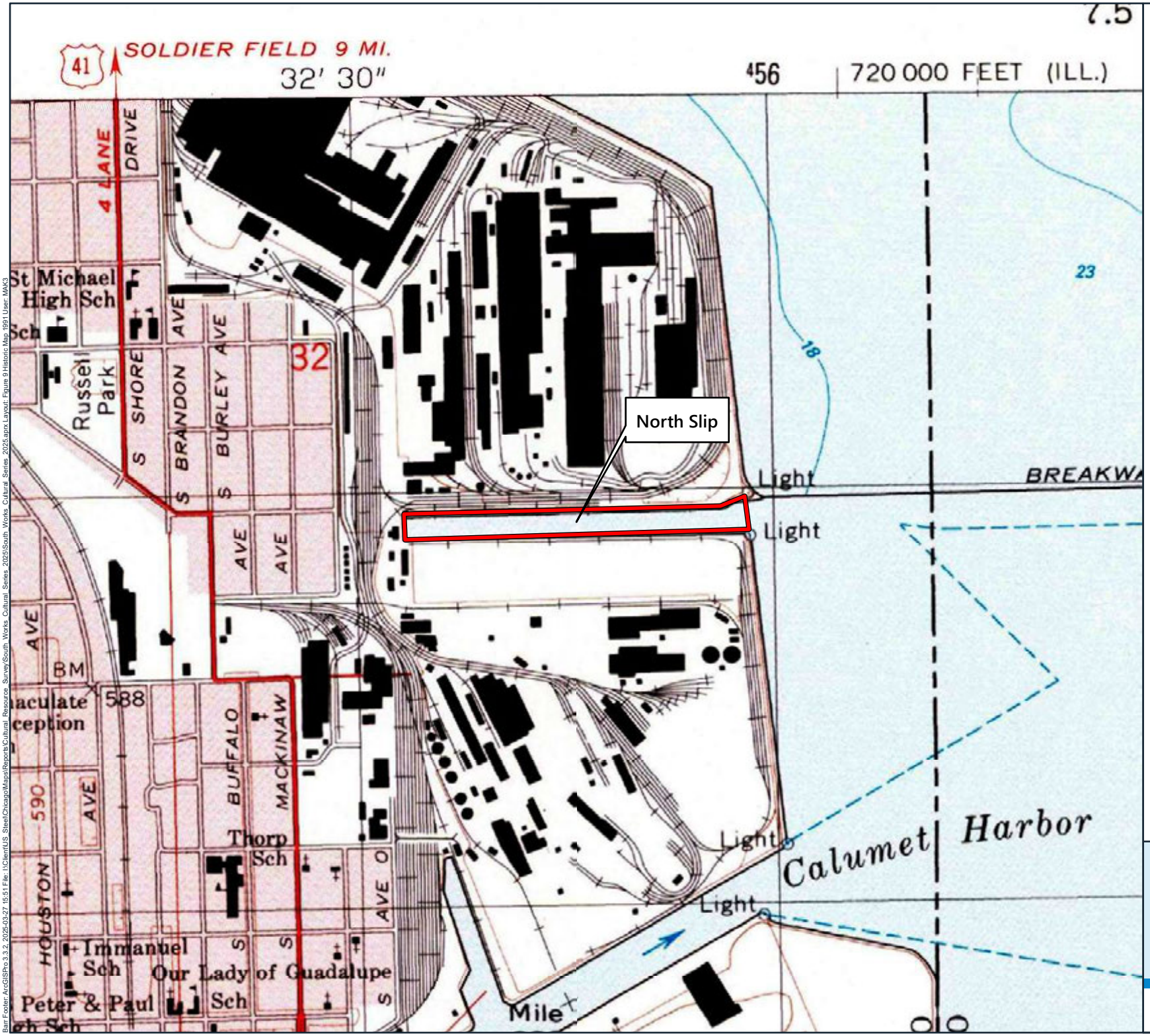
0 500 1,000

Feet

1953 HISTORIC MAP
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 8

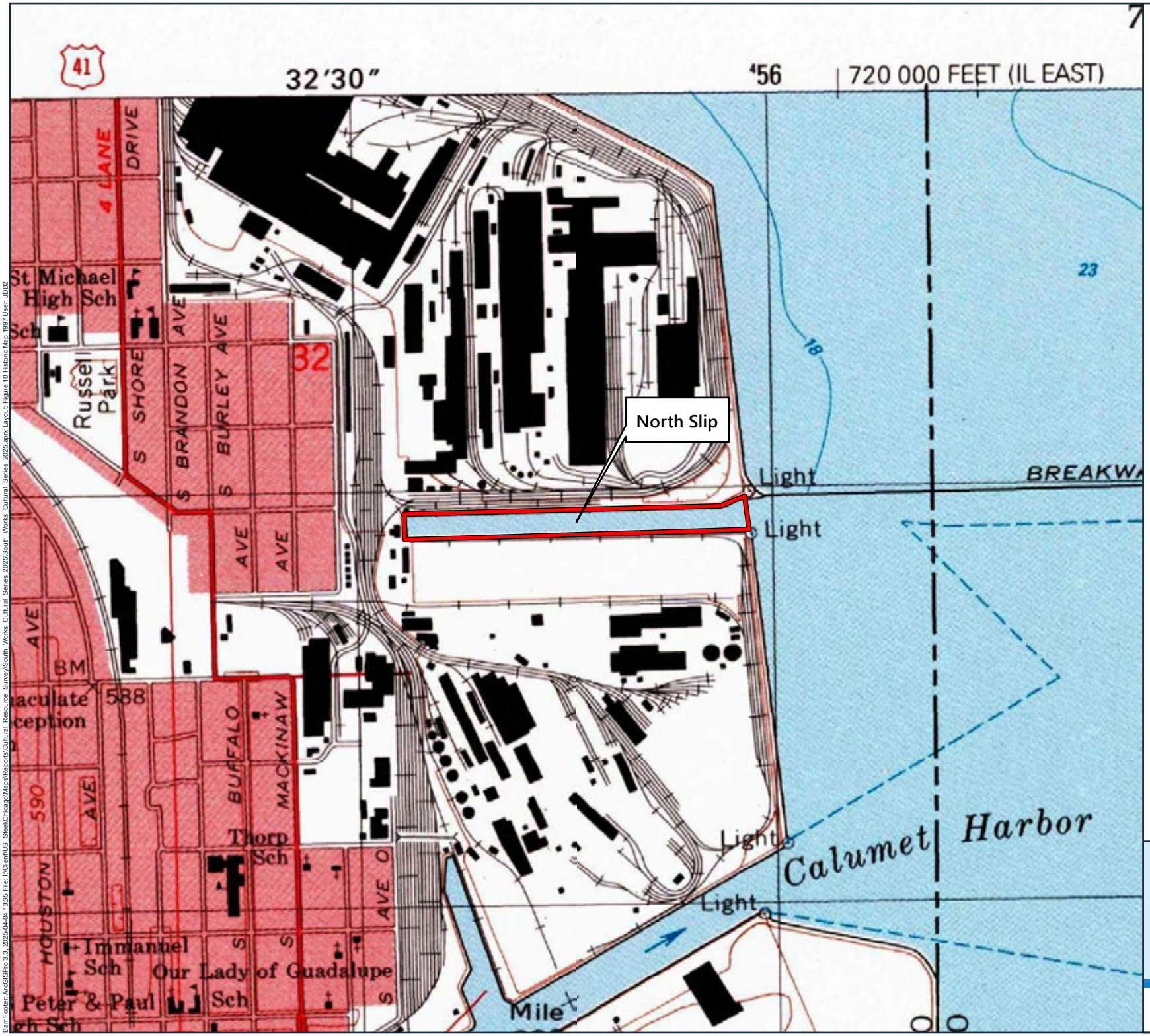
BARR



1991 HISTORIC MAP
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 9

BARR



1997 HISTORIC MAP
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 10

BARR

North Vessel Slip

0 500 1,000

Feet

Imagery Source: Illinois Geospatial Data Clearinghouse 1938

1938 HISTORIC AERIAL PHOTO

Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 11

BARR

North Vessel Slip

0 500 1,000
Feet

Imagery Source: USGS Aerial Photo
Single Frame 1952

1952 HISTORIC AERIAL PHOTO
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 12

BARR

North Vessel Slip

0 500 1,000
Feet

Imagery Source: USGS Aerial Photo
Single Frame 1964

1964 HISTORIC AERIAL PHOTO
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 13

BARR

North Vessel Slip

0 500 1,000

Feet

Imagery Source: USGS Aerial Photo Single Frame 1978

1978 HISTORIC AERIAL PHOTO

Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 14

BARR

North Vessel Slip

0 500 1,000
Feet

Imagery Source: USGS National High Altitude Photography (NHAP) Photograph 1983

1983 HISTORIC AERIAL PHOTO
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 15

BARR

North Vessel Slip

0 500 1,000
Feet

Imagery Source: USGS National Aerial Photography Program (NAPP) Photograph 1988

1988 HISTORIC AERIAL PHOTO
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 16

BARR

North Vessel Slip

0 500 1,000
Feet

Imagery Source: USGS National Aerial Photography Program (NAPP) Photograph 1992

1992 HISTORIC AERIAL PHOTO
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 17

BARR

North Vessel Slip

0 500 1,000
Feet

Imagery Source: Cook County 1998

1998 HISTORIC AERIAL PHOTO
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 18

BARR

North Vessel Slip

0 500 1,000
Feet

Imagery Source: USGS, Woolpert 2002

2002 HISTORIC AERIAL PHOTO
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 19

BARR

North Vessel Slip

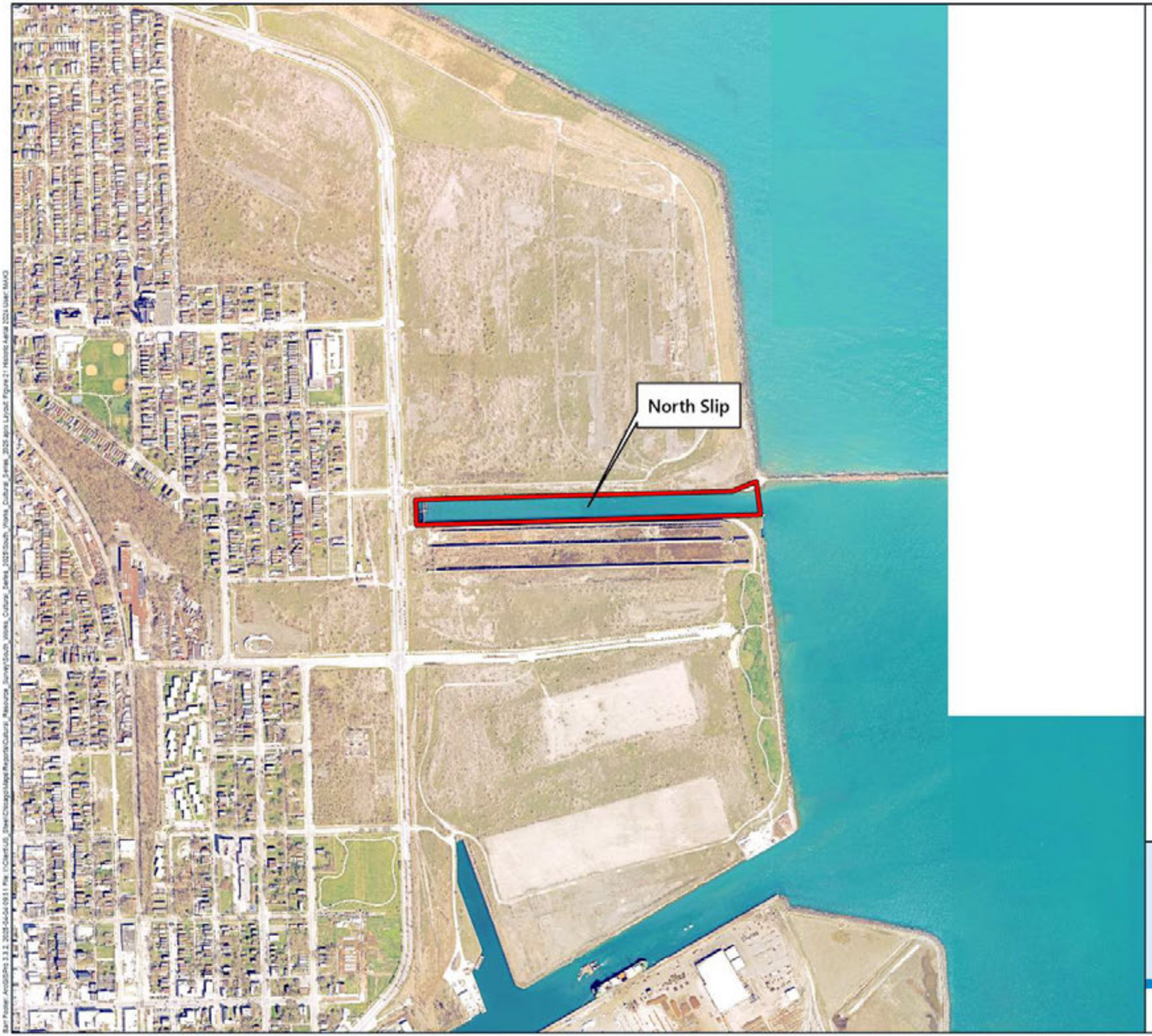
0 500 1,000
Feet

Imagery Source : Cook County 2003

2003 HISTORIC AERIAL PHOTO
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 20

BARR



North Vessel Slip

0 500 1,000
Feet

Imagery Source: Cook County 2024

2024 HISTORIC AERIAL PHOTO
Former South Works Site
North Vessel Slip
U.S. Steel
Chicago, IL

FIGURE 21

BARR

Appendix D

Letter to U. S. Steel from IEPA regarding 401 WQC Submittal

Illinois Environmental Protection Agency
2520 West Iles Avenue • P.O. Box 19276 • Springfield, Illinois • 62794-9276 • 217-782-3397

JB Pritzker, Governor **James Jennings**, Acting Director

Wednesday, December 17, 2025

Subject: Submittal of documents pertaining to the "U.S. Steel North Vessel Slip Remediation Project" in Cook County
Pre-filing Meeting Request for Clean Water Act Section 401 Certification
Illinois EPA Log number: C-0428-25

Dear Applicant:

On Monday, December 15, 2025, the Illinois EPA (Agency) received your documentation concerning the proposed dredging, dewatering, and transportation off-site for disposal of sediments within the remedial extent. The indicated project location is in vicinity of Latitude 41.7403° and Longitude -87.5385° and in Section 32 of Township 38N, Range 15E in the East 3rd P.M. of Cook County, Illinois. Further location information includes The North Vessel Slip (a component of the former U.S. Steel South Works Plant) of Chicago (60617).

The Agency has determined that your filed documentation will be regarded as a Pre-filing Meeting Request in accordance with application procedures established under federal rules at 40 CFR 121.4. Be advised that the subject filing will not result in a final determination by this Agency, nor should this notification be uses for determining whether an individual (case-specific) Clean Water Act (CWA) 401 certification is required. This notice is intended to provide an overview of the specific technical information that may be required if an individual CWA 401 certification is required and to inform you of other federal and state permit requirements that may be applicable to your activity.

Please note that the U.S. Army Corps of Engineers (USACE) is responsible for determining when a 401 certification is required. If you are not certain whether an individual 401 certification is required for your project, please contact your USACE representative. If a USACE general permit (Nationwide or Regional) authorization has already been issued to you, it should contain a brief and clear statement indicating whether a certification has already been granted or if you need to obtain a 401 certification through the State.

If you have correctly determined or been advised by a federal agency or department that an individual CWA 401 certification is required for the subject project, the following information

including federal and state 401 application criteria, project specific environmental and/or discharge data requirements, and certification fees must be provided. Please note, regardless of the information already submitted, a certification request as defined by 40 CFR 121.5(a) shall be submitted at least 30 days after submittal of the pre-filing meeting request. Consequently, the Illinois EPA has established Wednesday, January 14, 2026, as the certification request acceptance date. The Agency will maintain your already submitted documentation for a period of one year in anticipation of a forthcoming certification request.

In accordance with the Final 2023 Clean Water Act Section 401 Water Quality Certification Improvement Rule (40 CFR 121) a certification request shall, at a minimum, be in writing, be signed, and dated, and the request shall include the following: (i) A copy of the Federal license or permit application submitted to the Federal agency; and (ii) Any readily available water quality-related materials that informed the development of the application the following minimum content. Additionally, the Agency has determined, in accordance with 40 CFR 121.5(c), that the following technical information including items pursuant to 35 Ill. Adm. Code 302.105 (antidegradation) is relevant to the water quality-related impacts from the activity, and therefore, must be adequately addressed in the request for certification.

(1) Characterization of Waters - Title 35 Ill. Adm. Code Section 302.105(f)(1)(A) requires identification and characterization of the waterbody affected by the proposed activity and the existing uses of the water body for activities subject to Agency certification under federal CWA Section 401. The application must provide a waters delineation diagram that clearly labels and identifies the extent of all aquatic resources within and adjacent to the project boundaries regardless of jurisdictional status, and a waterbody characterization that addresses physical, biological, and chemical conditions of the water body(ies) affected by the proposed activity.

a. For streams and open waters, full characterization utilizing applicable assessment protocols must be provided by the project proponent if the water body has not already been assessed by Illinois EPA and is not found on the Illinois EPA 305(b) Integrated Water Quality Report. In some instances, a full characterization may not be necessary depending on the aquatic life uses of the water.

b. For wetlands, characterization will be satisfied with a proper delineation conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual with the Midwest Regional Supplement and a Floristic Quality Assessment consisting of an FQI and Native Mean C of the floristic community based on Plants of the Chicago Region (Swink and Wilhelm 1994).

(2) Pollutant Loading and Degradation Analysis - Title 35 Ill. Adm. Code Section 302.105(f)(1)(B) requires identification and quantification of (1) the proposed load increases for all applicable parameters and (2) all potential adverse actions to existing uses of the water body for activities

subject to Agency certification under federal CWA Section 401. The application must provide a detailed analysis addressing all unavoidable impacts that may occur as a result of construction which have the potential to cause loss of aquatic habitat, loss of aquatic function, temporary or permanent additions of pollutant parameters (e.g., TSS, TDS, pH, ammonia (as N), BOD, inorganic and organic compounds, etc.) or reduction of dissolved oxygen. The analysis must also include evaluation of all potential operational effects of the proposed activity to include long term water quality and habitat degradation resulting from alterations to land runoff quality and quantity, introduction of new non-point pollutant sources, loss or degradation of riparian or shoreline buffer areas, and any other project relevant factors.

(3) Purpose and Benefit - Title 35 Ill. Adm. Code Section 302.105(f)(1)(C) requires identification of the purpose and anticipated benefit to the community at-large of the proposed activity for activities subject to Agency certification under federal CWA Section 401. The application must provide a discussion of the purpose and the socio-economic benefits of the activity. Additionally, in accordance with 302.105(c)(1), for any activity that has potential to cause a significant lowering of the water quality, as demonstrated by the application or designated by the Agency, the project proponent must demonstrate the impacts are necessary to accommodate important economic or social development. Such demonstration of necessity and benefit importance shall be conducted in accordance with Economic Guidance for Water Quality Standards developed by USEPA and found at https://www.epa.gov/wqs-tech/economic-guidance-water-quality-standards.

(4) Alternatives Assessment - Title 35 Ill. Adm. Code Section 302.105(f)(1)(D) requires an evaluation of possible alternatives that result in no or less load increase and no or less environmental degradation as compared to the impacts of the proposed activities subject to Agency certification under federal CWA Section 401. The application must provide a detailed discussion of alternative project configurations and/or locations that were considered during project development so as to ensure only unavoidable environmental impacts are proposed.

(5) Avoidance and Minimization - Title 35 Ill. Adm. Code Section 302.105(c)(2)(B) requires the Agency to assure that all technically and economically reasonable measures to avoid or minimize the extent of the proposed pollutant loading and/or environmental degradation have been incorporated into the proposed activity. In accordance with Section 302.105(f)(1)(E), the application must provide discussion of how the proposed activity incorporates all reasonably expected pollution control measures to meet Antidegradation requirements.

(6) Protection of Existing Uses - Title 35 Ill. Adm. Code Section 302.105(c)(2)(B) requires the Agency to assure that all existing uses will be fully protected. In accordance with Section 302.105(f)(1)(E), the application must provide a compensatory mitigation plan for unavoidable permanent losses of surface waters of the State. The mitigation plan must sufficiently demonstrate that existing uses, regardless of whether they are included in the water quality standard, will be maintained, and

protected within a reasonable period of time following the proposed impacts. For permittee-responsible compensatory mitigation, all information related to mitigation work plans including existing and proposed site diagrams, work specifications and characterization of existing waters at the mitigation site must be included in the plan. The plan must also provide explanation of the goals the mitigation plan, post construction monitoring intervals, the criteria for mitigation success, and the adaptive management procedures for when monitoring indicates nonaccomplishment of mitigation goals. For compensatory mitigation using third party mechanisms such as mitigation banking or in-lieu fee mitigation programs, additional information pertaining to the specific mechanism and purchase agreements will be required.

For losses of surface waters of the State that are temporary (weeks or months), the mitigation plan must provide a description of the measures, management practices, monitoring, and adaptive management procedures that will ensure the temporarily impacted existing uses have been fully restored to the surface waterbody or water body segment within a period of 2 years of the initial impact.

(7) State Resource Agency Consultation - Title 35 Ill. Adm. Code Section 302.105(f)(1)(F) and 302.105(f)(3)(C) requires that the proponent provide proof that an application has been filed with the Illinois Department of Natural Resources (Department) and furnish the Agency with the results of the consultation processes undertaken with the Department for compliance with the Illinois Endangered Species Protection Act [520 ILCS 10/11(b)], the Illinois Natural Areas Preservation Act [525 ILCS 30/17], the Interagency Wetland Policy Act of 1989 [20 ILCS 830] (when required), and the Illinois State Agency Historic Resources Preservation Act [20 ILCS 3420]. Provide proof that an application has been filed with the Department and consultation results as described above.

(8) Specific Work Descriptions and Stormwater Compliance - In accordance with Title 35 Ill. Adm. Code Section 302.105(f)(1)(E), the application must provide sufficient information to facilitate a fact-based understanding of the scope of impacts. This information includes, but is not limited to, the types of equipment used and activities the equipment will be involved in, specific descriptions of each type of material that will be placed within the waterbody(ies) and the quantity in cubic yards of each type, descriptions of specific work activities such as stream flow diversion, streambank stabilization, stream channel alteration, scour prevention, wetland removal and backfill, vegetation removal, causeway construction and other temporary impacts. Provide plans, maps, diagrams, and engineering drawing of appropriate detail to describe the proposed construction activities and structure proposed including adequately labeled diagrams showing site conditions before and after construction activities. For activities causing disturbance to earthen area that are expected to be less than 1 acre or otherwise will not require coverage under the General Stormwater NPDES Permit, provide a detailed description of all soil erosion and sedimentation prevention practices including vegetation or other or stabilization measures,

consistent with the Illinois Urban Manual, that will be implemented during and following construction to prevent stormwater related water pollution from the construction site.

(9) Testing of Dredged or Fill Material Discharges - Title 35 Ill. Adm. Code Part 395 requires laboratory testing of the proposed dredged or fill materials for discharges into surface waters of the State if such materials do not consist entirely of uncontaminated quarry stone, sand, or broken concrete free of protruding reinforcement material. Material discharges subject to these requirements may also include incidental releases or resuspension of sediment and substrate materials due to construction activities.

Required testing for the proposed material discharge may include particle size analysis and chemical analysis in accordance with Section 395.205 or other appropriate testing protocols, and to the extent deemed necessary by the Agency to determine the potential pollutional characteristics of the materials with time, effectiveness of treatment, placement practices, or other discharge controls, structural and otherwise. Sampling of materials to be evaluated must be representative of the proposed discharge. Analytical testing for contaminants of concern must be conducted in accordance with approved analytical methods found in 40 CFR 136 and using detection concentrations sufficiently low enough to meet chemical specific Illinois water quality standards found in 35 Title 35 Ill. Adm. Code 302.

Activities such as open water disposal of dredged solids or release of sediments from dam removal must demonstrate that discharged materials are free of significant sources of contaminants or will not cause degradation of aquatic resources and violations of water quality standards where dispersal of sediments would occur. Additional modeling and studies may be required to demonstrate that such activities and their resulting sediment dispersion zones would comply with water quality requirements under 35 Ill. Adm. Code 302.102 (Allowed Mixing, Mixing Zones, and ZID). Dam removal activities shall develop site specific stream bed load rate curves and fluvial geomorphological modeling to determine sediment transport rates corresponding to dam removal activities and to demonstrate that the proposed dam removal would not cause degradation of downstream waters containing mussel beds; endangered species; fish spawning areas; areas of important aquatic life habitat; or any other natural features vital to the wellbeing of aquatic life. The Agency recommends early consultation with Bureau of Water staff to identify the appropriate sampling and testing requirements.

(10) Certification Fee - Section 12.6 of the Environmental Protection Act [415 ILCS 5/12.6] requires payment of the certification fee prior to issuance of the federal CWA Section 401 certification. In addition to this, the Agency may determine that an application is incomplete or that a public notice cannot be issued unless the certification fee has been paid. Please provide the fee payment in the appropriate amount, which is $350 or 1% of the gross value of the proposed project, whichever is greater, but not to exceed $10,000. The gross project value must also include any costs associated

with compensatory mitigation. Please note that FEES ARE NOT REFUNDABLE. We have attached a fee worksheet to this email that contains additional fee payment information. Please return this worksheet with your information along with the appropriate fee check.

(11) Other Agency Permits - Please be advised that this project may require a Construction Site Activities Storm Water NPDES Permit issued prior to initiating construction if the construction activity associated with the project will result in the disturbance of 1 (one) or more acres, total land area. Such permit requires separate submittal of a properly completed Notice of Intent (NOI) form by certified mail to the Agency's Division of Water Pollution Control, Permit Section or by visiting the following website: [https://epa.illinois.gov/topics/forms/water-permits/storm-water/construction.html].

The applicant is also advised that permits to construct sanitary sewers, water mains and related facilities prior to construction must be obtained. Please visit https://epa.illinois.gov/topics/forms/water-permits.html for more information on these requirements.

Please ensure that the log number (C-0428-25) is referenced on all correspondence with the Agency concerning the subject activity. The Agency will resume its review of this project upon submittal of a valid certification request. Also at the time of the certification request, the Agency will provide notification to you and the federal permitting agency regarding the date that certification request was received by the Agency, any technical information or fee payment requirements that may be still be required, the reasonable period of time that the Agency has determined is necessary to complete its certification request review process, and the name and contact information of the Agency analyst assigned to the project. If you have any questions about this notification or about the Illinois 401 review process, please contact us at: 217/782-3362.

Finally, the Agency advises that other federal, state, and local authorizations for construction activities may be required. Specifically, the Illinois Department of Natural Resources, Division of Water Resource Management (DWRM) issues permits for work in and along the rivers, lakes and streams of the state, for activities in and along the public waters, including Lake Michigan, and for the construction and maintenance of dams. For additional information please visit https://dnr.illinois.gov/waterresources/permitprograms.html or call at .

Sincerely,

Marcya Saddler

Office Coordinator, Division of Water Pollution Control
Bureau of Water, Illinois EPA

Attachments(s)

CC: FederalAgency
Consultant
BOW_File

Appendix E

Water Quality and Elutriate Testing Data

DRAFT Table X
Elutriate Analytical Data Summary
USS South Works
Chicago, IL

Parameter	Most Stringent Value [1]	Illinois Regulatory Value [2]	Calumet Harbor Sept. 2023 95% UCL [3, 4]	North Slip Sept. 2023 95% UCL [5]	DMAT-Elutriate	GTDT-Filtrate	SW-DRET01[7]		
Location					DMAT-Elutriate	GTDT-Filtrate	SW-DRET01[7]		
Date					9/09/2021	9/09/2021	9/16/2023	10/12/2023	10/12/2023
Sample ID					DMAT-ELUTRIATE_090920 21	GTDT-FILTRATE_090920 21	SW-DRET01-WAT_091620 23	SW-DRET01-ELUTRIATE DISSOLVED_101220 23	SW-DRET01-ELUTRIATE TOTAL_101220 23
Sample Type					Dredged Material Amendment Test Elutriate[5]	Geotextile Tube Dewatering Test Filtrate[6]	Raw Water (North Slip)	Elutriate, Dissolved	Elutriate, Total
Exceedance Key	Outline	**Bold**	Yellow	Orange					
			Red (if exceeds both)						
General Parameters [mg/l]									
Solids, total dissolved	250	1,000	172	206	--	--	171	--	159
Carbon, dissolved organic			--	--	--	--	--	2.70	--
Carbon, total organic			1.91*	1.97	60	10	1.80	--	2.70
Hardness, as CaCO3			141*	139	1800	200	133	118	119
Oil and Grease			1.6	2.3	190	6.9	2.4 J	< 1.4 UJ-	1.5 J
Dissolved Metals [ug/l]									
Antimony			ND (<1.8)	ND (<1.8)	16	< 1.8 U	--	3.03	--
Arsenic	150	—	2.0	1.9	--	7.3	--	2.31	--
Arsenic III	148	148	0.21	0.17	--	--	--	1.39	--
Arsenic inorganic	0.018	—	0.53	0.52	--	--	--	1.60	--
Arsenic V			0.35	0.36	--	--	--	0.21	--
Barium			21*	22	930	78	--	25.9	--
Beryllium			ND (< 0.22)	ND (< 0.22)	0.48 J	< 0.22 U	--	< 0.005 U	--
Cadmium	0.87	2.72	ND (<0.78)	ND (<0.78)	2.3 J	< 0.78 U	--	< 0.017 UJ	--
Calcium			35,229	35,399	--	--	--	30700	--
Chromium			0.96 [1] (<0.93)	ND (<0.93)	130	3.5 J	--	< 0.03 U	--
Chromium, hexavalent	11	11	0.0609	0.0743	< 2.9 U	< 2.9 U	--	--	--
Chromium, trivalent	91.88	**91.88**	2.4 [1] (<2.0)	2.4 [1] (<2.0)	**130**	3.2 J	--	--	--
Cobalt			0.53	0.54	20	0.46 J	--	0.029	--
Copper	11.21	**11.21**	ND (<4.6)	ND (<4.6)	**200**	8.7 J	--	0.73	--
Iron	1,000	**1,000**	ND (<79)	ND (<79)	**230000**	**3600**	--	1.8 J	--
Lead	**3.34**	**6.75**	ND (<1.3)	ND (<1.3)	**520**	**29**	--	0.198	--
Magnesium			12,444	12,805	--	--	--	11900	--
Manganese	2,162.69	2,162.69	ND (<2.3)	3.4	--	--	--	0.42	--
Mercury	0.77	1.10	0.00023	0.00026	--	--	--	0.00493	--
Nickel	64.93	**64.93**	0.66	0.67	**220**	4.2 J	--	6.09	--
Selenium	5	5	ND (<3.2)	ND (<3.2)	4.7 J	< 3.2 U	--	< 0.2 U	--
Silver	5.05	—	ND (<2.5)	ND (<2.5)	< 25 U	< 2.5 U	--	< 0.009 UJ	--
Thallium			ND (<2.6)	ND (<2.6)	< 2.6 U	< 2.6 U	--	0.018 J	--
Tin			ND (<3.2)	ND (<3.2)	23	< 3.2 U	--	< 0.03 UJ	--
Vanadium			ND (<0.94)	ND (<0.94)	35	1.6 J	--	0.26	--
Zinc	146.35	**146.35**	6.4 [1] (<6.2)	ND (<6.2)	**1100**	59	--	3.0	--
Total Metals [ug/l]									
Antimony	5.6	320	ND (<1.8)	ND (<1.8)	10	< 1.8 U	0.181	--	3.17
Arsenic	150	—	2.0	2.0	1670	6.7	1.08	--	2.66
Arsenic III			--	--	445	5.89	0.100	--	1.50
Arsenic inorganic			--	--	995	8.78	0.428	--	1.53
Arsenic V			--	--	550	2.89	0.328	--	0.03 J
Barium	220	5,000	22	23	910	82	21.8	--	27.9
Beryllium	16.69	—	ND (<0.22)	ND (<0.22)	< 0.22 U	< 0.22 U	< 0.005 U	--	< 0.005 U
Cadmium			ND (<0.78)	ND (<0.78)	< 0.78 U	< 0.78 U	< 0.008 U	--	0.038 J
Calcium	116,000	—	35,229	35,399	550000	26000	34600	--	31100
Chromium			1.4	1.4	38	2.7 J	0.21 J	--	0.55
Chromium, hexavalent			--	--	< 2.9 U	< 2.9 U	--	--	--
Chromium, trivalent			--	--	38	< 2.9 U	--	--	--
Cobalt	19	—	ND (<0.42)	ND (<0.42)	12	< 0.42 U	0.038	--	0.112
Copper	1000	—	ND (<4.6)	ND (<4.6)	73	< 4.6 U	0.47	--	2.01
Iron	300	—	114	125	140000	3000	37.7	--	170
Lead			ND (<1.3)	ND (<1.3)	200	27	0.119	--	9.62
Magnesium	82,000	—	12,699	12,910	74000	19000	12100	--	12000
Manganese	50	—	7.5	11.7	--	--	6.96	--	55.8
Mercury	0.0013	**0.0013**	0.00065	0.00066	**66**	**0.033**	< 0.0006 UB	--	**0.0111**
Nickel	610	—	1.2 [2] (<0.59)	1.1 [1] (<0.59)	160	4.0 J	0.34	--	8.38
Selenium	1.5	1,000	ND (<3.2)	ND (<3.2)	6.7 J	< 3.2 U	< 0.2 U	--	< 0.2 U
Silver	3.2	**5**	ND (<2.5)	ND (<2.5)	**< 25 U**	< 2.5 U	< 0.009 U	--	0.019 J
Thallium	0.24	3.7	ND (<2.6)	ND (<2.6)	< 2.6 U	< 2.6 U	0.017 J	--	0.021 J
Tin	180	—	ND (<3.2)	ND (<3.2)	8.5 J	< 3.2 U	< 0.04 UBJ	--	0.07 J
Vanadium	27	—	0.98 [2] (<0.94)	1.0 [2] (<0.94)	11	1.6 J	0.54	--	0.42
Zinc	120	—	7.0 [1] (<6.2)	ND (<6.2)	420	50	0.6 J	--	8.3
Volatile Organic Compounds [ug/l]									
Benzene	1	310	ND (<0.46)	ND (<0.46)	< 4.6 UH	< 0.46 U	--	--	--
Ethyl benzene	14	14	ND (<0.34)	ND (<0.34)	< 3.4 UH	< 0.34 U	--	--	--
Toluene	51	51	ND (<0.45)	ND (<0.45)	< 4.5 UH	< 0.45 U	--	--	--
Xylene, m & p			ND (<0.81)	ND (<0.81)	< 8.1 UH	< 0.81 U	--	--	--
Xylene, o			ND (<0.31)	ND (<0.31)	< 3.1 UH	< 0.31 U	--	--	--
Xylene, total	27	490	ND (<0.81)	ND (<0.81)	< 8.1 UH	< 0.81 U	--	--	--
Semivolatile Organic Compounds [ug/l]									
1-Methylnaphthalene	6.1	12	0.010 [1] (<0.0078)	ND (<0.0079)	0.34 J	0.16 J	< 0.0038 U	0.38	0.42
2-Methylnaphthalene	4.7	12	0.022 [1] (<0.011)	0.011 [1] (<0.011)	0.22 J	0.17 J	0.0033 J	0.14	0.25
Acenaphthene	15	62	ND (<0.013)	ND (<0.013)	< 0.096 U	< 0.040 U	< 0.0047 U	0.064	0.093
Acenaphthylene	13	15	ND (<0.010)	ND (<0.010)	< 0.062 U	< 0.026 U	< 0.0037 U	0.030	0.053
Anthracene	0.02	0.53	ND (<0.016)	ND (<0.016)	< 0.096 U	< 0.040 U	< 0.0039 U	0.033	0.12
Benz(a)anthracene	0.0012	**0.16**	0.017 [1] (<0.0092)	ND (<0.018)	**0.25 J**	0.084 J	< 0.0028 U	0.0084 J	0.12
Benzo(a)pyrene	0.00012	**0.016**	**0.017 [1] (<0.0080)**	0.013 [2] (<0.0081)	**0.26 J**	**0.085 J**	< 0.0046 U	0.0055 J	**0.11**
Benzo(b)fluoranthene	0.0012	**0.16**	0.017 [1] (<0.0080)	ND (<0.021)	**0.36 Jc**	0.15 Jc	< 0.0044 U	0.0093 J	**0.16**
Benzo(g,h,i)perylene	0.012	—	ND (<0.023)	ND (<0.023)	< 0.29 U	< 0.12 U	< 0.0031 U	0.0055 J	0.094

DRAFT Table X
Elutriate Analytical Data Summary
USS South Works
Chicago, IL

			Location	DMAT-Elutriate	GTDT-Filtrate	SW-DRET01[7]		
			Date	9/09/2021	9/09/2021	9/16/2023	10/12/2023	10/12/2023
			Sample ID	DMAT-ELUTRIATE_090920210	GTDT-FILTRATE_09092021	SW-DRET01-WAT_09162023	SW-DRET01-ELUTRIATE DISSOLVED_10122023	SW-DRET01-ELUTRIATE TOTAL_10122023
			Sample Type	Dredged Material Amendment Test Elutriate[5]	Geotextile Tube Dewatering Test Filtrate[6]	Raw Water (North Slip)	Elutriate, Dissolved	Elutriate, Total
Parameter	Most Stringent Value [1]	Illinois Regulatory Value [2]	Calumet Harbor Sept. 2023 95% UCL [3, 4]	North Slip Sept. 2023 95% UCL [5]				
Benzo(k)fluoranthene	0.012	1.6	0.022 [1] (<0.0057)	ND (<0.024)	0.33 Jc	0.13 Jc	< 0.0032 U	< 0.0033 U	0.048
Chrysene	0.12	16	ND (<0.016)	0.018 [1] (<0.016)	0.57	0.18	< 0.0037 U	0.028	0.28
Dibenz(a,h)anthracene	0.00012	**0.016**	**0.017 [1] (<0.013)**	**0.027 [1] (<0.013)**	**< 0.34 U**	**< 0.14 U**	< 0.0027 U	< 0.0028 U	**0.019 J**
Fluoranthene	0.8	1.8	0.025 [2] (<0.017)	ND (<0.017)	0.40 J	0.23	< 0.011 U	0.061	0.39
Fluorene	19	16	0.012 [1] (<0.010)	ND (<0.010)	< 0.094 U	0.065 J	< 0.0041 U	0.13	0.21
Indeno(1,2,3-cd)pyrene	0.0012	**0.16**	ND (<0.012)	0.021 [1] (<0.012)	**< 0.34 U**	< 0.14 U	< 0.0028 U	0.0040 J	0.078
Naphthalene	21	68	0.052 [1] (<0.022)	ND (<0.023)	< 0.084 U	0.21	< 0.026 UB	0.045	0.094
Phenanthrene	2.3	3.7	0.028 [1] (<0.022)	ND (<0.022)	< 0.058 U	0.23	< 0.0054 U	0.26	0.65
Pyrene	4.6	3,500	ND (<0.022)	ND (<0.022)	0.62	0.30	< 0.0057 U	0.066	0.36
Polychlorinated Biphenyls [pg/l]									
PCB-105			11.1	21.7	12600	71000	--	3590	72100
PCB-106/118			26.3	65.4	28500	180000	--	9030	177000
PCB-114			1.44 [2] (<0.842)	2.39 [2] (<0.690)	649	4150	--	189	4060
PCB-123			0.915	1.66 [3] (<0.632)	551	3160	--	94.0	1720
PCB-126			1.45 [2] (<0.805)	0.666 [1] (<0.769)	37.9	207	--	27.0 EMPC	527
PCB-156			2.98	6.57	3220	21800	--	1010	19800
PCB-157			0.886	1.44	723	5030	--	232	4280
PCB-167			1.44	2.56	1100	7870	--	327	6250
PCB-169			ND (<0.849)	ND (<0.398)	14.4 EMPC	56.4	--	< 2.93 U	< 8.84 U
PCB-189			0.498 [2] (<0.553)	0.764 [3] (<0.357)	98.7	697	--	26.6	572
PCB-77			3.20	2.53	274	1380	--	65.7	2180
PCB-81			ND (<0.725)	0.448	17.3 EMPC	90.1	--	156	2240
Sum of PCB Congeners [3]	26	**26 HHS** **120 WS**	**46.7**	**107.1**	**47785**	**295441**	--	**14747**	**290729**
Total Petroleum Hydrocarbons [ug/l]									
Total Petroleum Hydrocarbons C12-C25			--	--	--	--	< 29 UB	300	1200
Total Petroleum Hydrocarbons C25-C36			--	--	--	--	< 55 UB	220	3400