



Vessel SS William A. Irvin
Relocation
Duluth, MN



CHASE DEWHIRST, PE
AMI Consulting Engineers, PA - Multidiscipline Engineering Firm
Marine | Civil | Structural | Mechanical | Environmental



OWNER(S)

- City of Duluth
- Duluth Entertainment Convention Center (DECC)

ENGINEER:

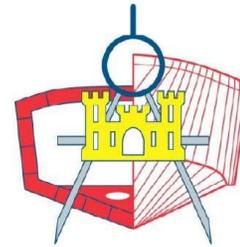
- AMI Consulting Engineers, PA

CONSULTATION:

- United States Army Corp of Engineers (USACE) Marine Design Center (MDC)
- United States Coast Guard (USCG)
- Minnesota Pollution Control Agency (MPCA)

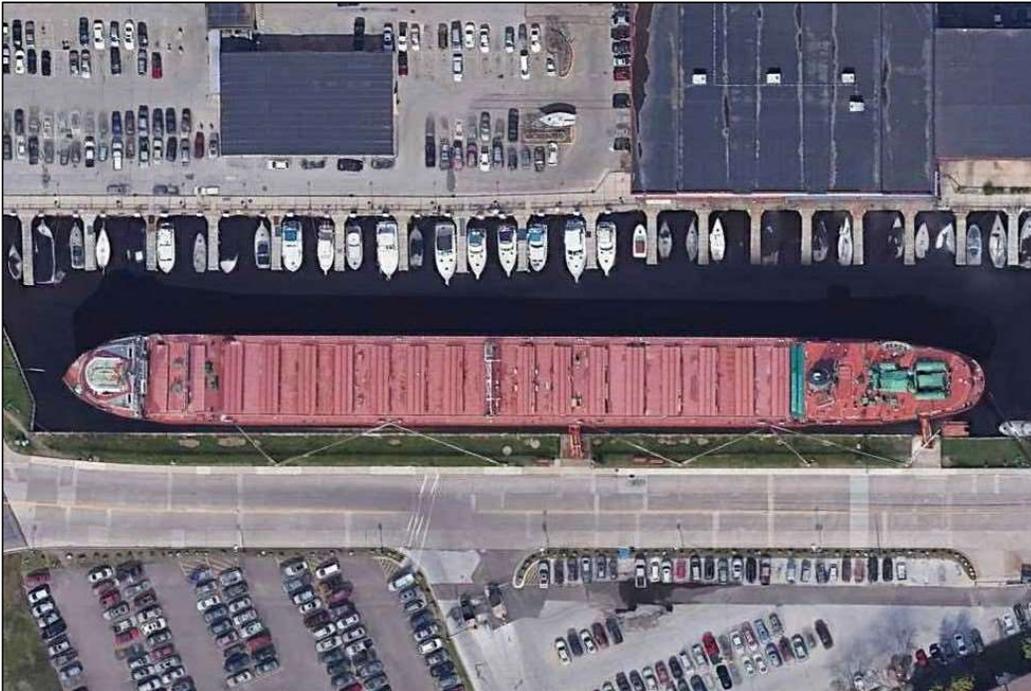


Minnesota Pollution Control Agency



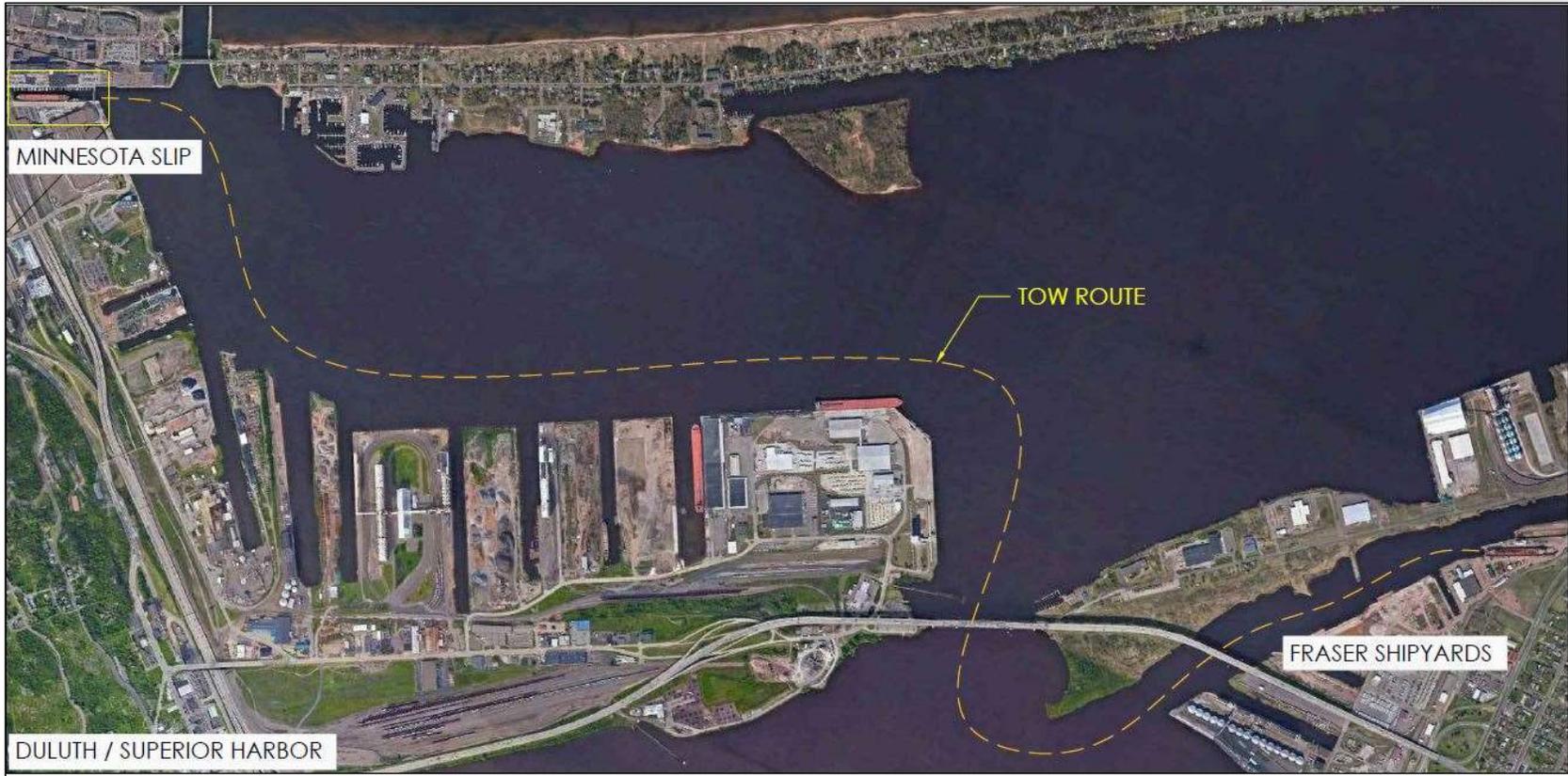
Duluth Entertainment
Convention Center



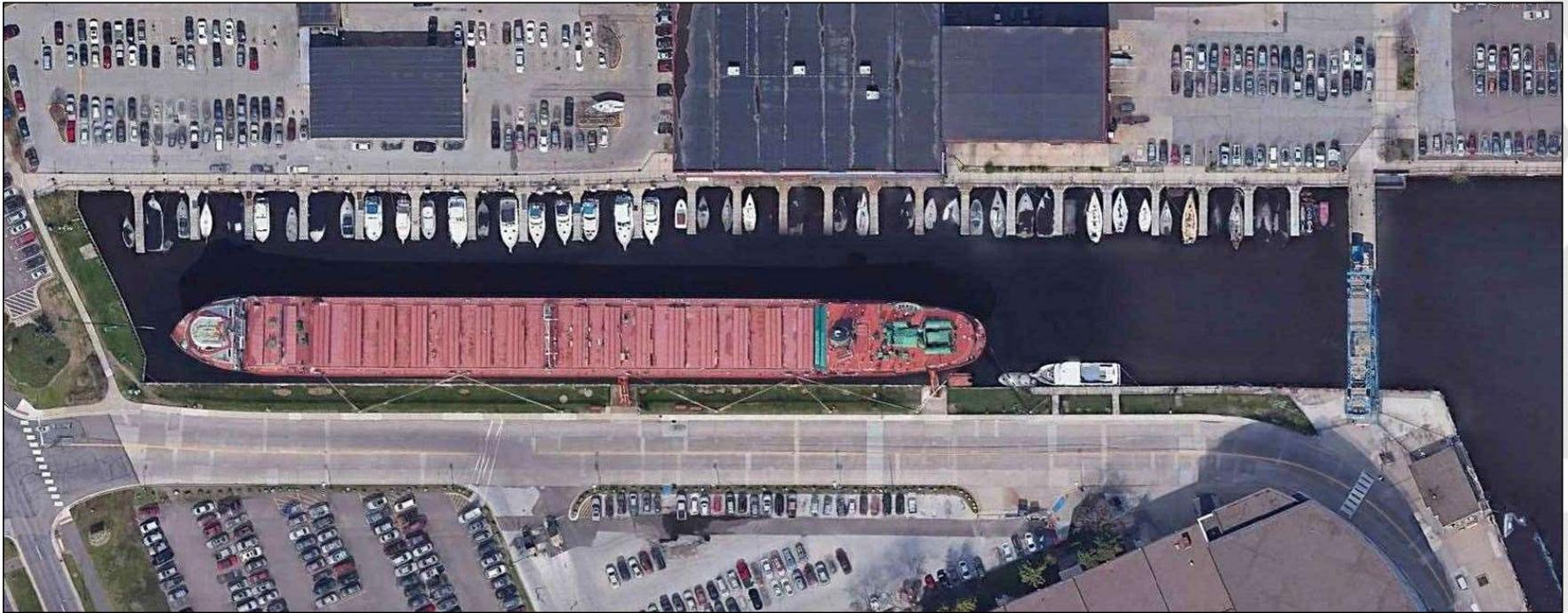


Reason(s) for Relocating of Irvin

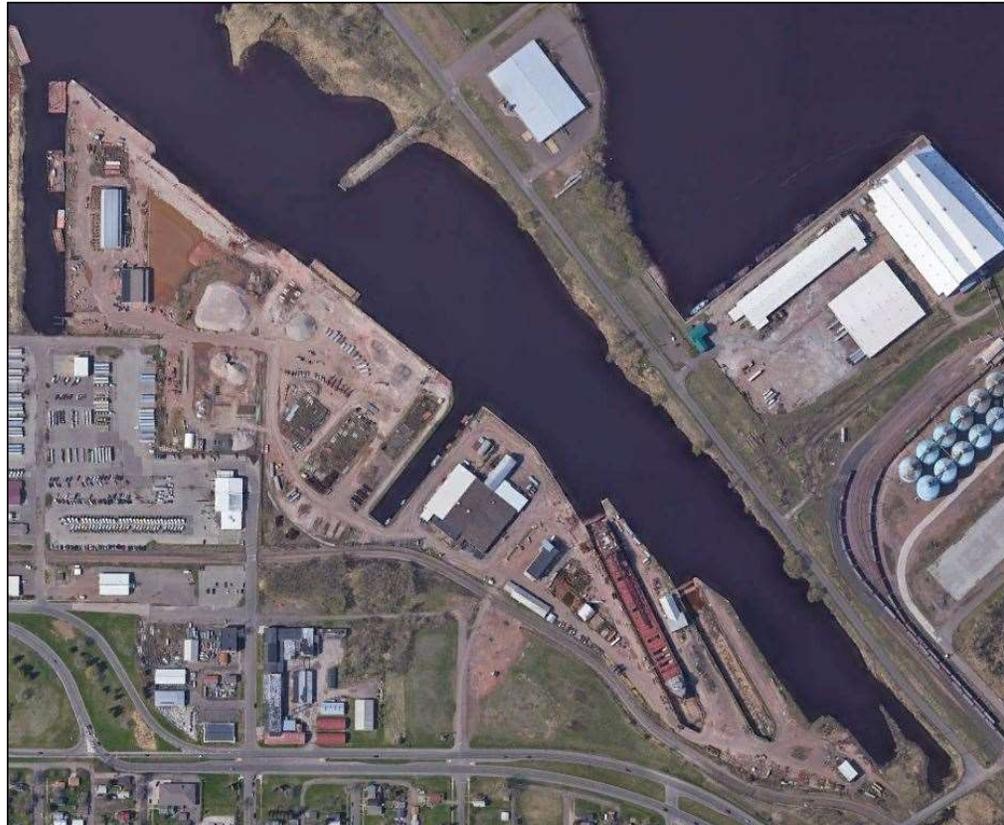
- The MPCA plans to remediate the contaminated sediment in Mn Slip in late fall of 2018.
 - Existing sediment materials leveled to one elevation
 - Contaminated sediment capped with a clean granular fill to 12' below 1985 IGLD LWD = 601.1'
 - Can not be completed while vessel is in MN Slip
- The Irvin is anticipated to be placed in dry-dock at Fraser Shipyards:
 - Vessel further inspected for deterioration & possible rehabilitation of deterioration.
 - Hull will be sand blasted and repainted



Proposed Tow Route

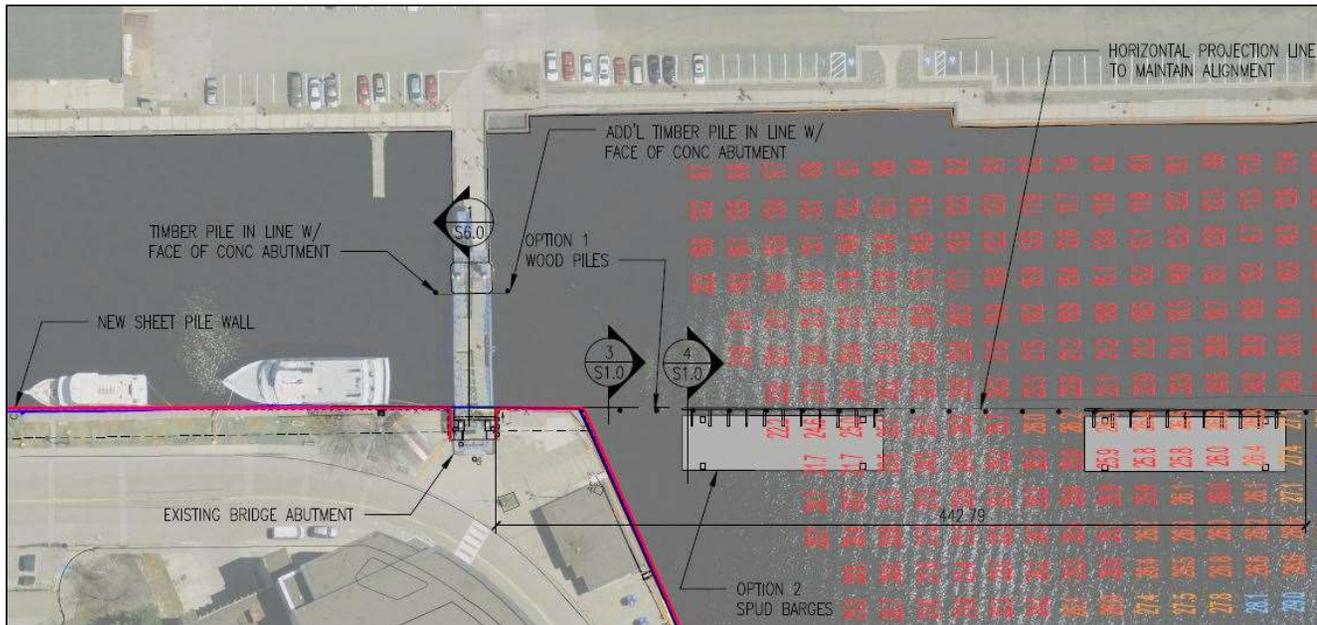


Current Location of Irvin: MN Slip



Final Destination: Fraser Shipyards



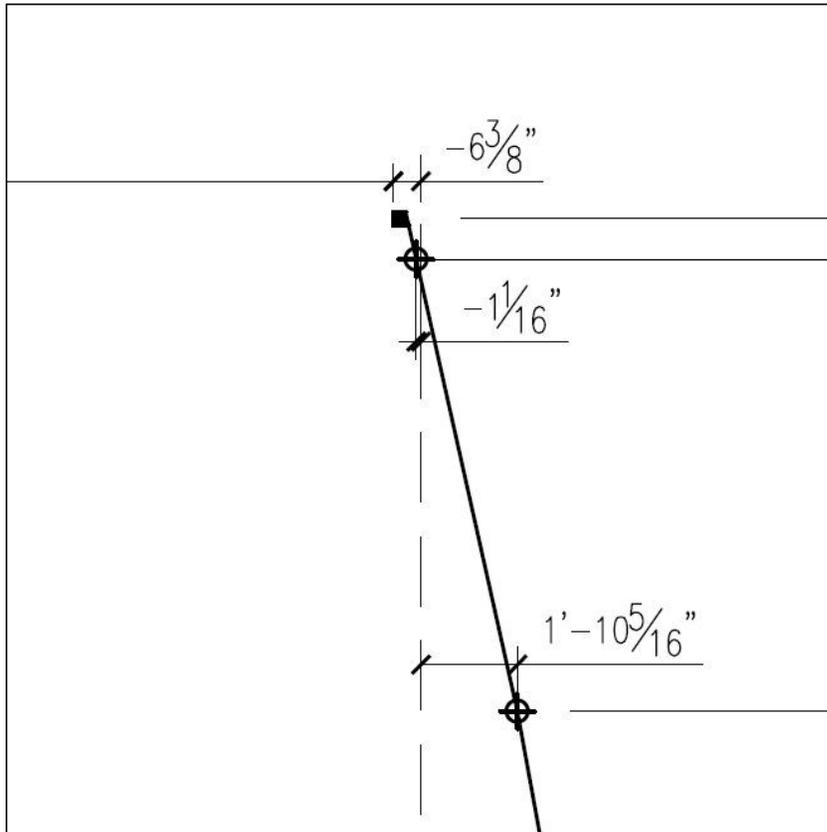


Temporary Guide Structures

- Maintain Proper Alignment of Vessel during Relocation Process
 - Spud Barges
 - Dolphins
- Protection of Existing Structures
- The intent of the provided drawings & specifications is to provide minimum standards for the tow plan

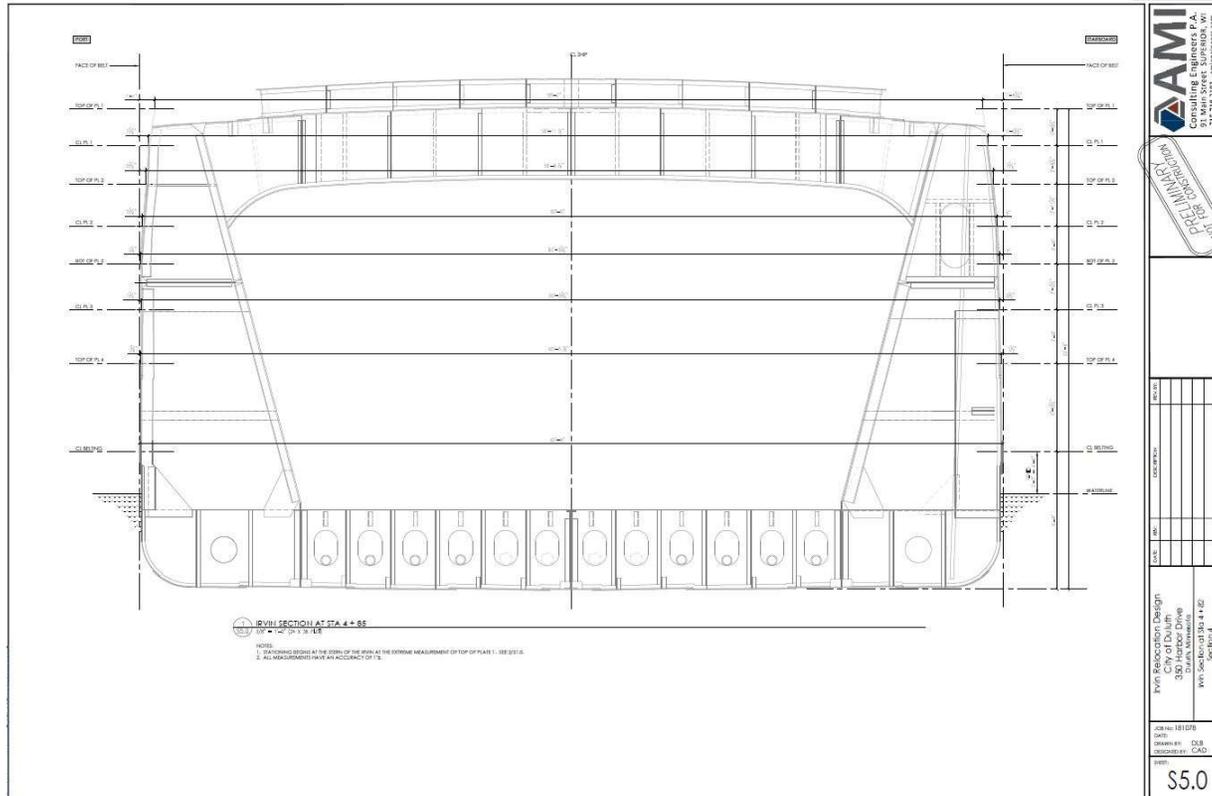


Minnesota Slip Pedestrian Bridge

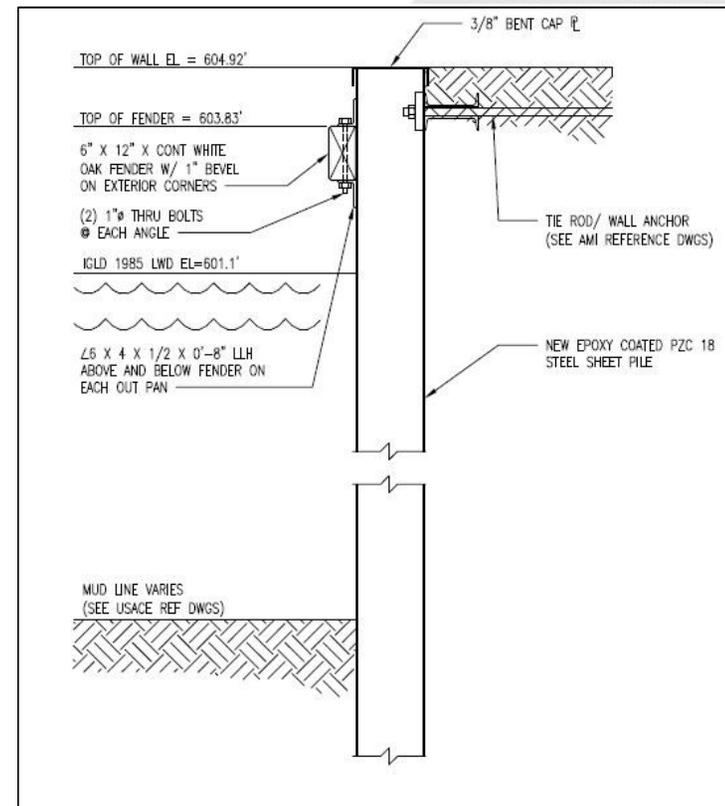
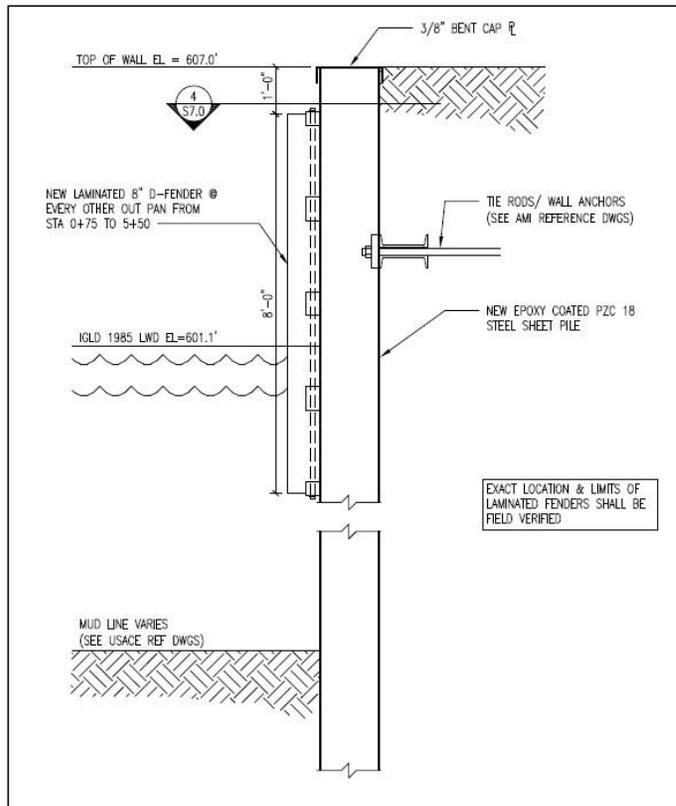


Minnesota Slip Pedestrian Bridge – Steel Overhang

- When bridge is in the up position, the steel members of the bridge overhang the face of the concrete abutment on the Canal Park (East) side.
- City of Duluth will coordinate with a separate contractor to partially disassemble bridge so steel members are behind the face of the concrete abutment of Canal Park (East) side.



Vessel SS William A. Irvin Beam



DECC Seawall Condition



Irvin Current Condition

- Bow Anchors (3rd Anchor)
- Stern Anchor
 - Decorative Anchor
 - Not in Operation / Pin
- Access Platforms
 - Midship
 - Stern
- Some Navigational Lights are Operational
- North America Marine, Inc
 - Marine Survey Report
 - Ballast Tanks
- Deck Winches
 - Five of Six Operational
- Propeller Shaft & Rudder Lock in Position
- See Specifications for Additional Information



CITY OF DULUTH
TEMPORARY RELOCATION OF THE WILLIAM A. IRVIN 181078

SECTION 35 0099
DEAD VESSEL TOW

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Minimum requirements of the dead vessel tow.
 2. Weather & equipment restrictions.
 3. Minimum strength criteria for protection systems of existing structures.

1.2 RELATED DOCUMENTS AND REFERENCES

- A. Society for Testing and Materials (ASTM International).
- B. Contract, the General Requirements Sections of Division 00 & 01 and the Drawings apply to Work of this Section.
- C. Minnesota Department of Transportation (MnDOT) Standard Specifications for Construction.
- D. City of Duluth, Minnesota Construction Standards 2017.
- E. United States (US) Navy Towing Manual; SL740-AA-MAN-010 (Revision 3, Dated 1 July 2002).

1.3 UNIT PRICES

- A. Contractor shall provide labor, equipment, tools, materials, and incidentals necessary to perform the Work as detailed on the contract drawings. Contractor shall include proper disposal of all materials not suitable or not approved for reuse on the Project.

1.4 SUBMITTALS

- A. Schedule indicating Work sequence.
1. Coordinate the schedule to allow sufficient time for required Quality Assurance (QA) testing & inspection, and installation of work of Related Sections.
 2. Coordinate with continuations of Owner's onsite operations.
- B. Experienced Land Surveyor qualifications and supervision.
- C. Pre-Work photographs or video before Work begins.
- D. Test reports from the independent testing facility on materials showing compliance with the Specifications.
- E. Copies of all permits received along with any special conditions or requirements of compliance.

DEAD VESSEL TOW

35 0099- 1

Restrictions

- Weather:
 - Sustained Wind Speed = 5 Mph
 - Gust Wind Speed = 10 Mph
 - Wave Height = 6 Inches
 - Currents = 0.5 feet/second
 - Ice shall not be visible in Harbor, or there is no risk of ice impacting movement operations
- Max Speed of Vessel out of & into MN Slip = 1 foot Per Every 4 Seconds
 - Contractor shall have means to start & stop Vessel in MN Slip
- MPCA Restrictions or Requirements within MN Slip:
 - Prior to Capping
 - Installation of piles or dolphin (BMP's)
 - After Capping
 - Installation of piles or dolphins (BMP's repair of capping material)
 - Tugs limited to "Tender Tugs" with max draft of 7 feet & 400 HP
 - See Specifications for additional information



Consulting Engineers P.A.

Sequence - Bidding & Construction

- Three Phases
 - Bidding
 - Preparing for the Tow
 - Tow of Vessel
- Phase I: Bidding Phase
 - Contractor Submit Cover Letter, Background Information, Resume, References, Preliminary Tow Plan & Project Costs
 - Evaluation of Bids or Interviews as Necessary
 - Contractor shall be Prepared to Present Preliminary Tow Plan if Necessary
- Phase II: Preparing for Tow
 - Detailed Tow Plan for Review by City, DECC, USACE MDC, USCG & Regulatory Agencies
 - Verification of Bridge Opening & Vessel Beam
 - Prepare the Vessel for Tow
- Phase III: Movement of Irvin
 - Final Inspections & Coordination

Schedule - Bidding & Construction

- Questions Due = Thursday June 28th, 2018
- Questions Answered = Monday July 2nd, 2018
- Proposal Deadline = Thursday July 12th, 2018
- Proposal Evaluation = July 16th to July 27th, 2018
- Anticipated Council Approval = Monday August 13th, 2018
- Final Day to Remove Vessel = September 30th, 2018
- Vessel Return to MN Slip = Spring of 2019



QUESTIONS

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