DECC SEAWALL PROJECT
Duluth, MN

CHAD SCOTT, PE
CHASE DEWHIRST, PE
AMI Consulting Engineers, PA - Multidiscipline Engineering Firm
Marine | Civil | Structural | Mechanical | Environmental
Limits of Construction: Inner End of MN Slip & STA 0+00 to 12+08
GENERAL CONSTRUCTION OVERVIEW

- Install New Epoxy Coated Seawall – 54,810 SF
  - 1,218 LF x 45’ Length SSP
  - C12x30 Double Wale
  - 1-3/4” Tierods
  - Timber Rub Rails

- Install New Tieback System – 1,140 LF
  - HP10x42 Piling
  - W14x120 Transfer Beam
  - Design Helical Anchors

- Install New Bollards & Foundations – 8 EA

- Design & Install Camel System – 1 LS

- Demo portions of existing seawall

- Demo Vista Fleet Building

- Demo Vista Temporary Platform

- Civil / Mechanical / Electrical Work

- Alternatives
  - #1 – Curb & Gutter / Bike Path
  - #2 – Remaining Concrete Flatwork & Sidewalks
  - #3 – Mechanical Material Installation
  - #4 – Electrical Installation
  - **BIDS DUE 11/8/17**

GENERAL CONSTRUCTION OVERVIEW/CONT

- ADDENDUMS
  - Bid form to include Electrical & Updated Quantities
  - Documentation further explaining what is included in each bid item
  - Final Construction Documents
  - Historical Documents

OWNER FURNISHED MATERIALS

- Two Request For Bids Currently Out
  - Structural Steel (Bid Opening 10/31/17)
    - Steel Sheet Pile
    - HP10x42 Steel Piling for Tieback System
    - W14x120 Steel Transfer Beam for Tieback System
    - 3/8” Bent Steel Cap
  - Application of High-Performance Coating (Bid Opening 11/7/17)

***All Owner furnished materials are based on Neat Line Quantities per the Bid Form. The Contractor is responsible for any additional materials including the installation of a high-performance coating on the steel sheet piling per the technical specifications.***
SITE CONDITIONS & GENERAL INFORMATION

- Scope of Work Limits
  - MN Slip Inner End, and STA 0+00 to 12+08
- Schedule
  - Substantial Completion by June 1, 2018
  - Final Completion by June 15, 2018
- Liquidated Damages
  - $1,000 per Day after June 1, 2018
- Vista Fleet Building
  - Asbestos
  - Underground Storage Tank
  - Electronics
- Contaminated Soils
- Tight Work Area
  - May need to shore roadway during Helical Anchor Installation
  - Work restricted within 30’ of existing retaining structure
    - Wood Relieving Platform
    - One lane closure Harbor Drive

SITE CONDITIONS & GENERAL INFORMATION/CONT.

- Winter Work
- Staging Areas
  - On-site – DECC
  - Off-site
- Permits
  - MPCA
  - Building Demo
  - Lane Closures
  - DNR, USACE – Pending

OWNER FURNISHED MATERIAL SCHEDULE

- City Council Meeting: November 20, 2017
- Steel Sheet Piling & Cap, H Piling, W Beams
  - FOB DECC: December 18, 2017
- High-Performance Coating on Steel Sheet Piling
  - FOB DECC: February 2, 2018
Limits of Construction: Inner End of MN Slip & STA 0+00 to 12+08

Onsite Staging Area
MN SLIP INNER END

- Existing Steel Sheet Pile
- New Steel Sheet Pile Cap
MN SLIP INNER END – Existing Steel Sheet Pile
STA 0+00 to 6+02

- Wakefield Piling
- Pile Supported Concrete
- Dock Cap
STA 0+00 to 6+02 – Wakefield Piling
STA 0+00 to 6+02 – Pile Supported with Wakefield Piling
STA 0+00 to 6+02 – Pile Supported with Wakefield Piling
STA 6+02 to 9+00 & 9+25 to 9+85

- Wood Relieving Platform
- Partial Wall Demolition
STA 6+02 to 9+00 & 9+25 to 9+85 – Wood Relieving Platform
STA 6+02 to 9+00 & 9+25 to 9+85 – Wood Relieving Platform
DOCK WALL DEMOLITION

- Demo Temporary Vista Platform
- Remove wood platform, Vertical Piling, portions of wall, and misc. debris as noted.
DOCK WALL DEMOLITION

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DOCK WALL DEMOLITION

- Demo Temporary Vista Platform
- Remove wood platform, Vertical Piling, portions of wall, and misc. debris as noted.
STA 9+00 to 9+25
- Slip Bridge Abutment
STA 9+00 to 9+25 – Slip Bridge Abutment

EXISTING BRIDGE ABUTMENT
EL = 606.70' +6

EXISTING SLIP BRIDGE ABUTMENT
HLD EL = 601.1' VLD 1985

4 X 12 TIMBER TYP

12" OA WOOD PILE TYP
(TO REMAIN)

STEEL PILE TYP
(TO REMAIN)

2 X 12 VERTICAL TIMBERS
EVERY 44";

12 X 12 HORIZONTAL TIMBER WALL

MUD LINE VARIES 16.8 TO 16.9 FT

SECTION @ SLIP BRIDGE ABUTMENT
@ STA 9 + 00 TO 9 + 25

SCALE 1/4" = 1'-0"

SEE EXISTING REFERENCE DRAWINGS -
CITY OF DULUTH / MINNESOTA SLIP PEDESTRIAN BRIDGE
STA 9+00 to 9+25 – Slip Bridge Abutment
STA 9+85 to 12+08

- Crib Dock Wall
STA 9+85 to 12+08 – Crib Supported Concrete Structure
STA 9+85 to 12+08 – Crib Supported Concrete Structure
OTHER REMARKS

- Survey GPS Points for Seawall
  - Example Shown at STA 6+02
- Key Submittals
  - Driving Logs & Alignment Checks – SSP (Daily)
  - Driving Logs & Alignment Checks – H Piles (Daily)
  - Experienced Surveyor
  - Helical Anchor Design
  - Camel System Design
- Irvin Cannot Leave Slip Prior to Dock Wall Rehabilitation
- AMI Full Time Project Management
QUESTIONS ON MARINE?
ELI RUPNOW, PE
AMI Consulting Engineers, PA
CIVIL / ENVIRONMENTAL

- Demolition
  - Base
    - Vista Fleet Building
    - Irving Loading Platforms
    - Concrete flatwork, bollards, signage, and other misc. Items
CIVIL / ENVIRONMENTAL

- Demolition
  - Add Alt 1
    - 1167 LF of Curb and Gutter
    - 1200 SY of Concrete Pavement
    - Remove Storm Structure and Adjust Frame and Casting
  - Add Alt 2
    - Concrete Walks
      - 400 SF
CIVIL / ENVIRONMENTAL

- Site
  - Base
  - Vista Loading Ramps and Platform
  - Planter Boxes and Stairs
  - Irving Loading Platforms
CIVIL / ENVIRONMENTAL

- Site
  - Add Alt 1
    - 1098 ft 8 in Curb
    - 1208 LF of 10 ft Wide Bike Trail
    - 6 Pedestrian Ramps
    - Storm Structure
CIVIL / ENVIRONMENTAL

- Site
  - Add Alt 2
    - 10100 SF Concrete Sidewalk

STA: 5+00
MECHANICAL

- Installation
MECHANICAL

- Installation
QUESTIONS ON MECHANICAL?
SCOTT HAEDTKE
Gausman & Moore
ELECTRICAL

- Demolition
ELECTRICAL

- Installation
ELECTRICAL

- Installation
ELECTRICAL

- Installation
ELECTRICAL

- Installation Details
QUESTIONS ON ELECTRICAL?