



January 18, 2022

Purchasing Division  
City of Duluth  
City Hall, Room 120  
411 West 1st Street  
Duluth, MN 55802

**Re: Final Design Phase Services for Duluth Seawall, Baywalk and Harbor Drive**  
AMI Project # 211016

Sir or Madam,

We are pleased to submit our proposal to the City of Duluth (City) for Coastal and Marine Structural engineering services for the Final Design Phase thru the Construction Administration Phase for the improvements to the Duluth Seawall, Baywalk and Harbor Drive (Harbor Plaza). AMI acted as the Marine Coastal and Marine Structural Engineering firm during the Concept Pre-Design phase, providing material support and assistance to the Landscape Architect firm during public/ stakeholder engagement, preparation of conceptual design, consultation with stakeholders, and cost estimating. During this time, AMI also provided consultation to the MN State Historic Preservation Office (SHPO), on behalf of the City of Duluth and the Economic Development Administration (EDA), during the Section 106 consultation process.

AMI also provided coordination and conceptual designs for cruise ship docking options along the new seawall as well as preliminary security layouts for the sterile corridor that is required for the transfer of cruise ship passengers from the cruise vessels to the Duluth Entertainment Convention Center (DECC).

#### **Project Background and Understanding**

The City has requested to separate the Final Design phase into two contracts: one for AMI to provide the Coastal & Marine Structural Engineering services and one for Confluence to provide Landscape Architecture services with SEH serving as the Civil Engineering Design team.

During the Pre-Design phase, Confluence submitted a cost alignment package that outlined baseline cost estimates for the new seawall with options for accommodating the mooring and berthing of cruise ships along the seawall. The cost alignment package also included design options for the soft and hardscapes behind the new seawall. The City has elected to pursue Option 3 for the Seawall design which will include dredging to a depth of 24' below the International Great Lakes Datum (IGLD) Low Water Datum (LWD) of 601.1' as well as additional fenders and bollards to accommodate cruise ship docking. The City has also elected to pursue the Harbor Plaza design which includes removing a portion of harbor drive between the Great Lakes Aquarium and Pioneer Hall and providing street improvements to 5<sup>th</sup> Avenue and Harbor Drive. The Cost Alignment Package is enclosed with this proposal for reference.

## **Work Plan**

### **Final Design**

After completion of the pre-design phase, AMI, as the Coastal & Marine Structural Engineer, will lead the project thru final design, bidding and construction. AMI will be responsible for finalizing the design of the seawall, wave-overtopping wall, dredging, fenders, bollards, and electrical appurtenances. AMI has selected Gausman & Moore, a Division of Ayres, (G&M) to provide the Electrical Engineering services for the seawall and Harbor Plaza design. Confluence and SEH will be responsible for designing and providing fully integrated construction documents for the Harbor Plaza Design and storm water systems under a separate contract by incorporating City approved layouts developed by Confluence during the pre-design phase. The Final Design development phase is anticipated to begin after approval from City Council.

### **Permitting**

AMI was responsible for obtaining the required permits for the initial phase of the DECC Seawall rehabilitation. Prior to submitting new permit applications, the existing permits and supporting information developed for obtaining these permits will be reviewed. Information from the previously obtained permits will be combined with the newly developed layouts and schematic designs so the entire project can be submitted to the required regulatory agencies.

Since the permitting process can take many months to complete, it is important to get quality information to the regulatory agencies as soon as possible after the predesign phase has been completed. If necessary, conservative quantities will be determined for the application to the Minnesota Department of Natural Resources (MnDNR), City of Duluth and the United States Army Corps of Engineers (USACE). The USACE could potentially include an additional Section 106 review by SHPO which has been known to extend the permitting process. AMI will lead and manage the permitting process and answer questions from the permitting agencies as needed to process the permits in a timely manner.

### **Design Documents**

AMI will be responsible for coordinating with Confluence, SEH, and Gausman & Moore while leading the overall project. AMI will also incorporate any necessary design alterations associated with the Seawall that results from the Design and cruise ship coordination efforts with all involved Engineer teams, Stakeholders, and the City. Draft versions of the project plans, technical specifications, specific verbiage for the City to include in their front-end documents and preliminary cost estimates will be developed.

We anticipate this project will consist of one full plan set incorporating Civil, Marine Structural, Coastal, Electrical, Mechanical and Landscaping designs. AMI will be responsible for developing the project plans and specifications for the marine structural, coastal, electrical & mechanical portions of the project. The electrical and mechanical portions are crucial elements for the success of this project to meet the City's and stakeholder's requirements by providing water and power to cruise vessels that will be utilizing the dock, trail lighting, and power for any potential vendors which may utilize the newly redesigned space along Harbor Drive. The civil plans and specifications will be developed by SEH. AMI will coordinate the different disciplines and firms and compile one set of plans and specifications that is well-organized and detailed so Contractors can easily interrupt the design.

A 60% design plan set, project specifications and cost estimations will be submitted to the City of Duluth and pertinent stakeholders for review and comments. The plan set, technical specifications, and cost estimates will be then adjusted according to comments received by the City and Stakeholders. AMI will then produce and submit a 90% complete plan set, technical specification set and cost estimation for the City and pertinent stakeholders for final review and comments. AMI anticipates that four meetings will be necessary following review of the 90% submittal. AMI will be responsible for compiling all of the final construction documents into the bid set.

### **Meetings and Coordination**

Due to this project involving multiple stakeholders and interested parties, additional project coordination/planning will be provided by AMI the Coastal & Marine Structural Engineering firm. Since each party involved has different project components they are invested in, AMI will make sure each requirement is taken into account by maintaining constant communication. Additional meetings with the Cruise Ship companies will be complete, as needed, to ensure that the necessary infrastructure for their vessels is in place. AMI will also coordinate additional planning meetings with the US Coast Guard (USCG), Duluth Seaway Port Authority (DSPA), U.S. Customs and Border Protection (CBP), and Homeland Security to meet the requirements for site security. AMI anticipates a total of 6 meetings will be required for cruise ship coordination.

Representatives from the EDA will also be engaged during this phase of the project. Coordination and reporting on the progress of the project is a requirement for fulfilling the EDA Grant. Specific language and site requirements of the EDA will be discussed and determined for inclusion into the final design.

### **Bid Documents**

The bid documents will include the construction plan set, technical specifications, cost estimate, bid form and supplemental verbiage for the City to include in the front-end documents including any EDA related requirements. The bid documents will reflect the review comments from the 90% final design submittal and will be submitted to the City. Permits required by the MnDNR & USACE will be included in the bid documents to inform potential Contractors of any construction requirements and restrictions. All bid documents must be reviewed and approved by the EDA prior to bidding. This review process can take as long as two weeks and could vary greatly depending on the number of comments received by the EDA. Good communication & early involvement from the EDA will be crucial to the success of the project.

### **Bidding Phase**

AMI will assist the City of Duluth throughout the bidding process by preparing an agenda for the pre-bid meeting, attending the pre-bid meeting, taking meeting minutes, responding to Contractor questions, preparing addenda, and evaluating the bids. In addition, AMI will also produce a presentation for the potential bidders that will be given during the pre-bid meeting. The presentation will identify the construction limits, existing historical structures within the construction limits, and a breakdown of the elements of construction (marine structural, civil, electrical, and mechanical designs). AMI will also generate the materials testing schedule for the City to solicit quotes from third party material testing agencies as required.

### **Final Value Engineering:**

After the bids have been received by the City of Duluth, AMI will provide value engineering services to review Contractor's bids. Value Engineering, once bids are received, can be

extremely valuable to a project's success and budget by discussing the schedule of values with Contractors and their rationale for their bid price. This step ensures that there are no misunderstandings on the bid. AMI prides itself on finding creative solutions to problems which Contractors may present, however, additional thought and careful execution may be required depending on Funding requirements. The inclusion, removal or substitution of materials and methods without sacrificing functionality of the final design will be a requirement of the EDA.

### **Construction Administration & Inspection Phase**

#### **Construction Survey and Layout**

AMI will establish horizontal and vertical control line and grade prior to construction of the seawall improvements. AMI will work with a licensed land surveyor to determine a sufficient number of control points to permit the construction contractor to construct the seawall and Harbor Plaza design within the construction tolerances established in the Project plans and specifications.

#### **Dedicated, Local, Onsite Representation**

AMI will ensure that approved trained personnel are on-site 100% of the time throughout the duration of construction. AMI will conduct a kick-off meeting prior to construction to establish a baseline schedule, site access, lay-down areas, hold-points, and other milestones during construction. AMI will participate in daily job briefing and provide weekly observation progress reports or any other reports as necessary to support the project. AMI will coordinate any additional onsite construction oversight efforts with SEH during the construction of the Harbor Plaza Design.

AMI has a team of well-versed Engineers who have extensive knowledge and experience with waterfront facilities including the initial construction of the DECC Seawall. AMI has specifically selected several employees to perform routine site inspections throughout the duration of the project.

#### **Construction Documentation**

AMI will lead the construction documentation and record keeping portion of this project. Their combined knowledge and understanding of the EDA grant submittal process, involvement with the DECC Phase 1 construction and extensive experience with the site will ensure that adequate documentation is taken throughout the duration of the project. AMI will work diligently with stakeholders, Civil Engineering Team, and the City to ensure proper documentation is occurring.

#### **Coordination**

AMI understands how crucial coordination will be throughout each task of the project. AMI will work directly with the City and Civil Engineering Team to ensure that project milestones are being met and that resources are being utilized in an efficient manner.

AMI will work with the awarded Contractor by sharing stripped CAD files and setting up survey control on-site with the contractor. Weekly project meetings will be held to discuss completed work which will be captured in weekly progress reports. The reports will include a summarization of completed work as well as any other required documentation to help support the EDA process. If questions arise onsite, AMI personnel will notify AMI's Project Manager immediately for prompt and efficient resolution.

#### **Special Inspections:**

During critical milestones of the project, an approved qualified AMI representative will perform special inspections. The day-to-day inspector will document construction progress, verify work being conducted and conformance with the project plans and specifications. The special inspectors will show up during critical times or milestones to inspect critical features such as; Coating inspections for sheet pile (NACE/SSPC CIP Level 1), clearing of the drive line (Engineer led dive team or ROV team), reinforcement layout, etc.

### Managing Change Orders

Throughout the construction process, if quantities or scope changes are required or recommended, the City will be notified of these proposed adjustments immediately. AMI will submit an engineer's proposal request (EPR) to the Contractor to confirm scope and anticipated fees associated. AMI will ensure no modifications to the project or the Contractor's contract occur without prior review and approval from the City.

### Surveys

Throughout the construction process, AMI will survey final grades, feature lines, and materials. These surveys will provide a detailed breakdown of any potential quantity over/under runs and will serve as the as-builts for the City of Duluth's records.

### Final Construction Documentation

After construction is completed, AMI will issue to the City an electronic copy of AMI's construction administration documentation throughout this project. AMI will provide a workflow document that will assist both present and future City personnel in navigating through the folders if, for example, additional information is requested from EDA or the project stakeholders.

### Proposed Fees

AMI is proposing to perform the services described above on an hourly rate basis for a Not to Exceed fee of **Six Hundred Fifty-Seven Thousand Four Hundred Twenty-Five Dollars (\$657,425.00)** based on the following breakdown as reflected in AMI's existing professional engineering services agreement with the City of Duluth (Contract # L 30511):

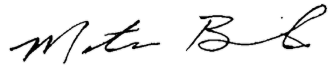
D. Final Design Phase	\$277,075.00
E. Bidding Phase	\$8,600.00
F. Construction Survey and Layout	\$4,220.00
G. Construction Administration and Inspection	\$367,530.00

It is our understanding that the city of Duluth will be amending AMI's current contract (Contract # L 30511) to include the costs for the Final Design Phase only. After the Final Design Phase is complete, the contract will be renegotiated to incorporate the costs associated with Bidding, Construction Survey & Layout, and Construction Administration & Inspection (Phases E thru G). The costs presented above for Phases E thru G are not final, and will be re-evaluated once the Final Design Phase is complete.

Additional services beyond those outlined in the Scope of Work may be provided at your request and will be billed per written and agreed upon amounts. The work will be scheduled once authorization has been received.

We appreciate the opportunity to be of service to you on this project. If you have any questions or comments regarding this proposal or find any information listed above to be in error, please do not hesitate to contact me at (715) 718-2193 ext. 31 or [mathew.burich@amiengineers.com](mailto:mathew.burich@amiengineers.com).

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Mat Burich".

Mat Burich, EIT  
Assistant Marine Civil Manager

Reviewed By,  
Chad W Scott, PE  
Principal

Enc.:

- AMI General Terms and Conditions
- Duluth Baywalk - Cost Alignment Package (10/25/2021)
- AMI Final Design Cost Estimate



Consulting Engineers P.A.

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## General Terms and Conditions

1. AMI Consulting Engineers P.A. (AMI) shall perform the services defined in the attached AGREEMENT and shall invoice the CLIENT. Any estimate of cost to the CLIENT as stated in this AGREEMENT shall not be considered as a fixed price, but only an estimate (unless otherwise specifically stated in the AGREEMENT). AMI will provide additional services under the attached AGREEMENT as requested by the CLIENT and invoice the CLIENT for those additional services at standard rates.
2. Right of Entry. The CLIENT will provide for right of entry of AMI personnel and all necessary equipment, in order to complete the work. While AMI will take all reasonable precautions to minimize any damage to the property, it is understood by the CLIENT that in the normal course of work some damage may occur, the correction of which is not part of this AGREEMENT.
3. Retainer. The CLIENT shall submit a retainer as set out in the AGREEMENT at the time of a fully executed AGREEMENT. Services shall not begin until retainer and fully executed AGREEMENT are received. Retainer amount shall be applied to the last invoice upon completion of services.
4. Invoices. Invoices will be processed on a monthly basis, due within 30 calendar days of the invoice date (NET 30). CLIENT agrees to pay a finance charge of one and one-half percent (1.5%) per month, or the maximum rate allowed by law, whichever is less, on past due accounts. If collection of past due invoices becomes necessary, CLIENT agrees to pay AMI the cost of any court costs and reasonable attorney's fees associated with collecting monies due.
5. Mechanic's Liens. **(a) Any person or company supplying labor or materials for this improvement to your property may file a lien against your property if that person or company is not paid for the contributions. (b) Under Minnesota law, you have the right to pay persons who supplied labor or materials for this improvement directly and deduct this amount from our contract price, or withhold the amounts due them from us until 120 days after completion of the improvement unless we give you a lien waiver signed by persons who supplied any labor or material for the improvement and who gave you timely notice."**
6. Ownership of Documents. All reports, field data, field notes, drawing, specifications, calculations, estimates and other documents prepared by AMI, as instruments of service, shall remain the property of AMI. CLIENT agrees that all reports and other work furnished to the CLIENT or his agents, which are not paid for, will be returned upon demand and will not be used by the CLIENT for any purpose whatsoever. The CLIENT agrees not to use surveying and engineering documents for purposes other than intended unless the use is approved by AMI. AMI will retain all pertinent records relating to the services performed for a period of five years following submission of the final invoice.
7. Standard of Care. Service performed by AMI under this AGREEMENT will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty, express or implied, is made.
8. Limitation of Liability. CLIENT agrees to limit AMI's liability to CLIENT and all construction contractors arising from AMI's professional acts, errors or omissions, such that the total aggregate liability of AMI to all these named shall not exceed AMI's total fee for the services rendered on this project.

9. Insurance. AMI represents and warrants that it and its employees are protected by worker's compensation insurance and that AMI has such coverage under public liability and property damage insurance policies which AMI deems to be adequate. Certificates for all such policies of insurance shall be provided to CLIENT upon request. Within the limits and conditions of such insurance and the provisions of paragraph 7 above pertaining to limitation of liability, AMI agrees to indemnify and save Client harmless from and against any loss damage, or liability arising from any negligent acts by AMI, its agents, staff and consultants employed by it. AMI shall not be responsible for any loss, damage or liability arising from any acts by CLIENT, its agents, staff and other consultants employed by it.
10. Termination. This AGREEMENT may be terminated by either party upon fifteen (15) days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof. Such termination shall not be effective if that substantial failure has been remedied before expiration of the period specified in the written notice. In the event of termination, AMI shall be paid for services performed to the termination notice date plus reasonable termination expenses.
11. Disputes. In the event that a dispute should arise relating to the performance of or payment for the services to be provided under this AGREEMENT, and should that dispute result in litigation, it is agreed that AMI shall be entitled to recover all reasonable costs incurred in the claim, including staff time, court costs, attorney's fees and other claim-related expenses.
12. Assignments. This AGREEMENT and the rights and duties hereunder will not be assigned, subcontracted, or transferred by CLIENT, in whole or in part, without AMI's prior written approval.
13. Waivers. No waiver by either party of any default by the other party in the performance of any provision of this AGREEMENT will operate as, or be construed as, a waiver of any future default, whether like or of different character.
14. Force Majeure. Neither party to this AGREEMENT will be liable to the other party for delays in performing the Scope of Work or for the direct or indirect cost resulting from such delays, that may result from such delays, that may result from labor strikes, riots, war, acts of governmental authorities, ordinary weather conditions, catastrophe, pandemic, or any other cause beyond the reasonable control or contemplation of either party.
15. Authorization to Proceed. Execution of this AGREEMENT by Client will be authorization for AMI to proceed with the Scope of Services, unless otherwise provided for in this AGREEMENT.
16. No Third-Party Beneficiaries. This AGREEMENT gives no rights or benefits to anyone other than AMI and the CLIENT and has no third-party beneficiaries.
17. Jurisdiction. The law of the State of Minnesota shall govern the validity of this AGREEMENT, its interpretation and performance, and any other claims related to it.
18. Severability. If any of the provisions contained in this AGREEMENT are held for any reason to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provision, and this AGREEMENT will be construed as if such invalid, illegal or unenforceable provision had never been contained herein.
19. Change Orders. Client may adjust the Scope of Services by either adding to or deleting from the services to be performed. If such adjustment increases or decreases the cost or time required for AMI to complete the Scope of Services, adjusted compensation and/or time will be mutually agreed upon. Additional services provided by AMI will be entitled to additional compensation or extension of time in conformity with the attached schedule of Fees.





# **COST ALIGNMENT SCENARIOS**

10/25/2021

# SEAWALL

## BASELINE SCENARIO (Remove all items not included in EDA Grant)

### Baseline Scenario - \$12,921,560

*Remove all items added after the EDA Grant submission, including all upgrades to accommodate the Viking Octantis Ship. Does not include Dredging regardless of depth. Limits of Over-topping wall increased since EDA Grant.*

### + \$392,000 Security Requirements

*Sterile Corridor Fencing, Security Fencing, CCTV*

### + \$3,505,610 Accommodate Viking Octantis Cruise Ship

*Upgrades (Fenders, Mooring, and Sheet Pile Length increased to 55 ft due to deeper dredging) to accommodate the Viking Octantis Ship, and Dredging to 28 ft depth.*

#### EDA Vessel Parameters:

Length : 515 Ft  
Draft : 20 Ft  
Tonnage : 16,800 Tons

#### Current Vessel Parameters:

Length : 665 Ft  
Draft : 24 Ft  
Tonnage : 32,500 Tons

#### Dredging Cost Comparison:

20 Ft Draft (620 LF) : \$179,260  
24 Ft Draft (800 LF) : \$834,620  
28 Ft Draft (800 LF) : \$1,823,810

#### Cost of Accommodating Cruise Ships During Construction:

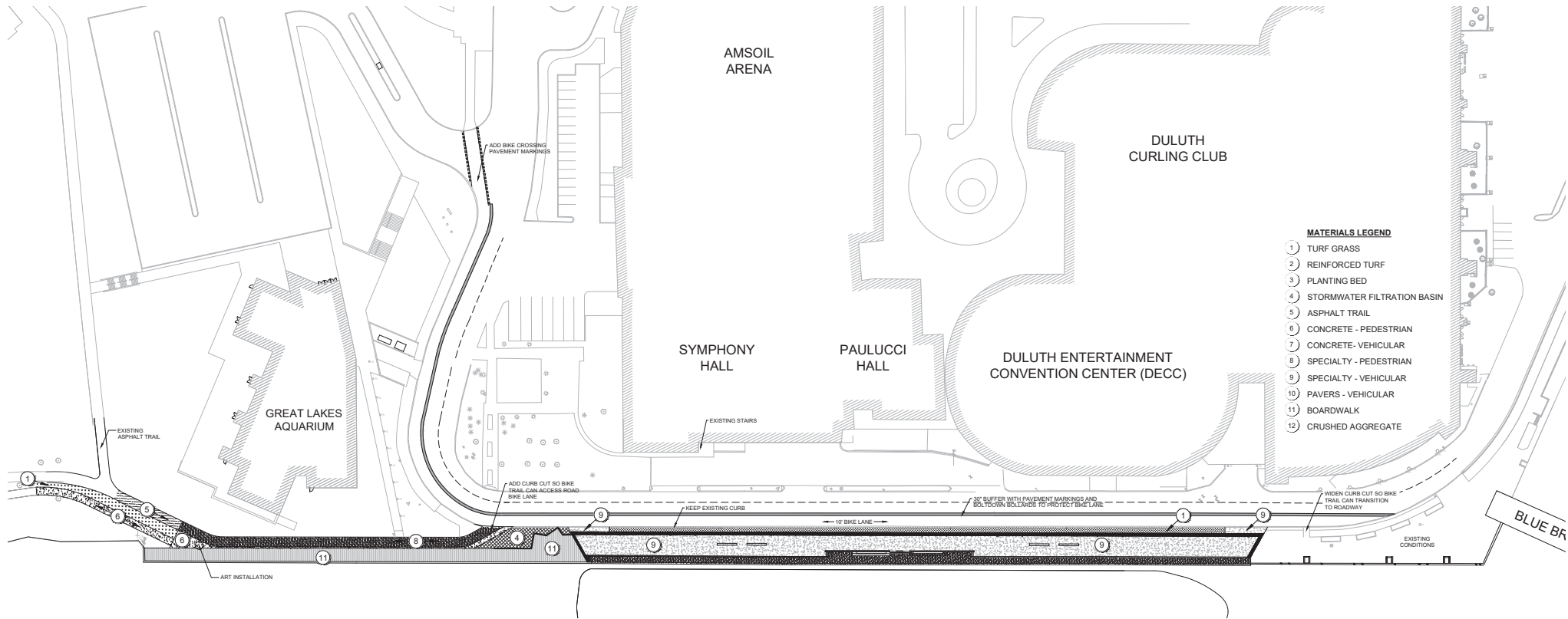
(7) Days of Construction Delays : \$75,000  
Temporary Security Items: \$25,000

# BAYWALK

## BASELINE SCENARIO (Provide Minimum Improvements needed to Accommodate Cruise Ships)

### Cruise Ship Baseline Scenario - \$3,074,810

Reduce Scope to Accommodate a Bike Circulation, Limited Boardwalk, and Cruise Ship Docking.



DULUTH BAYWALK - COST ALIGNMENT 10.25.2021

# HARBOR PLAZA

## BASELINE SCENARIO (\$5M Budget)

### Harbor Plaza Baseline Scenario - **\$5,035,974**

*Reduce Scope to Accommodate a Bike Circulation and Cruise Ship Docking*

#### **+\$1,950,192 Street Improvements**

*Alternative funding sources required for 5th Ave and Harbor Drive Improvements.*

**5th Ave Improvements:** \$605,096.62

**Harbor Drive Improvements:** \$1,345,096.09

#### **+\$1,128,405 Boardwalk**

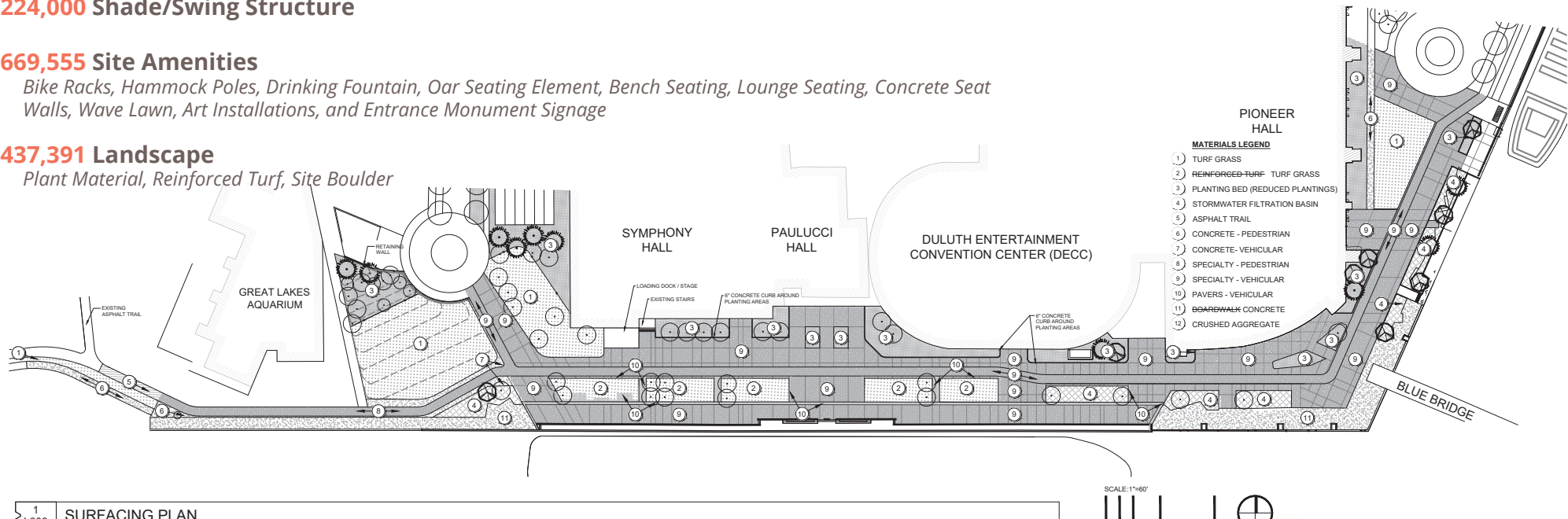
#### **+\$224,000 Shade/Swing Structure**

#### **+\$669,555 Site Amenities**

*Bike Racks, Hammock Poles, Drinking Fountain, Oar Seating Element, Bench Seating, Lounge Seating, Concrete Seat Walls, Wave Lawn, Art Installations, and Entrance Monument Signage*

#### **+\$437,391 Landscape**

*Plant Material, Reinforced Turf, Site Boulder*



## PROBABLE CONSTRUCTION COST OPINION

## Preliminary

The amounts stated herein are our best estimate of probable construction costs based on current information. Because costs are influenced by market conditions, changes in project scope, and other factors beyond our control, we cannot ensure that actual construction costs will equal this cost opinion.

## Duluth Harbor Plaza

Duluth, Minnesota

21058

10/4/2021

AC = acre (43,560 sf) / ALW = allowance / EA = each / LF = linear foot / LB = pound / LS = lump sum / MSF = 1,000 sf / SF = square foot / SY = square yard / TON = 2,000 pounds

## SEAWALL BASELINE

Site Preparation	Qty	Unit	Unit Cost	Item Total	Remarks
Mobilization	1	LS	\$ 836,100.00	\$ 836,100.00	
Erosion Control Measures	1	LS	\$ 167,300.00	\$ 167,300.00	
<b>Subtotal</b>				<b>\$ 1,003,400.00</b>	

% of Construction 11%

Instructions: % of construction may not always be necessary to include

Site Preparation	Qty	Unit	Unit Cost	Item Total	Remarks
Sterile Corridor	0	Day	\$ 4,000.00	\$ -	
Cruise Ship Electrical Security Requirements	0	LS	\$ 25,000.00	\$ -	
<b>Subtotal</b>				<b>\$ -</b>	

% of Construction 0%

Dock Modifications Station 0+00 to 2+36	Qty	Unit	Unit Cost	Item Total	Remarks
Bollards	2	EA	\$ 30,000.00	\$ 60,000.00	
Helical Anchors	4	EA	\$ 4,500.00	\$ 18,000.00	
Steel Guardrail	24	LF	\$ 250.00	\$ 6,000.00	
<b>Subtotal</b>				<b>\$ 84,000.00</b>	

% of Construction 1%

New Sheet Pile Dock Wall Station 2+36 to 9+17	Qty	Unit	Unit Cost	Item Total	Remarks
Steel Sheet Pile Installation (Materials & Installation)	30,645	SF	\$ 60.00	\$ 1,838,700.00	45 feet long sheets
Protective Steel Coating	10,896	SF	\$ 45.00	\$ 490,320.00	20 MIL DFT min, Engineer Approved Coating
Double Channel Wale	681	LF	\$ 300.00	\$ 204,300.00	2 - C12x30 wale
Transfer Beam over H-Piles	681	LF	\$ 600.00	\$ 408,600.00	W14x120 (Materials & Installation)
Steel H Piles (Materials & Installation)	2,220	LF	\$ 220.00	\$ 488,400.00	HP10x42 @ 30 feet long
Tie Rods & Hardware	1,406	LF	\$ 66.00	\$ 92,796.00	1 3/4" dia Threaded Rod (75KSI)
Helical Anchors	92	EA	\$ 4,500.00	\$ 414,000.00	Complete anchor & attachment to H Pile
Bent Plate Steel Pile Cap	681	LF	\$ 175.00	\$ 119,175.00	A36 3/8" bent plate
Concrete Retaining Wall	300	CY	\$ 1,000.00	\$ 300,000.00	
New Steel Guardrail on top of retaining wall	681	LF	\$ 100.00	\$ 68,100.00	
Storm Doors @ Retaining Wall Opening Locations	4	EA	\$ 15,000.00	\$ 60,000.00	Fiberglass stop logs
Concrete Sidewalk	5,300	SF	\$ 9.00	\$ 47,700.00	
Concrete Stairs	10	CY	\$ 500.00	\$ 5,000.00	
Concrete Seating	0	CY	\$ 1,000.00	\$ -	
<b>New Bollards and New Foundations</b>	9	EA	\$ 30,000.00	\$ 270,000.00	For Cruise Ship Mooring
Granular Fill Between SSP	1,060	CY	\$ 100.00	\$ 106,000.00	3/4" Vibro Compacted Crushed Stone
Single Row Timber (Rub Rail Fender)	681	LF	\$ 150.00	\$ 102,150.00	12" Oak Timbers
Safety Ladder	2	EA	\$ 3,000.00	\$ 6,000.00	A36 Steel - Painted Safety Yellow
Foam Filled Fenders 20'x8'ø	0	EA	\$ 60,000.00	\$ -	
<b>Subtotal</b>				<b>\$ 5,021,241.00</b>	

% of Construction 54%

New Sheet Pile dock Wall Station 9+17 to 11+53	Qty	Unit	Unit Cost	Item Total	Remarks
Steel Sheet Pile Installation (Materials & Installation)	10,620	SF	\$ 60.00	\$ 637,200.00	45 feet long sheets
Protective Steel Coating	3,776	SF	\$ 45.00	\$ 169,920.00	20 MIL DFT min, Engineer Approved Coating
Double Channel Wale	236	LF	\$ 300.00	\$ 70,800.00	2 - C12x30 wale
Transfer Beam over H-Piles	236	LF	\$ 600.00	\$ 141,600.00	W14x120 (Materials & Installation)
Steel H Piles (Materials & Installation)	780	LF	\$ 220.00	\$ 171,600.00	HP10x42 @ 30 feet long
Tie Rods & Hardware	494	LF	\$ 66.00	\$ 32,604.00	1 3/4" dia Threaded Rod (75KSI)
Helical Anchors	30	EA	\$ 4,500.00	\$ 135,000.00	Complete anchor & attachment to H Pile
Concrete Coring for Tie Rods	36	EA	\$ 400.00	\$ 14,400.00	



Concrete Wave Wall	120	CY	\$ 1,000.00	\$ 120,000.00	
Storm Doors @ Bollard Locations	2	EA	\$ 15,000.00	\$ 30,000.00	Fiberglass stop logs
Guardrail Gate @ Bollard Locations	2	EA	\$ 1,000.00	\$ 2,000.00	
New Bollards and New Foundations	2	EA	\$ 30,000.00	\$ 60,000.00	For Cruise Ship Mooring
New Dock Cleats	12	EA	\$ 850.00	\$ 10,200.00	Approx. 20 ft OC
Granular Fill Between SSP	475	CY	\$ 100.00	\$ 47,500.00	3/4" Vibro Compacted Crushed Stone
Single Row Timber (Rub Rail Fender)	236	LF	\$ 150.00	\$ 35,400.00	12" Oak Timbers
Safety Ladder	1	EA	\$ 3,000.00	\$ 3,000.00	A36 Steel - Painted Safety Yellow
<b>Subtotal</b>				<b>\$ 1,681,224.00</b>	

% of Construction

18%

New Sheet Pile Dock Wall Station 11+53 to 12+03	Qty	Unit	Unit Cost	Item Total	Remarks
Steel Sheet Pile Installation (Materials & Installation)	2,250	SF	\$ 60.00	\$ 135,000.00	45 feet long sheets
Protective Steel Coating	800	SF	\$ 45.00	\$ 36,000.00	
Double Channel Wale	50	LF	\$ 300.00	\$ 15,000.00	
Transfer Beam over H-Piles	50	LF	\$ 600.00	\$ 30,000.00	
Steel H Piles (Materials & Installation)	180	LF	\$ 220.00	\$ 39,600.00	
Tie Rods & Hardware	114	LF	\$ 60.00	\$ 6,840.00	
Helical Anchors	6	EA	\$ 4,500.00	\$ 27,000.00	
Concrete Coring for Tie Rods	18	EA	\$ 400.00	\$ 7,200.00	
Concrete Wave Wall	25	CY	\$ 1,000.00	\$ 25,000.00	
Granular Fill Between SSP	200	CY	\$ 100.00	\$ 20,000.00	3/4" Vibro Compacted Crushed Stone
Single Row Timber (Rub Rail Fender)	50	LF	\$ 150.00	\$ 7,500.00	
<b>Subtotal</b>				<b>\$ 349,140.00</b>	

% of Construction

4%

New Sheet Pile Dock Wall Station 12+03 to 13+21	Qty	Unit	Unit Cost	Item Total	Remarks
Steel Sheet Pile Installation (Materials & Installation)	5,310	SF	\$ 60.00	\$ 318,600.00	45 feet long sheets
Protective Steel Coating	1,888	SF	\$ 45.00	\$ 84,960.00	20 MIL DFT min, Engineer Approved Coating
Double Channel Wale	118	LF	\$ 300.00	\$ 35,400.00	2 - C12x30 wale
Transfer Beam over H-Piles	118	LF	\$ 600.00	\$ 70,800.00	W14x120 (Materials & Installation)
Steel H Piles (Materials & Installation)	390	LF	\$ 220.00	\$ 85,800.00	HP10x42 @ 30 feet long
Tie Rods & Hardware	247	LF	\$ 66.00	\$ 16,302.00	1 3/4" dia Threaded Rod (75KSI)
Helical Anchors	13	EA	\$ 4,500.00	\$ 58,500.00	Complete anchor & attachment to H Pile
Concrete Coring for Tie Rods	18	EA	\$ 400.00	\$ 7,200.00	
Concrete Wave Wall	60	CY	\$ 1,000.00	\$ 60,000.00	
Granular Fill Between SSP	300	CY	\$ 100.00	\$ 30,000.00	3/4" Vibro Compacted Crushed Stone
New Dock Cleats	6	EA	\$ 850.00	\$ 5,100.00	Approx. 20 ft OC
Single Row Timber (Rub Rail Fender)	118	LF	\$ 150.00	\$ 17,700.00	12" Oak Timbers
<b>Subtotal</b>				<b>\$ 790,362.00</b>	

% of Construction

8%

New Sheet Pile Dock Wall Station 13+21 to 13+71	Qty	Unit	Unit Cost	Item Total	Remarks
Remove existing failed sheet pile	1	LS	\$ 27,500.00	\$ 27,500.00	
Steel Sheet Pile Installation (Materials & Installation)	3,060	SF	\$ 60.00	\$ 183,600.00	
Protective Steel Coating	1,088	SF	\$ 45.00	\$ 48,960.00	
Double Channel Wale	68	LF	\$ 300.00	\$ 20,400.00	
Transfer Beam over H-Piles	68	LF	\$ 600.00	\$ 40,800.00	
Steel H Piles (Materials & Installation)	120	LF	\$ 220.00	\$ 26,400.00	
Tie Rods & Hardware	76	LF	\$ 66.00	\$ 5,016.00	
Corner Brace	30	LF	\$ 230.00	\$ 6,900.00	W12x45
Helical Anchors	4	EA	\$ 4,500.00	\$ 18,000.00	
Concrete Wave Wall	35	CY	\$ 1,000.00	\$ 35,000.00	
Granular Fill Between SSP	110	CY	\$ 100.00	\$ 11,000.00	
Single Row Timber (Rub Rail Fender)	50	LF	\$ 150.00	\$ 7,500.00	
Safety Ladder	1	EA	\$ 3,000.00	\$ 3,000.00	
<b>Subtotal</b>				<b>\$ 434,076.00</b>	

% of Construction

5%

<b>Subtotal - Phase 1</b>			<b>\$ 9,363,443.00</b>	
General Conditions	8%		\$ 749,075.44	
Contingency	20%		\$ 1,872,688.60	Reduce contingency as project develops
Design and Engineering Fees	10%		\$ 936,344.30	Design fees may or may not be included
<b>Total - Phase 1</b>			<b>\$ 12,921,551.34</b>	

**PROBABLE CONSTRUCTION COST OPINION****Preliminary**

The amounts stated herein are our best estimate of probable construction costs based on current information. Because costs are influenced by market conditions, changes in project scope, and other factors beyond our control, we cannot ensure that actual construction costs will equal this cost opinion.

**Duluth Harbor Plaza**

Duluth, Minnesota

21058

10/20/2021

AC = acre (43,560 sf) / ALW = allowance / EA = each / LF = linear foot / LB = pound / LS = lump sum / MSF = 1,000 sf / SF = square foot / SY = square yard / TON = 2,000 pounds

**CRUISE SHIP BASELINE**

Site Preparation & Earthwork	Qty	Unit	Unit Cost	Item Total	Remarks
Mobilization	1	LS	\$ 204,379.88	\$ 204,379.88	10% of construction
Traffic Control	1	LS	\$ 20,437.99	\$ 20,437.99	1% of construction
Erosion Control Measures	1	LS	\$ 40,875.98	\$ 40,875.98	2% of construction
Remove Concrete Pavement	0	SF	\$ 4.00	\$ -	
Remove Concrete Curb and Gutter	40	LF	\$ 6.00	\$ 240.00	
Remove Bituminous Pavement	905	SY	\$ 2.75	\$ 2,488.75	
Remove Concrete Walk	16,880	SF	\$ 1.50	\$ 25,320.00	
Remove Lights	0	EACH	\$ 500.00	\$ -	
Remove Storm Sewer Pipe	329	LF	\$ 15.00	\$ 4,935.00	
Remove Structures	4	EACH	\$ 275.00	\$ 1,100.00	
Remove Misc.	1	LS	\$ 15,000.00	\$ 15,000.00	signs, planters, trees
Remove Pavement Stripping	1,290	LF	\$ 1.00	\$ 1,290.00	
Common Excavation	1,200	CY	\$ 16.00	\$ 19,200.00	Total of all improvement areas
Subgrade Preparation - 12"	1,200	CY	\$ 13.00	\$ 15,600.00	Total of all improvement areas
Drain Tile	836	LF	\$ 12.00	\$ 10,032.00	Full length of plaza area plus 4 outlets
<b>Subtotal</b>				<b>\$ 360,899.59</b>	

% of Construction

16%

Utilities	Qty	Unit	Unit Cost	Item Total	Remarks
Storm Sewer - 24" RCP	259	LF	\$ 90.00	\$ 23,310.00	
Storm Sewer - 18" RCP	70	LF	\$ 70.00	\$ 4,900.00	
Storm Manholes	6	EACH	\$ 3,500.00	\$ 21,000.00	Included Connections
Control Structure	1	EACH	\$ 15,000.00	\$ 15,000.00	
Castings	6	EACH	\$ 1,200.00	\$ 7,200.00	
Hydrant Assembly	0	EACH	\$ 7,500.00	\$ -	
<b>Subtotal</b>				<b>\$ 71,410.00</b>	

% of Construction

3%

Electrical	Qty	Unit	Unit Cost	Item Total	Remarks
Electrical Service - Street & Trail Lighting	1	LS	\$ 50,000.00	\$ 50,000.00	CT/Meter, Panel, Transformer & Enclosure
Electrical Service - Shore Power	1	LS	\$ 100,000.00	\$ 100,000.00	CT/Meter, Panel, Transformer & Enclosure
Utility Work	1	ALW	\$ 50,000.00	\$ 50,000.00	
Electrical Vendor Power & Data	6	EA	\$ 50,000.00	\$ 300,000.00	Panel, Transfrm, 50A & 20A Receipts, Fiber, Encl
Lighting (Specialty Poles)	7	EA	\$ 25,000.00	\$ 175,000.00	Pole, Fixture, Pole Base, Branch Circuit/Control
Lighting (Feature Art)	0	EA	\$ 10,000.00	\$ -	
Lighting (Tree Uplighting)	0	EA	\$ 2,500.00	\$ -	
Lighting (Oar Seating/Swing)	0	EA	\$ 10,000.00	\$ -	
Stage Power & A/V	0	LS	\$ 10,000.00	\$ -	
Marine Based Shore Power	3	EA	\$ 25,000.00	\$ 75,000.00	Pedestal, Branch Circuit
AV/Sound Allowance	1	ALW	\$ 15,000.00	\$ 15,000.00	
Data Allowance	1	ALW	\$ 25,000.00	\$ 25,000.00	
CCTV Allowance	1	ALW	\$ 50,000.00	\$ 50,000.00	
<b>Subtotal</b>				<b>\$ 840,000.00</b>	

% of Construction

36%

Structures	Qty	Unit	Unit Cost	Item Total	Remarks
Shade/Swing Structure Allowance					
Structure	0	ALW	\$200,000.00	\$ -	
Swing Assembly	0	EA	\$4,000.00	\$ -	
<b>Subtotal</b>				<b>\$ -</b>	

% of Construction

0%

Surfacing & Hardscape	Qty	Unit	Unit Cost	Item Total	Remarks
3/4" Minus Bedding Course	125	CY	\$ 55.00	\$ 6,875.00	2" thick - all hardscape areas
3" Minus Base Course	600	CY	\$ 40.00	\$ 24,000.00	10" thick - all hardscape areas
Select Granular	1,750	CY	\$ 29.00	\$ 50,750.00	
Geotextile Fabric	2,150	SY	\$ 1.50	\$ 3,225.00	
Curb and Gutter	40	LF	\$ 30.00	\$ 1,200.00	
Asphalt Trail	732	S.F.	\$ 2.00	\$ 1,464.00	
Concrete - Pedestrian - 4"	2,222	SF	\$ 5.50	\$ 12,221.00	
Concrete - Vehicular - 6"	0	SF	\$ 5.50	\$ -	
Specialty Concrete - Pedestrian - 6"	3,268	SF	\$ 15.00	\$ 49,020.00	Colored and Decorative Jointing
Specialty Concrete - Vehicular - 6"	14,337	SF	\$ 15.00	\$ 215,055.00	Colored and Decorative Jointing
Pavement Stripping	1,290	LF	\$ 1.00	\$ 1,290.00	
Unit Pavers - Vehicular	2,275	SF	\$ 27.00	\$ 61,425.00	
Boardwalk	6,806	SF	\$ 45.00	\$ 306,270.00	
Boardwalk Concrete Beams	3,795	LF	\$ 60.00	\$ 227,700.00	Spaced at 30" apart. X" x X" in size.
<b>Subtotal</b>				<b>\$ 960,495.00</b>	

% of Construction

42%

Stairs & Walls	Qty	Unit	Unit Cost	Item Total	Remarks
Loading Dock Stage	0	LS	\$ 30,000.00	\$ -	
Cast-In-Place Concrete Seat Wall (36")	0	LF	\$ 325.00	\$ -	
Cast-In-Place Concrete Seat Wall (18")	0	LF	\$ 250.00	\$ -	
Cast-in-Place 6" Planting Curb	0	LF	\$ 14.00	\$ -	
Retaining Wall	0	CY	\$ 1,200.00	\$ -	Retaining for Sloped Lawn @ 5th Ave RAB
<b>Subtotal</b>				<b>\$ -</b>	

% of Construction

0%

Safety Items	Qty	Unit	Unit Cost	Item Total	Remarks
Removable Traffic Control Bollards	120	EA	\$ 150.00	\$ 18,000.00	
Ship Dock - Fencing	0	LF	\$ 200.00	\$ -	
Ship Dock - Gates	0	EA	\$ 3,000.00	\$ -	
Ship Dock - Sleeving	0	EA	\$ 200.00	\$ -	
<b>Subtotal</b>				<b>\$ 18,000.00</b>	

% of Construction

1%

Landscape	Qty	Unit	Unit Cost	Item Total	Remarks
Turf Sod	433	SY	\$ 8.00	\$ 3,464.00	
Reinforced Turf Sod	0	SF	\$ 8.75	\$ -	
Irrigation	0	SF	\$ 1.00	\$ -	
Planting Bed - Native Perennials	0	SF			
Hardwood Mulch - 3"	0	CY	\$ 50.00	\$ -	
Amended Topsoil - 18"	0	CY	\$ 55.00	\$ -	
#1 Perennial - 1'-6" O.C.	0	EA	\$ 22.00	\$ -	
Planting Bed - Native Shrubs	1,102	SF	\$ 12.00	\$ 13,224.00	
Hardwood Mulch - 3"	0	CY	\$ 50.00	\$ -	
Amended Topsoil - 18"	0	CY	\$ 55.00	\$ -	
#5 Shrub - 3'-0" O.C.	0	EA	\$ 55.00	\$ -	
Filtration Basin Planting Bed	0	SF			
Groundcover Plugs	0	EA	\$ 5.00	\$ -	
Amended Topsoil - 18"	0	CY	\$ 55.00	\$ -	
#1 Perennial - 1'-6" O.C.	0	EA	\$ 22.00	\$ -	
Landscape Edging	0	LF	\$ 9.00	\$ -	
Structural Soils	0	CY	\$ 95.00	\$ -	
Coniferous Tree	0	EA	\$ 500.00	\$ -	
Deciduous Trees	0	EA	\$ 500.00	\$ -	
Ornamental Trees	0	EA	\$ 350.00	\$ -	
Site Boulders	0	EA	\$ 500.00	\$ -	
<b>Subtotal</b>				<b>\$ 16,688.00</b>	

% of Construction

1%

Site Amenities	Qty	Unit	Unit Cost	Item Total	Remarks
Site Furnishings Allowance	0	ALW	\$ 25,000.00	\$ -	
Trash/Recycling Receptable	4	EA	\$ 1,500.00	\$ 6,000.00	
Bike Racks	0	EA	\$ 900.00	\$ -	
Hammock Poles	0	EA	\$ 875.00	\$ -	
Flagpoles	0	EA	\$ 1,200.00	\$ -	



Drinking Fountains	0	EA	\$ 27,500.00	\$ -	
Oar Seating Element Wood	0	SF	\$ 50.00	\$ -	
Oar Seating Element Substructure Concrete Wal	0	CY	\$ 2,000.00	\$ -	
Bench Seating - Drifter	4	EA	\$ 5,000.00	\$ 20,000.00	
Platform Seating - DECC Entry	0	EA	\$ 10,000.00	\$ -	
Fixed Lounge Seating	0	EA	\$ 4,200.00	\$ -	
Wave Lawn - Concrete Walls	0	CY	\$ 2,100.00	\$ -	
Wave Lawn - Artificial Turf	0	SF	\$ 30.00	\$ -	
Wave Lawn - Gravel	0	CY	\$ 40.00	\$ -	
Art Installation Allowance	0	ALW	\$ 20,000.00	\$ -	
Relocation of Existing Buoy	1	LS	\$ 1,000.00	\$ 1,000.00	
Relocation of Existing Statue of Liberty	0	LS	\$ 10,000.00	\$ -	
Entrance Monument Signage	0	EA	\$ 15,000.00	\$ -	<a href="#">At 5th Ave and Harbor Drive RAB</a>
Wayfinding Signage	3	EA	\$ 5,000.00	\$ 15,000.00	
<b>Subtotal</b>			<b>\$</b>	<b>42,000.00</b>	

% of Construction

2%

<b>Subtotal - Phase 1</b>		<b>\$</b>	<b>2,309,492.59</b>
Contingency	20%	\$	461,898.52
Design and Engineering Fees	10%	\$	230,949.26
<b>Total - Phase 1</b>		<b>\$</b>	<b>3,002,340.36</b>

**PROBABLE CONSTRUCTION COST OPINION****Preliminary**

The amounts stated herein are our best estimate of probable construction costs based on current information. Because costs are influenced by market conditions, changes in project scope, and other factors beyond our control, we cannot ensure that actual construction costs will equal this cost opinion.

**Duluth Harbor Plaza**

Duluth, Minnesota

21058

10/22/2021

AC = acre (43,560 sf) / ALW = allowance / EA = each / LF = linear foot / LB = pound / LS = lump sum / MSF = 1,000 sf / SF = square foot / SY = square yard / TON = 2,000 pounds

**HARBOR PLAZA BASELINE**

Site Preparation & Earthwork	Qty	Unit	Unit Cost	Item Total	Remarks
Mobilization	1	LS	\$ 346,840.40	\$ 346,840.40	10% of construction
Traffic Control	1	LS	\$ 34,684.04	\$ 34,684.04	1% of construction
Erosion Control Measures	1	LS	\$ 69,368.08	\$ 69,368.08	2% of construction
Remove Concrete Pavement	61,000	SF	\$ 4.00	\$ 244,000.00	
Remove Concrete Curb and Gutter	210	LF	\$ 6.00	\$ 1,260.00	
Remove Bituminous Pavement	12,110	SY	\$ 2.75	\$ 33,302.50	
Remove Concrete Walk	16,200	SF	\$ 1.50	\$ 24,300.00	
Remove Lights	13	EACH	\$ 500.00	\$ 6,500.00	Includes 8 next to Lady Liberty
Remove Storm Sewer Pipe	399	LF	\$ 15.00	\$ 5,985.00	
Remove Structures	8	EACH	\$ 275.00	\$ 2,200.00	
Remove Misc.	1	LS	\$ 15,000.00	\$ 15,000.00	Benches, signs, planters, trees
Common Excavation	6,491	CY	\$ 16.00	\$ 103,856.00	Total of all improvement areas
Subgrade Preparation - 12"	6,491	CY	\$ 13.00	\$ 84,383.00	Total of all improvement areas
Drain Tile	836	LF	\$ 12.00	\$ 10,032.00	Full length of plaza area plus 4 outlets
<b>Subtotal</b>				<b>\$ 981,711.02</b>	

% of Construction

25%

Utilities	Qty	Unit	Unit Cost	Item Total	Remarks
Storm Sewer - 24" RCP	259	LF	\$ 90.00	\$ 23,310.00	
Storm Sewer - 18" RCP	140	LF	\$ 70.00	\$ 9,800.00	
Storm Manholes	8	EACH	\$ 3,500.00	\$ 28,000.00	Included Connections
Control Structure	1	EACH	\$ 15,000.00	\$ 15,000.00	
Castings	9	EACH	\$ 1,200.00	\$ 10,800.00	
Hydrant Assembly	1	EACH	\$ 7,500.00	\$ 7,500.00	
<b>Subtotal</b>				<b>\$ 94,410.00</b>	

% of Construction

2%

Electrical	Qty	Unit	Unit Cost	Item Total	Remarks
Electrical Service - Street & Trail Lighting	1	LS	\$ 50,000.00	\$ 50,000.00	CT/Meter, Panel, Transformer & Enclosure
Electrical Service - Shore Power	1	LS	\$ 100,000.00	\$ 100,000.00	CT/Meter, Panel, Transformer & Enclosure
Utility Work	1	ALW	\$ 50,000.00	\$ 50,000.00	
Electrical Vendor Power & Data	1	EA	\$ 50,000.00	\$ 50,000.00	Panel, Transfrm, 50A & 20A Recepts, Fiber, Encl
Lighting (Specialty Poles)	7	EA	\$ 15,000.00	\$ 105,000.00	Pole, Fixture, Pole Base, Branch Circuit/Control
Lighting (Feature Art)	0	EA	\$ 10,000.00	\$ -	
Lighting (Tree Uplighting)	0	EA	\$ 2,500.00	\$ -	
Lighting (Oar Seating/Swing)	0	EA	\$ 10,000.00	\$ -	
Stage Power & A/V	1	LS	\$ 10,000.00	\$ 10,000.00	Panel, Recepts, Fiber, A/V
Marine Based Shore Power	1	EA	\$ 25,000.00	\$ 25,000.00	Pedestal, Branch Circuit
AV/Sound Allowance	1	ALW	\$ 15,000.00	\$ 15,000.00	
Data Allowance	0	ALW	\$ 25,000.00	\$ -	
CCTV Allowance	0	ALW	\$ 50,000.00	\$ -	
<b>Subtotal</b>				<b>\$ 405,000.00</b>	

% of Construction

10%

Structures	Qty	Unit	Unit Cost	Item Total	Remarks
Shade/Swing Structure Allowance					
Structure	0	ALW	\$200,000.00	\$ -	
Swing Assembly	0	EA	\$4,000.00	\$ -	
<b>Subtotal</b>				<b>\$ -</b>	

% of Construction

0%

Surfacing & Hardscape	Qty	Unit	Unit Cost	Item Total	Remarks
3/4" Minus Bedding Course	661	CY	\$ 55.00	\$ 36,355.00	2" thick - all hardscape areas
3" Minus Base Course	3,306	CY	\$ 40.00	\$ 132,240.00	10" thick - all hardscape areas
Select Granular	1,750	CY	\$ 29.00	\$ 50,750.00	
Geotextile Fabric	11,901	SY	\$ 1.50	\$ 17,851.50	
Curb and Gutter	600	LF	\$ 30.00	\$ 18,000.00	
Asphalt Trail	732	S.F.	\$ 2.00	\$ 1,464.00	
Concrete - Pedestrian - 4"	5,050	SF	\$ 5.50	\$ 27,775.00	
Concrete - Vehicular - 6"	658	SF	\$ 5.50	\$ 3,619.00	
Specialty Concrete - Pedestrian - 6"	3,701	SF	\$ 15.00	\$ 55,515.00	Colored and Decorative Jointing
Specialty Concrete - Vehicular - 6"	78,295	SF	\$ 15.00	\$ 1,174,425.00	Colored and Decorative Jointing
Unit Pavers - Vehicular	5,012	SF	\$ 27.00	\$ 135,324.00	
Boardwalk Concrete - Pedestrian - 4"	16,950	SF	\$ 5.50	\$ 93,225.00	
Boardwalk Concrete Beams	0	LF	\$ 60.00	\$ -	
<b>Subtotal</b>				<b>\$ 1,746,543.50</b>	

% of Construction

45%

Stairs & Walls	Qty	Unit	Unit Cost	Item Total	Remarks
Loading Dock Stage	1	LS	\$ 30,000.00	\$ 30,000.00	
Cast-In-Place Concrete Seat Wall (36")	0	LF	\$ 325.00	\$ -	
Cast-In-Place Concrete Seat Wall (18")	0	LF	\$ 250.00	\$ -	
Cast-in-Place 6" Planting Curb	1,105	LF	\$ 14.00	\$ 15,470.00	
Retaining Wall	57	CY	\$ 1,200.00	\$ 68,400.00	Retaining for Sloped Lawn @ 5th Ave RAB
<b>Subtotal</b>				<b>\$ 45,470.00</b>	

% of Construction

1%

Safety Items	Qty	Unit	Unit Cost	Item Total	Remarks
Removable Traffic Control Bollards	9	EA	\$ 650.00	\$ 5,850.00	
Ship Dock - Fencing	0	LF	\$ 200.00	\$ -	
Ship Dock - Gates	0	EA	\$ 3,000.00	\$ -	
Ship Dock - Sleeving	0	EA	\$ 200.00	\$ -	
<b>Subtotal</b>				<b>\$ 5,850.00</b>	

% of Construction

0%

Landscape	Qty	Unit	Unit Cost	Item Total	Remarks
Turf Sod	11,100	SY	\$ 8.00	\$ 88,800.00	
Reinforced Turf Sod	0	SF	\$ 8.75	\$ -	No Reienforced Turf- Will handle less foot traffi
Irrigation	54,500	SF	\$ 1.00	\$ 54,500.00	
Planting Bed - Native Perennials	10,703	SF			Cut All Plant Material in Half
Hardwood Mulch - 3"	99	CY	\$ 50.00	\$ 4,950.00	
Amended Topsoil - 18"	594	CY	\$ 55.00	\$ 32,670.00	
#1 Perennial - 1'-6" O.C.	2,500	EA	\$ 22.00	\$ 55,000.00	
Planting Bed - Native Shrubs	15,711	SF			Cut All Plant Material in Half
Hardwood Mulch - 3"	145	CY	\$ 50.00	\$ 7,250.00	
Amended Topsoil - 18"	872	CY	\$ 55.00	\$ 47,960.00	
#5 Shrub - 3'-0" O.C.	3,000	EA	\$ 55.00	\$ 165,000.00	
Filtration Basin Planting Bed	7,900	SF			Cut All Plant Material in Half
Groundcover Plugs	6	EA	\$ 5.00	\$ 30.00	
Amended Topsoil - 18"	438	CY	\$ 55.00	\$ 24,090.00	
#1 Perennial - 1'-6" O.C.	2,000	EA	\$ 22.00	\$ 44,000.00	
Landscape Edging	218	LF	\$ 9.00	\$ 1,962.00	
Structural Soils	450	CY	\$ 95.00	\$ 42,750.00	
Coniferous Tree	5	EA	\$ 500.00	\$ 2,500.00	Cut All Plant Material in Half
Deciduous Trees	25	EA	\$ 500.00	\$ 12,500.00	Cut All Plant Material in Half
Ornamental Trees	5	EA	\$ 350.00	\$ 1,750.00	Cut All Plant Material in Half
Site Boulders	0	EA	\$ 500.00	\$ -	
<b>Subtotal</b>				<b>\$ 585,712.00</b>	

% of Construction

15%

Site Amenities	Qty	Unit	Unit Cost	Item Total	Remarks
Trash/Recycling Receptable	10	EA	\$ 1,500.00	\$ 15,000.00	
Bike Racks	0	EA	\$ 900.00	\$ -	
Hammock Poles	0	EA	\$ 875.00	\$ -	
Flagpoles	3	EA	\$ 1,200.00	\$ 3,600.00	
Drinking Fountains	0	EA	\$ 27,500.00	\$ -	
Oar Seating Element Wood	0	SF	\$ 50.00	\$ -	
Oar Seating Element Substructure Concrete Wal	0	CY	\$ 2,000.00	\$ -	

Bench Seating - Drifter	0	EA	\$ 5,000.00	\$ -	
Platform Seating - DECC Entry	0	EA	\$ 10,000.00	\$ -	
Fixed Lounge Seating	0	EA	\$ 4,200.00	\$ -	
Wave Lawn - Concrete Walls	0	CY	\$ 2,100.00	\$ -	
Wave Lawn - Artificial Turf	0	SF	\$ 30.00	\$ -	
Wave Lawn - Gravel	0	CY	\$ 40.00	\$ -	
Art Installation Allowance	0	ALW	\$ 20,000.00	\$ -	
Relocation of Existing Buoy	1	LS	\$ 1,000.00	\$ 1,000.00	
Relocation of Existing Statue of Liberty	1	LS	\$ 10,000.00	\$ 10,000.00	
Entrance Monument Signage	0	EA	\$ 15,000.00	\$ -	<a href="#">At 5th Ave and Harbor Drive RAB</a>
Wayfinding Signage	5	EA	\$ 5,000.00	\$ 25,000.00	
<b>Subtotal</b>			<b>\$</b>	<b>54,600.00</b>	
% of Construction				1%	

<b>Subtotal - Phase 1</b>		<b>\$</b>	<b>3,873,826.52</b>
Contingency	20%	\$	774,765.30
Design and Engineering Fees	10%	\$	387,382.65
<b>Total - Phase 1</b>		<b>\$</b>	<b>5,035,974.48</b>

## PROBABLE CONSTRUCTION COST OPINION

Budget/Preliminary/Final (select one)

The amounts stated herein are our best estimate of probable construction costs based on current information. Because costs are influenced by market conditions, changes in project scope, and other factors beyond our control, we cannot ensure that actual construction costs will equal this cost opinion.


## Duluth DECC Seawall

Duluth, Minnesota

21058

10/25/2021

Option	1	2	3	4
<b>Description</b>	Original EDA Submittal (45' Long Sheet Pile, No Sterile Corridor Fencing, No Foam Filled Fenders)	Flat Dock wall w/55' Long Sheet Pile, Sterile Corridor & Foam Filled Fenders (No Bumpouts)	Flat Dock wall w/45' Long Sheet Pile, Sterile Corridor & Foam Filled Fenders (No Bumpouts)	Dock Rehab (Panelization where possible, 45' Long Sheet Pile Elsewhere, No Sterile Corridor, No Foam Filled Fenders)
<b>Design Vessel</b>	Hanseatic Inspiration	Viking Octanis	Viking Octanis	NA
<b>Dredge Depth (ft)</b>	20	28	24	NA
<b>EDA Items</b>				
<b>Seawall Cost</b>	\$ 12,531,560.00	\$ 13,693,360.00	\$ 12,843,010.00	\$ 12,079,310.00
<b>Fender Cost</b>	\$ -	\$ 420,000.00	\$ 420,000.00	\$ -
<b>Bollard Cost</b>	\$ 390,000.00	\$ 390,000.00	\$ 390,000.00	\$ 330,000.00
<b>Total Cost for EDA Items</b>	\$ 12,921,560.00	\$ 14,503,360.00	\$ 13,653,010.00	\$ 12,409,310.00
<b>Items Beyond EDA</b>				
<b>Dredging Cost</b>	\$ 179,260.00	\$ 1,823,810.00	\$ 834,620.00	\$ -
<b>Security System Cost (Sterile Corridor/CCTV/Fencing)</b>	\$ 392,000.00	\$ 392,000.00	\$ 392,000.00	
<b>Vessel Arrival During Construction Cost</b>	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ -
<b>Total Cost for Items Beyond EDA</b>	\$ 671,260.00	\$ 2,415,810.00	\$ 1,426,620.00	\$ -
<b>Total Project Cost</b>	\$ 13,592,820.00	\$ 16,819,170.00	\$ 14,979,630.00	\$ 12,409,310.00
<b>Cost Above Baseline EDA (EDA Items):</b>		\$ 3,897,610.00	\$ 2,058,070.00	\$ (512,250.00)

Solicitation 21-AA08: Coastal Engineering Services for Duluth Seawall, Baywalk, and Harbor Drive Cost Estimate																																	
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		Chad Scott, QA/QC		Chase Dewhirst, PM & Structural Lead		Zac Morris, Coastal Engineering Lead		Angly Ulschmid, Permitting Lead		Mat Burich, Const. Admin & Special Inspections		Ryan Dagger, Coastal Engineer		Kristi Mehrman, Structural Engineer & Inspections		Coating Inspector, NACE/SSPC Level 1		Entry Level Engineer & Inspections		Onsite Constr. Admin		1-Man Survey Crew		3-Man, Engineer Led Dive Team		Ed Studniski, Electrical Engineer		Lyssa Goranson, Electrical Designer					
		Billing Rate		\$235.00		\$145.00		\$145.00		\$135.00		\$120.00		\$115.00		\$115.00		\$135.00		\$100.00		\$60.00		\$150.00		\$425.00		\$260.00		\$145.00		Hrs Subtotal	Labor Cost Subtotal
D. Final Design Phase		Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost				
Engineering		20.00	\$ 4,700.00	65.00	\$ 9,425.00	24.00	\$ 3,480.00		\$ -	40.00	\$ 4,800.00	100.00	\$ 11,500.00	240.00	\$ 27,600.00		\$ -	40.00	\$ 4,000.00		\$ -		\$ -	\$ -	8.00	\$ 2,080.00	100.00	\$ 14,500.00	637.00	\$ 82,085.00	\$ -	\$ 82,085.00	
Technical Specifications		4.00	\$ 940.00		\$ -		\$ -		\$ -	20.00	\$ 2,400.00		\$ -	40.00	\$ 4,600.00		\$ -	40.00	\$ 4,000.00		\$ -		\$ -	\$ -	4.00	\$ 1,040.00	10.00	\$ 1,450.00	118.00	\$ 14,430.00	\$ -	\$ 14,430.00	
Cost Estimation		4.00	\$ 940.00		\$ -		\$ -		\$ -		\$ -	12.00	\$ 1,380.00	32.00	\$ 3,680.00		\$ -	8.00	\$ 800.00		\$ -		\$ -	\$ -		\$ -	8.00	\$ 1,160.00	64.00	\$ 7,960.00	\$ -	\$ 7,960.00	
Drafting & Rendering			\$ -		\$ -		\$ -		\$ -		\$ -	340.00	\$ 39,100.00		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -		\$ -	100.00	\$ 14,500.00	440.00	\$ 53,600.00	\$ -	\$ 53,600.00	
Permitting			\$ -		\$ -		\$ -	110.00	\$ 14,850.00		\$ -		\$ -		\$ -		\$ -	16.00	\$ 1,600.00		\$ -		\$ -	\$ -		\$ -	4.25	\$ 616.25	130.25	\$ 17,066.25	\$ -	\$ 17,066.25	
Project Meetings		4.00	\$ 940.00	28.00	\$ 4,060.00	16.00	\$ 2,320.00		\$ -	28.00	\$ 3,360.00	16.00	\$ 1,840.00	28.00	\$ 3,220.00		\$ -		\$ -		\$ -		\$ -	\$ -	8.00	\$ 2,080.00	24.00	\$ 3,480.00	152.00	\$ 21,300.00	\$ -	\$ 21,300.00	
Coordination (EDA funding, Landscape Architect, Civil Engineering)		4.00	\$ 940.00	80.00	\$ 11,600.00		\$ -	80.00	\$ 10,800.00	60.00	\$ 7,200.00		\$ -	65.00	\$ 7,475.00		\$ -		\$ -		\$ -		\$ -	\$ -		\$ -	20.00	\$ 2,900.00	309.00	\$ 40,915.00	\$ -	\$ 40,915.00	
Cruise Ship Security Design/ Coordination (CBP, USCG, DSPA)		4.00	\$ 940.00	24.00	\$ 3,480.00		\$ -	80.00	\$ 10,800.00	8.00	\$ 960.00	24.00	\$ 2,760.00	8.00	\$ 920.00		\$ -		\$ -		\$ -		\$ -	\$ -		\$ -	20.00	\$ 2,900.00	168.00	\$ 22,760.00	\$ -	\$ 22,760.00	
Site Inspections & Material Testing										24.00	\$ 2,880.00	8.00	\$ 920.00		\$ -		\$ -	8.00	\$ 800.00		\$ -	8.00	\$ 1,200.00	8.00	\$ 3,400.00		\$ -	8.00	\$ 1,160.00	64.00	\$ 10,360.00	\$ 6,598.75	\$ 16,958.75
Subtotal		36.00	\$ 8,460.00	173.00	\$ 25,085.00	40.00	\$ 5,800.00	190.00	\$ 25,650.00	180.00	\$ 21,600.00	500.00	\$ 53,820.00	405.00	\$ 46,575.00	0.00	\$ -	112.00	\$ 10,400.00	0.00	\$ -	0.00	\$ -	0.00	\$ -	20.00	\$ 5,200.00	294.25	\$ 42,666.25	2,082.25	\$ 270,476.25	\$ 6,598.75	\$ 277,075.00
E. Bidding Phase		Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost				
Bidding Assistance			\$ -	22.00	\$ 3,190.00		\$ -		\$ -	40.25	\$ 4,830.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	4.00	\$ 580.00	66.25	\$ 8,600.00	\$ -	\$ 8,600.00
Subtotal		0.00	\$ -	22.00	\$ 3,190.00	0.00	\$ -	0.00	\$ -	40.25	\$ 4,830.00	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	4.00	\$ 580.00	66.25	\$ 8,600.00	\$ -	\$ 8,600.00
F. Construction Survey & Layout Phase		Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost				
Construction Survey & Layout			\$ -		\$ -	4.00	\$ 580.00		\$ -	4.00	\$ 480.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	4.00	\$ 580.00	12.00	\$ 1,640.00	\$ 2,580.00	\$ 4,220.00
Subtotal		0.00	\$ -	0.00	\$ -	2.00	\$ 580.00	0.00	\$ -	4.00	\$ 480.00	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	4.00	\$ 580.00	12.00	\$ 1,640.00	\$ 2,580.00	\$ 4,220.00
G. Construction Administration & Inspection		Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost				
Field Work (40 hrs/wk in field + office time & special inspections)			\$ -	138.00	\$ 20,010.00	60.00	\$ 8,700.00		\$ -	120.00	\$ 14,400.00	44.00	\$ 5,060.00	44.00	\$ 5,060.00	90.00	\$ 12,150.00	373.00	\$ 37,300.00	1,800.00	\$ 108,000.00	24.00	\$ 3,600.00	12.00	\$ 5,100.00		\$ -	16.00	\$ 2,320.00	2,721.00	\$ 221,700.00	\$ 2,550.00	\$ 224,250.00
Weekly Reporting			\$ -		\$ -		\$ -		\$ -	24.00	\$ 2,880.00		\$ -		\$ -		\$ -		\$ -	360.00	\$ 21,600.00		\$ -		\$ -		\$ -		\$ -	384.00	\$ 24,480.00	\$ -	\$ 24,480.00
Submittal Review			\$ -	40.00	\$ 5,800.00		\$ -		\$ -	100.00	\$ 12,000.00		\$ -		\$ -		\$ -	24.00	\$ 2,400.00		\$ -		\$ -		\$ -		\$ -	12.00	\$ 1,740.00	176.00	\$ 21,940.00	\$ -	\$ 21,940.00
Payment App / Change Orders / EPR / RFI Review & Approval			\$ -	24.00	\$ 3,480.00		\$ -		\$ -	80.00	\$ 9,600.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	16.00	\$ 2,320.00	120.00	\$ 15,400.00	\$ -	\$ 15,400.00
Field Engineering			\$ -	8.00	\$ 1,160.00		\$ -		\$ -		\$ -	48.00	\$ 5,520.00	40.00	\$ 4,600.00		\$ -		\$ -		\$ -		\$ -		\$ -	3.00	\$ 780.00	8.00	\$ 1,160.00	107.00	\$ 13,220.00	\$ -	\$ 13,220.00
Project Meetings & Coordination		8.00	\$ 1,880.00	88.00	\$ 12,760.00		\$ -		\$ -	263.00	\$ 31,560.00	24.00	\$ 2,760.00	24.00	\$ 2,760.00		\$ -	44.00	\$ 4,400.00		\$ -		\$ -		\$ -	2.00	\$ 520.00	40.00	\$ 5,800.00	493.00	\$ 62,440.00	\$ -	\$ 62,440.00
EDA Funding Coordination			\$ -	40.00	\$ 5,800.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	40.00	\$ 5,800.00	\$ -	\$ 5,800.00
Subtotal		8.00	\$ 1,880.00	338.00	\$ 49,010.00	60.00	\$ 8,700.00	0.00	\$ -	587.00	\$ 70,440.00	116.00	\$ 13,340.00	108.00	\$ 12,420.00	90.00	\$ 12,150.00	441.00	\$ 44,100.00	2,160.00	\$ 129,600.00	24.00	\$ 3,600.00	12.00	\$ 5,100.00	5.00	\$ 1,300.00	92.00	\$ 13,340.00	4,041.00	\$ 364,980.00	\$ 2,550.00	\$ 367,530.00
Project Totals		44.00	\$ 10,340.00	533.00	\$ 77,285.00	102.00	\$ 15,080.00	190.00	\$ 25,650.00	811.25	\$ 97,350.00	616.00	\$ 67,160.00	513.00	\$ 58,995.00	90.00	\$ 12,150.00	553.00	\$ 54,500.00	2,160.00	\$ 129,600.00	24.00	\$ 3,600.00	12.00	\$ 5,100.00	25.00	\$ 6,500.00	394.25	\$ 57,166.25	6,201.50	\$ 645,696.25	\$ 11,728.75	\$ 657,425.00