

ADDENDUM NO. 2
TO
CONTRACT DOCUMENTS
FOR
CITY OF MANISTIQUE
MARINA RENOVATION PROJECT – PHASE II

JULY 13, 2018

Contractor shall list all addenda by number on the bid form to ensure conformity in the bid.

Drawings, Specifications and/or Proposals are herein amended, expanded and/or modified, as hereinafter described, and become a part of the Contract Documents with the same force and effect as if incorporated, therein, originally. Any contrary provisions contained, or referred to, in Drawings and/or Specifications, shall remain applicable unless overridden by this Addendum. Revised or contrary provisions herein shall not affect any other part of the Contract Documents and any deletions, additions, substitutions and/or revisions mentioned, shall include all labor, materials, methods, modifications, etc. required for complete performance of the work.

This Addendum No. 2 consists of 32 pages.

PRE-BID QUALIFICATION

The following manufacturers have submitted a prequalification package according to Section 35511.1.03 of the specifications and have been approved to manufacture an acceptable Floating Pier System:

Flotation Docking Systems, Inc.
P.O. Box 178
160 Hodeck Street
Cedarville, Michigan 49719-0178
(906) 484-3422
www.flotationdocking.com

Great Lakes Dock & Materials, LLC
1800 Lakeshore Drive
Muskegon, MI 49441
(231) 755-2225 Office
www.greatlakesdock.com

CLARIFICATIONS

1. Dredge material will be required to be landfilled.
2. Any sediment material removed during construction will be required to be landfilled and follow the same disposal procedures as dredging.

3. Sediment sampling information was sent to Hiawatha Landfill and Wood Island Landfill for determination regarding acceptance of the proposed dredge material. Assume for bidding purposes that the material will be accepted by landfills without additional treatment.
4. For bidding purposes assume the drain water from sediment dewatering will not be required to be treated.
5. Acceptable manufacturers of the Marina ground fault system are located in the Special Provisions No. 34.C.4(b) – Ground Fault Monitor Acceptable Manufacturers.
6. The ground fault monitor may be installed in an external panel rather than the load distribution panel, although it is not preferred.
7. The CAD file of the sheet pile wall is available from Coleman Engineering Company (CEC).
8. The Contractor will get paid for additional rock anchors if they are required to get around unknown conflicts.
9. Dock anchorage will be welded to the sheet pile after sheet pile installation.
10. Attachment of the new bin wall is shown on Sheet 20. Attachment of the new bin wall to the new sheet pile wall can be accomplished by drilling and tapping the new sheet pile wall and bolting the stringers to the sheet pile wall. No work is anticipated from the landward side of the sheet pile wall.
11. The MDEQ permit item W. of the project limitations states, *“For projects with potential impacts to fish spawning or migration, no work shall occur within fish spawning or migration timelines (i.e., windows) unless otherwise approved in writing by the Michigan Department of Natural Resources, Fisheries Division.”* No specific times were mentioned in the permit, but previous permitting on the Manistique River did not allow work or dredging in the water between April 1 and July 15.
12. Exploration for the siphon lines is paid for as part of the Sheet Pile Wall Pay Item. The Utility Exploration Pay Item is used with the water or sewer items when you are unable to locate marked utilities after a 30-minute timeframe. The pay item is described in the Measurement and Payment section of the Contract Documents.
13. The elevation of the anchor/wale is shown on Plan Sheet S3 at 579.0'. Assume the wale elevation will remain at the elevation shown on the plans.
14. If the dredging alternative is not accepted, the bin walls may be cut at the current sediment elevation (574'), leaving the bin wall and fill stone below this elevation in-place.
15. The vertical dock connection will be welded to the sheet pile wall after sheet pile wall installation.

16. The paint on the bin walls was not tested. The Contractor must assume for bidding purposes that the paint does contain lead.
17. The bin wall surrounding the siphon manhole may be left intact except for any portions required to be removed for construction.
18. The fuel system electrical wiring is proposed to exit through the sheet pile wall near the same location as the product supply lines.
19. Shop drawing submittals for the Eaton utility pedestals from the 2013 Marina project are available from CEC upon request.
20. Anchor rods are to be hot dipped galvanized as noted on Sheet S1, under General Structural Notes – Structural Steel and Miscellaneous Metals.
21. There is no difference in the construction of the sheet pile wall in Sheet S5 – Stone Alternative to Concrete Base Seal other than keeping the stone in place rather than installing concrete at the base.
22. Assume a 10' center to center distance for wale spacer distance for bidding purposes.

BID FORM

The bid form shall be replaced in its entirety with the attached version.

The following changes were made to the bid form:

1. The quantity of Bid Item 43 – 48-Inch Sanitary Manhole and Casting was changed from two (2) to three (3).
2. Pay Item 32 – Sheet Pile Wall Siphon Bump-out was added, along with renumbering of subsequent pay items.
3. The bid form was changed from Base Bid with Alternate “A” – Dredging, to two forms, one Base Bid form and one Base Bid Plus Alternate “A” – Dredging form.

TECHNICAL SPECIFICATION CHANGES

SPECIAL PROVISION REVISIONS

Add the following Special Provisions:

44. If the dredging alternative is not accepted, dredging required for the construction of the sheet pile wall and the north end bin wall can be completed from shore. Dredging associated with construction of the seawall is considered incidental to the associated Pay Item. Disposal of the dredge material associated with construction of the seawall will follow the same requirements as dredging of the Marina basin.

45. Dock manufacturer shall provide necessary cross-bracing between the sheet pile wall and the piles to support full live loading of the gangway platform and gangway.
46. Dock manufacturer shall provide and install conduit for service dock lighting.
47. The sheet pile wall cap shall be 15” channel and welded to the top of the sheet pile wall.

SECTION 01025 – MEASUREMENT AND PAYMENT REVISIONS

Section 01025 – Measurement and Payment shall be replaced in its entirety with the attached version.

Changes were made to the following bid items of Section 01025 – Measurement and Payment: Addition of Pay Item 32 – Sheet Pile Wall Siphon Bump-out, along with renumbering of subsequent bid items.

PLAN SHEET CHANGES

1. Plans Sheet S3: The dimension of 3’-8” shown on Sheet Pile Wall Detail 6/S3 should be 4’-9” (57”) center to center.
2. Plan Sheet S1: Under General Structural Notes – Rock Anchors, change, “*Anchor rods to be hot dip galvanized per ASTM A-153, min. thickness to be 3 mils.*” to “**Rock anchors** to be hot dip galvanized per ASTM A-153, min. thickness to be 3 mils.”
3. Plan Sheet S3: Detail 1/S3 – the sheet pile wall cap should read 15” channel cap instead of ¼” bent plate cap.
4. Plan Sheet S2 from the 2103 Marina Project (2103-S2) has been added to this addendum as a reference. Detail 3/S2 shows a typical corner section. This detail may be used for bidding purposes as an arrangement for the siphon bump-out corners.

BID

Bid of _____,
(hereinafter called "Bidder") organized and existing under the laws of the State of _____,
doing business as _____*; to The City of Manistique
(hereinafter called "Owner").

In compliance with your Advertisement for Bids, Bidder hereby proposes to perform all work for the Owner in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below.

By submission of this Bid, each party thereto certifies as to his/her own organization that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

Bidder hereby agrees to commence work under this Contract on or after September 15, 2018; as specified in the Notice to Proceed and to fully complete the Project by October 15, 2019. Bidder further agrees to pay as liquidated damages, the sum of \$1,000.00 each consecutive calendar day thereafter, as provided in Article 4 (4.03) of this Agreement.

Bidder acknowledges receipt of the following Addendum(s):

The Bidder agrees to perform all described work in the Contract Documents for the following unit and/or lump sum prices. The Bidder further agrees that the unit and/or lump sum prices include the furnishing of all labor, materials, tools, equipment, utilities, transportation, taxes, fees, etc., required to complete the work in strict accordance with the Contract Documents.

*Insert "a corporation", "a partnership", or "an individual", as applicable

Name of Bidder _____

City of Manistique
16209 Marina Revnovation Project - Phase II

BASE BID

Item No.	Description of Work	Unit	Qty	Price	Total Cost
GENERAL					
1	Erosion Control	L.S.	1		
2	Restoration	L.S.	1		
REMOVALS					
3	HMA Surface, Remove	L.S.	1		
4	Curb and Gutter, Remove	L.S.	1		
5	Sidewalk, Remove	L.S.	1		
6	Remove Existing Bin-Type Seawall	L.S.	1		
7	Building Demolition	L.S.	1		
8	Remove Light Poles, Complete	L.S.	1		
9	Remove Drainage Structures	Each	2		
10	Remove Storm Sewer Pipe	L.S.	1		
11	Remove Existing Sanitary Sewer Pipe	L.S.	1		
SITWORK					
12	Site Grading and Excess Material Disposal	L.S.	1		
13	Sidewalk, Conc, 4-Inch, Modified	Sft	5000		
14	Concrete, 5-Inch	Sft	450		
15	Sidewalk Ramp, Type R	Each	4		
16	HMA, LVSP, Modified	Ton	375		
17	Aggregate Base, 8-Inch	Syd	2200		
18	Curb and Gutter, Concrete, MDOT Detail "C2"	L.F.	930		
19	MDOT 6A Coarse Aggregate	Cyd	20		
20	Embankment, LM	Cyd	100		
21	Special Backfill	Cyd	20		
22	Shore Mounted Signs	L.S.	1		
23	Post, Steel, 3 lb.	L.F.	60		
24	Pavt Mrkg, Polyurea, Accessible Symbol	Each	2		
25	Pavt Mrkg, Waterborne for Rest Areas, Parks & Lots, 4-Inch, Blue	L.S.	1		
26	Pavt Mrkg, Waterborne for Rest Areas, Parks & Lots, 4-Inch, White	L.F.	760		
27	Pavt Mrkg, Waterborne for Rest Areas, Parks & Lots, 6-Inch, White	L.F.	96		
28	Fixed Barbeque	Each	2		
29	Bike Rack	Each	1		
30	Railing System	L.S.	1		

Continued on next page

Bid Form (continued)

SEAWALL					
31	Sheet Pile Wall	L.S.	1		
32	Sheet Pile Wall Siphon Bump Out	L.S.	1		
33	North Bin Structure	L.S.	1		
FLOATING PIER SYSTEM					
34	Floating Pier System	L.S.	1		
35	Fuel Pumping Facility Relocation	L.S.	1		
36	Sanitary Pump Out Station Relocation	L.S.	1		
ELECTRICAL AND LIGHTING					
37	Load Distribution Panel, 400 Amp	L.S.	1		
38	Ground Fault Upgrade	L.S.	1		
39	Electric Service, Cost to Contractor	Cost	1		
40	Lighting	L.S.	1		
WATER MAIN AND APPURTENANCES					
41	6-Inch Water Main and Hydrant	L.S.	1		
42	2-Inch Water Service, Complete	L.S.	1		
SANITARY AND STORM SEWER					
43	18-Inch Class IV RCP Sanitary Sewer	L.F.	380		
44	48-Inch Sanitary Sewer Manhole and Casting	Each	3		
45	48-Inch Storm Sewer Manhole and Casting	Each	2		
46	48-Inch Storm Sewer Manhole and Salvaged Casting	Each	1		
47	Reconstruct Existing Catch Basin	L.S.	1		
48	24-Inch Catch Basin and Casting	Each	4		
49	12-Inch Class IV RCP Storm Sewer Pipe	L.F.	235		
50	12-Inch SDR 35 PVC Storm Sewer Pipe	L.F.	86		
51	Storm Discharge Wall Penetration	Each	2		
52	Utility Exploration	Each	1		
				Total Base Bid	

Total Base Bid Amount (In Words)

Name of Bidder _____

City of Manistique

16209 Marina Revnovation Project - Phase II

BASE BID PLUS ALTERNATE "A" - DREDGING

Item No.	Description of Work	Unit	Qty	Price	Total Cost
GENERAL					
1	Erosion Control	L.S.	1		
2	Restoration	L.S.	1		
REMOVALS					
3	HMA Surface, Remove	L.S.	1		
4	Curb and Gutter, Remove	L.S.	1		
5	Sidewalk, Remove	L.S.	1		
6	Remove Existing Bin-Type Seawall	L.S.	1		
7	Building Demolition	L.S.	1		
8	Remove Light Poles, Complete	L.S.	1		
9	Remove Drainage Structures	Each	2		
10	Remove Storm Sewer Pipe	L.S.	1		
11	Remove Existing Sanitary Sewer Pipe	L.S.	1		
SITWORK					
12	Site Grading and Excess Material Disposal	L.S.	1		
13	Sidewalk, Conc, 4-Inch, Modified	Sft	5000		
14	Concrete, 5-Inch	Sft	450		
15	Sidewalk Ramp, Type R	Each	4		
16	HMA, LVSP, Modified	Ton	375		
17	Aggregate Base, 8-Inch	Syd	2200		
18	Curb and Gutter, Concrete, MDOT Detail "C2"	L.F.	930		
19	MDOT 6A Coarse Aggregate	Cyd	20		
20	Embankment, LM	Cyd	100		
21	Special Backfill	Cyd	20		
22	Shore Mounted Signs	L.S.	1		
23	Post, Steel, 3 lb.	L.F.	60		
24	Pavt Mrkg, Polyurea, Accessible Symbol	Each	2		
25	Pavt Mrkg, Waterborne for Rest Areas, Parks & Lots, 4-Inch, Blue	L.S.	1		
26	Pavt Mrkg, Waterborne for Rest Areas, Parks & Lots, 4-Inch, White	L.F.	760		
27	Pavt Mrkg, Waterborne for Rest Areas, Parks & Lots, 6-Inch, White	L.F.	96		
28	Fixed Barbeque	Each	2		
29	Bike Rack	Each	1		
30	Railing System	L.S.	1		

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Bid Form (continued)

SEAWALL					
31	Sheet Pile Wall	L.S.	1		
32	Sheet Pile Wall Siphon Bump Out	L.S.	1		
33	North Bin Structure	L.S.	1		
FLOATING PIER SYSTEM					
34	Floating Pier System	L.S.	1		
35	Fuel Pumping Facility Relocation	L.S.	1		
36	Sanitary Pump Out Station Relocation	L.S.	1		
ELECTRICAL AND LIGHTING					
37	Load Distribution Panel, 400 Amp	L.S.	1		
38	Ground Fault Upgrade	L.S.	1		
39	Electric Service, Cost to Contractor	Cost	1		
40	Lighting	L.S.	1		
WATER MAIN AND APPURTENANCES					
41	6-Inch Water Main and Hydrant	L.S.	1		
42	2-Inch Water Service, Complete	L.S.	1		
SANITARY AND STORM SEWER					
43	18-Inch Class IV RCP Sanitary Sewer	L.F.	380		
44	48-Inch Sanitary Sewer Manhole and Casting	Each	3		
45	48-Inch Storm Sewer Manhole and Casting	Each	2		
46	48-Inch Storm Sewer Manhole and Salvaged Casting	Each	1		
47	Reconstruct Existing Catch Basin	L.S.	1		
48	24-Inch Catch Basin and Casting	Each	4		
49	12-Inch Class IV RCP Storm Sewer Pipe	L.F.	235		
50	12-Inch SDR 35 PVC Storm Sewer Pipe	L.F.	86		
51	Storm Discharge Wall Penetration	Each	2		
52	Utility Exploration	Each	1		
ALTERNATE "A" - DREDGING					
A1	Mobilization, Dredging	L.S.	1		
A2	Dredging/Excavation	Cyd	4200		
A3	Landfill Disposal of Excavated Material	Ton	8400		
A4	Remove Existing Dock Support Pads	L.S.	1		
				Total Bid	

Total Base Bid Plus Alternate "A" – Dredging Amount (In Words)

The Bidder declares that he/she has carefully examined the Contract Documents for the Project and that he/she has satisfied himself/herself as to the quantities of and conditions of work involved. The Bidder further declares that he/she understands that the quantities of work and materials, as included herein, are intended to indicate the general nature of the work and to identify the said quantities with the detailed requirements of the Contract Documents, and that this Bid is made according to the provisions and under the terms of the Contract Documents, which Contract Documents are hereby made a part of this Bid.

Bidder understands that the Owner reserves the right to reject any or all bids.

The Bidder agrees that this Bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving Bids.

Upon receipt of written notice of the acceptance of this Bid, Bidder will execute and deliver all required Contract Documents within fifteen (15) calendar days from the date of receipt thereof. The Bidder fully understands that the Bid Guaranty attached in the sum of _____ (\$_____) shall become the property of the Owner in the event the required Contract Documents are not executed and delivered within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

IN WITNESS WHEREOF, the undersigned has caused this instrument to be executed (and its seal affixed) by its duly authorized officer this _____ day of _____, _____.

(SEAL)

Contractor

By

Attest

License Number

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Measurement and payment criteria applicable to the Work performed under a unit price payment method.
- B. Defect assessment and non-payment for rejected work.
- C. Work item descriptions.

1.02 AUTHORITY

- A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
- B. Take all measurements and compute quantities. The Engineer and Owner will verify measurements and quantities.

1.03 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Actual quantities and measurements supplied or placed in the Work and verified by the Engineer will determine payment.
- B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit sum/prices contracted.
- C. Any work not listed in the proposal but shown on the plans or reasonably expected for provision of a functional system shall be considered to be incidental to the work items.

1.04 MEASUREMENT OF QUANTITIES

- A. Measurement by Weight: Measured by the pound or ton determined from delivery tickets from approved scales.
- B. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness, compacted-in-place (CIP) or as noted on bid schedule.

- C. Measurement by Area: Measured by square dimension using mean length and width or radius.
- D. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord, from center to center of appurtenance.
- E. Stipulated Sum/Price per each Measurement: Items measured by per each as appropriate, as a completed item or unit of the Work.

1.05 PAYMENT

- A. Payment Includes: Full compensation to furnish all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.
- B. Final payment and final contract amount for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Architect/Engineer multiplied by the unit sum/price for Work which is incorporated in or made necessary by the Work.
- C. Dewatering of the work area shall be incidental to the individual work items requiring dewatering work.
- D. Saw cutting of existing bituminous or concrete pavements will be considered incidental to the associated work item.
- E. Mobilization shall be incidental to the individual work items, unless otherwise noted.
- F. Payment for water required as part of the project shall be incidental to the individual work items, unless otherwise noted.
- G. Payment for Traffic Control is considered incidental to the associated work items unless otherwise noted.

1.06 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.

- B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct one of the following remedies:
 - 1. The defective Work may remain, but the unit price will be adjusted to a new price at the discretion of the Engineer and approval of the Owner.
 - 2. The defective Work will be partially repaired to the instructions of the Engineer, and the unit sum/price will be adjusted to a new sum/price at the discretion of the Engineer and approval of the Owner.
- C. The authority of the Engineer and Owner to assess the defect and identify payment adjustment is final.

1.07 BID ITEMS

GENERAL

- A. Bid Item Descriptions
 - 1. EROSION CONTROL
 - a. Measurement will be by the unit Lump Sum.
 - b. Payment includes installation of all erosion control measures, all materials, devices, maintenance, labor and equipment necessary to effectively control, monitor, maintain and report erosion in areas disturbed by construction activities in accordance with the plans, specifications and the Soil Erosion and Sedimentation Control permit. Payment does not include the turbidly curtain associated with dredging. Partial payments for this item shall be based on a percentage of the total contract completed at the time of any given pay application multiplied by the lump sum unit price for “Erosion Control” provided on the Bid Schedule. Payment shall include furnishing a Certified Storm Water Operator in accordance with Section 02312 – Soil Erosion and Sedimentation Control.
 - 2. RESTORATION
 - a. Measurement will be by the unit Lump Sum for restoration of all vegetated areas disturbed by construction (estimate 4,500 Syd).
 - b. Payment shall include all topsoil (4-inch minimum) salvaged and imported, grading, raking, seed (mixture TDS), fertilizer (chemical nutrient, Class A), mulch blanket excelsior without net, anchoring, water and watering operations in accordance with Section 816 of the Michigan Department of Transportation Standard Specifications for Construction. Additional topsoil will be required in areas where pavement, buildings and sidewalk are removed.

REMOVALS

3. HMA SURFACE, REMOVE
 - a. Measurement will be by the unit Lump Sum of existing HMA surface removal (regardless of thickness) as shown on the plans (est. 3,060 Syd).
 - b. Payment includes all labor, equipment, trucking and disposal costs associated with the removal and disposal of existing HMA surfaces, full depth, including saw cutting at the limits of HMA removal as called for on the plans. All existing HMA destined to remain in place shall be saw cut neat line at the limits of HMA removal, if the Contractor's operations damage existing HMA not designated for removal on the plans or indicated in the field by the Engineer, the Contractor shall repair or replace HMA at no additional cost.
4. CURB AND GUTTER, REMOVE
 - a. Measurement will be by the unit Lump Sum of curb removed as shown on the plans (est. 940 Ft).
 - b. Payment includes all labor, equipment, trucking and disposal costs associated with the saw cutting, removal, and disposal of existing concrete curb as called for on the plans.
5. SIDEWALK, REMOVE
 - a. Measurement will be by the unit Lump Sum of existing concrete sidewalk (regardless of thickness) removed as shown on the plans (est. 175 Syd).
 - b. Payment includes all labor, equipment, trucking and disposal costs associated with the removal and disposal of existing concrete sidewalk as called for on the plans. Concrete sidewalk located on the surface of the existing bin-type seawall is paid for under the Remove Existing Bin-Type Seawall Pay Item.
6. REMOVE EXISTING BIN-TYPE SEAWALL
 - a. Measurement will be by the unit Lump Sum.
 - b. Payment shall include the complete excavation and removal of the existing concrete surface, bin walls, stone, rip rap extending into the river, utility pedestals, conduits, wiring, piping, anchors, foundations, and all other parts of the pier requiring removal to facilitate construction and dredging activities. Payment shall include compliance with all applicable State, Federal, local codes and permits; turbidity curtain; all measures necessary for protection of the existing siphon sanitary sewer.

7. BUILDING DEMOLITION

- a. Measurement will be by the unit Lump Sum, for removal of existing 1973 Comfort Station Building and appurtenances.
- b. Payment shall include the complete removal and disposal of building, materials within building, wiring, foundations, piping, water fountain, ice chest, adjacent bushes, trees, shrubs, stone and sidewalk to the limits shown on the plans; capping, removal or filling of attached piping with flowable fill as specified by the Owner; handling and disposal of lead and asbestos wastes; disposal costs; coordination and compliance with requirements of associated utilities; permitting and notifications; all necessary safety compliance; compliance with all applicable State, Federal, and local codes.

8. REMOVE LIGHT POLES, COMPLETE

- a. Measurement will be by the unit Lump Sum.
- b. Payment includes all labor, equipment, trucking, disposal costs, backfill material, backfilling, and compaction associated with the removal and disposal of existing lighting units, poles, appurtenances, and associated foundations (if applicable), wiring and conduits.

9. REMOVE DRAINAGE STRUCTURE

- a. Measurement will be by the unit Each for removal of storm sewer manholes and catch basins identified on the plans and as directed by the Engineer.
- b. Payment shall include the complete excavation and removal of the existing catch basin and storm manhole as shown on the plans and backfilling the structure and excavation with granular material compacted-in-place. Payment only applies to storm structures that fall outside of the utility trench excavated for other items of work.

10. REMOVE STORM SEWER PIPE

- a. Measurement will be by the unit Lump Sum for removal of storm sewer piping (regardless of diameter or type) as identified on the plans (est. 187 Ft).

- b. Payment shall include the complete excavation, cutting, removal and disposal of the existing piping and reinstallation and compaction of excavated material and replacement material to compensate for pipe removed.

11. REMOVE EXISTING SANITARY SEWER PIPE

- a. Measurement will be by the unit Lump Sum for removal of sanitary sewer piping (regardless of diameter or type) as identified on the plans (est. 327 Ft).
- b. Payment shall include the complete excavation, cutting, removal and disposal of the existing piping and reinstallation and compaction of excavated material and replacement material to compensate for pipe removed.

SITE WORK

12. SITE GRADING AND EXCESS MATERIAL DISPOSAL

- a. Measurement shall be by the unit Lump Sum for the estimated volume indicated. No specific measurements or calculations will be made in this regard. If there is no change to the plan, the Contractor shall have no basis to claim extra quantity based on truck counts or any other method or measurement. If the Engineer directs a change in the plan, an appropriate adjustment will be negotiated (either higher or lower).
- b. Payment shall include compensation in full for excavating, loading, hauling, disposal, sorting of unsuitable materials, moving, and general grading and compaction of earth required to attain the proposed final grades on site that require cutting or filling activities except as provided for under other pay items. Cut operations above the OHWM are estimated at 355 cubic yards ±. Fill operations above the OHWM are estimated at 280 cubic yards ±. Cut and fill estimates are original surface to final surface and do not consider topsoil, pavement, base, subbase, sidewalk, etc. removals or installation quantities.

13. SIDEWALK, CONC, 4-INCH, MODIFIED

- a. Measured by the unit Square Foot.
- b. Payment shall be in accordance with Section 803 of the latest version of the Michigan Department of Transportation Standard Specifications for Construction. Payment also includes reinforcement, expansion material, sealant, grading as necessary for ADA compliance and positive drainage; protection during curing; furnishing and applying curing compound; coordination with other contractors so positive drainage is obtained between sidewalk and HMA installation; and erosion control. Payment does not include sidewalk ramps.

14. CONCRETE, 5-INCH

- a. Measured by the unit Square Foot.
- b. Payment shall be in accordance with Section 03001 – Concrete of the specifications. Payment includes all materials; subgrade preparation, excavation, grading, and compaction; furnishing, placing and compacting 4 inches of MDOT Class II granular material; forms; furnishing and placing concrete, and reinforcement; protection during curing; furnishing and applying curing compound; grading as necessary for ADA compliance and positive drainage; coordination with other contractors, and erosion control.

15. SIDEWALK RAMP, TYPE R

- a. Measurement shall be by the unit Each.
- b. Payment shall be in accordance with Section 803 of the latest version of the Michigan Department of Transportation Standard Specifications for Construction. Payment includes all materials; subgrade preparation, excavation, grading, and compaction; furnishing, placing and compacting 4 inches of MDOT Class II granular material; forms; furnishing and placing concrete, reinforcement, expansion material, monolithic rolled curbs or side flares along the longitudinal edges of the ramp and curb and gutter openings; detectable warning surface, protection during curing; furnishing and applying curing compound; grading as necessary for ADA compliance and positive drainage; coordination with other contractors, and erosion control. Sidewalk Ramp, Type R are as shown on the drawings and may or may not exceed 5%.

16. HMA, LVSP, MODIFIED
 - a. Measurement shall be by the unit Ton.
 - b. Payment shall be in accordance with Section 501 of the latest version of the Michigan Department of Transportation Standard Specifications for Construction. Payment also includes grading and compaction of base to ensure proper drainage and ADA accessibility compliance; coordination with sidewalk contractor to obtain positive drainage between sidewalk and HMA installation.

17. AGGREGATE BASE, 8-INCH
 - a. Measurement will be by the unit Square Yard of 8-inch thickness of MDOT 22A aggregate base course compacted-in-place.
 - b. Payment shall be in accordance with Section 302 of the latest version of the Michigan Department of Transportation Standard Specifications for Construction. Payment includes providing, installing, grading and compacting 8-inch (min.) of MDOT 22A Aggregate Base CIP, as required, to construct paved area or as shown on the plans.

18. CURB AND GUTTER, CONCRETE, MDOT DETAIL "C2"
 - a. Measurement will be by the unit Linear Foot. Curb will be measured through sidewalk ramps.
 - b. Payment includes saw cutting of existing curb, doweling into adjacent curb, preparation of subgrade, compaction, forms, furnishing and placing concrete, protection of concrete during curing as necessary to construct the curb at locations shown on the plans, or as directed in the field by the Engineer to specified requirements, and furnishing and applying curing compound; curb modification at ramps and coordination with sidewalk contractor.

19. MDOT 6A COARSE AGGREGATE
 - a. Measurement shall be by the unit Cubic Yard as delivered per truckload yardage to support poor soil conditions as authorized by the Engineer. Partial loads will be estimated to the nearest cubic yard by the Engineer. The Engineer will determine if the need for stone fill is required prior to authorizing stone refill.

- b. Payment shall include providing, hauling, and placing stone fill as authorized by the Engineer and includes excavation and disposal of unsuitable soils replaced by the stone refill.

20. EMBANKMENT, LM

- a. Measurement will be by the unit Cubic Yard, by volume loose measure as determined by the Engineer.
- b. Payment shall be in accordance with Section 205 of the latest version of the Michigan Department of Transportation Standard Specifications for Construction. Payment includes the cost of providing, hauling, placing and compacting material at the required locations. No payment will be made for Embankment, LM unless its use is specifically directed by the Engineer.

21. SPECIAL BACKFILL

- a. Measurement shall be by the unit Cubic Yard “as compacted-in-place” calculated by the average end area method when replacing soils found to be unsuitable for use as structure trench backfill. The Engineer will determine if existing material is unsuitable for use as backfill. No payment shall be made for Special Backfill unless its use is specifically directed by the Engineer.
- b. Payment includes providing, hauling, placing and compacting imported “Special Backfill” as defined in Section 02300 - Earthwork 3.02B(1) of the specifications.

22. SHORE MOUNTED SIGNS

- a. Signs will be measured by the unit Lump Sum for the type of sign required on the plans.
- b. Payment shall be compensation in full for all materials, labor and equipment necessary to furnish and install signs of the type required on the plans and in the specifications. The signs include, (2) ADA Reserved Parking, (2) Van Accessible, (1) No Fishing in Marina, (1) Boaters Only, (1) NEC No Swimming Warning and (1) Double Sided Restroom.

23. POST, STEEL, 3 LB.

- a. Sign posts will be measured by the unit Linear Foot as measured in the field by the Engineer.

- b. Payment shall be compensation in full for all materials, labor and equipment necessary to furnish and install sign posts of the type required on the plans.
- 24. PAVT MRKG, POLYUREA, ACCESSIBLE SYMBOL
 - a. Measurement will be by the unit Each.
 - b. Payment shall be in accordance with Section 811 of the latest version of the Michigan Department of Transportation Standard Specifications for Construction.
- 25. PAVT MRKG, WATERBORNE FOR REST AREAS, PARKS & LOTS, 4-INCH, BLUE
 - a. Measurement shall be by the unit Lump Sum.
 - b. Payment shall be in accordance with Section 811 of the latest version of the Michigan Department of Transportation Standard Specifications for Construction. Payment includes cross-hatch striping of ADA accessible unloading areas and ADA accessible parking stalls as shown on the plans.
- 26. PAVT MRKG, WATERBORNE FOR REST AREAS, PARKS & LOTS, 4-INCH, WHITE
 - a. Measurement shall be by the unit Linear Foot.
 - b. Payment shall be in accordance with Section 811 of the latest version of the Michigan Department of Transportation Standard Specifications for Construction.
- 27. PAVT MRKG, WATERBORNE FOR REST AREAS, PARKS & LOTS, 6-INCH, WHITE
 - a. Measurement shall be by the unit Linear Foot.
 - b. Payment shall be in accordance with Section 811 of the latest version of the Michigan Department of Transportation Standard Specifications for Construction.
- 28. FIXED BARBEQUE
 - a. Measurement will be by the unit Each properly installed and counted in place.
 - b. Payment includes all labor, equipment, and materials necessary to install City provided barbeque in accordance with the plans and manufacturer's instructions.

29. BIKE RACK

- a. Measurement will be by the unit Each properly installed and counted in place.
- b. Payment includes all labor, equipment, and materials necessary to install the City provided bike rack in accordance with the plans and manufacturer's instructions.

30. RAILING SYSTEM

- a. Measurement will be by the unit Lump Sum.
- b. Payment includes all labor, equipment, and materials necessary to install the railing system in accordance with the plans, specifications and manufacturer's instructions.

SEAWALL

31. SHEET PILE WALL

- a. Measurement will be by the unit Lump Sum for the project sheet pile wall with the exception of the siphon bump-out as defined in Pay Item – Sheet Pile Wall Siphon Bump-out.
- b. Payment includes all excavation; excavation of rocks smaller than 1 cubic yard and rock that does not require blasting; separating removal and disposal of rocks not suitable for use in backfill; furnishing and installing sheet pile, sheet pile cap, channel wale, wale splicing, anti-wash concrete, anchor pins, tie back wall, anchor rod, rock drilling, rock anchors, attachment to sheet pile, connections, welding, backer bars, splicing, fasteners and all other wall appurtenances; excavation and removal of interference objects, underwater exploration, any modifications or alteration necessary due to field conditions, temporary sheeting and bracing and protection of existing facilities; coordination with Owner, other contractors, and utilities, compliance with all Federal, State and local codes and permit requirements; backfilling, compaction, and all other work necessary for a complete wall installation. Payment shall include all measures necessary for protection of the existing sanitary sewer.

32. SHEET PILE WALL SIPHON BUMP-OUT

- a. Measurement will be by the unit Lump Sum for that section of sheet pile wall shown on the plans that deviates from the northeast – southwest main wall for the purpose of avoiding the sanitary sewer siphon manhole and piping.
- b. Payment includes all excavation; excavation of rocks smaller than 1 cubic yard and rock that does not require blasting; separating removal and disposal of rocks not suitable for use in backfill; furnishing and installing sheet pile, sheet pile cap, channel wale, wale splicing, anti-wash concrete, anchor pins, tie back wall, anchor rod, rock drilling, rock anchors, attachment to sheet pile, connections, welding, backer bars, splicing, fasteners and all other wall appurtenances; excavation and removal of interference objects, underwater exploration, any modifications or alteration necessary due to field conditions, temporary sheeting and bracing and protection of existing facilities; coordination with Owner, other contractors, and utilities, compliance with all Federal, State and local codes and permit requirements; backfilling, compaction, and all other work necessary for a complete wall installation. Payment shall include all measures necessary for protection of the existing sanitary sewer.

33. NORTH BIN STRUCTURE

- a. Measurement will be by the unit Lump Sum.
- b. Payment includes all excavation; excavation of rocks smaller than 1 cubic yard and rock that does not require blasting; separating removal and disposal of rocks not suitable for use in backfill; furnishing and installing bin structure, fasteners and appurtenances, attachment to sheet pile wall, fill material, temporary sheeting and bracing and protection of existing facilities, excavation and removal of interference objects, underwater exploration, salvaging, surveying and reinstalling existing stream gauge on new structure, temporary surface water and groundwater control; any modifications or alteration necessary due to field conditions; coordination with Owner, other contractors, and utilities; compliance with all Federal, State and local codes and permit requirements; backfilling, compaction, and all other work necessary for a complete wall installation.

FLOATING PIER SYSTEM

34. FLOATING PIER SYSTEM

- a. Measurement will be by the unit Lump Sum.
- b. Payment shall be compensation in full for structural and layout design of floating pier system based on the plans and specifications; providing and installing the floating pier system according to the plans and specifications that includes, but not limited to, all floating piers, connections to new sheet pile wall, anchoring, gangway, gangway platform, fenders, cleats, ladders, utility pedestals, water supply from wall connection to utility pedestal, electric wiring from main distribution panel to utility pedestal, fire centers, dry hydrant fire suppression system, assistance with fuel and sanitary pump out relocation to docks, fuel dispensing sign, slip signs, ice suppression system, Operation & Maintenance manual and all other work necessary for a complete floating pier installation.

35. FUEL PUMPING FACILITY RELOCATION

- a. Measurement will be by the unit Lump Sum for providing and relocating existing fuel pumps to the proposed service dock.
- b. Payment includes all labor, materials, and equipment necessary to provide and relocate existing fuel pumping equipment to the proposed service dock. Payment includes coordination with dock manufacturer, sealing of existing pump base, extending power and communication cables, extending fuel piping, connections, rigid and flexible piping, mounting, relocation of emergency fuel shut-off and sign; and all other materials and labor necessary for a complete and functional installation.

36. SANITARY PUMP OUT STATION RELOCATION

- a. Measurement will be by the unit Lump Sum.
- b. Payment includes all labor, materials, and equipment necessary to provide and relocate existing sanitary pumping equipment to the proposed service dock. Payment includes coordination with dock manufacturer, removal of existing concrete pad, providing and installing and painting Quazite type box, extending power cables, connections, rigid and flexible piping, mounting, and all other materials and labor necessary for a complete and functional installation.

ELECTRICAL AND LIGHTING

37. LOAD DISTRIBUTION PANEL, 400 AMP

- a. Measurement will be by the unit Lump Sum.
- b. Payment shall be compensation in full for providing and installing electrical service distribution panel units as specified including excavation, foundation, anchoring, backfill, compaction, wiring, conduit, meter base, controls, breakers, ground fault system, photocell, contactors, switches, outlets, SPD, warning light, permitting, connection to transformer, and all other incidentals and appurtenances required to complete the work for a complete and working installation. Payment will also include coordination with other contractors and the local electric utility. Costs incurred from local utility for electrical service will be paid for under pay item - Electrical Service, Cost to Contractor.

38. GROUND FAULT UPGRADE

- a. Measurement will be by the unit Lump Sum.
- b. Payment shall include all labor, equipment, and materials required to upgrade the existing three (3) Eaton Lighthouse utility pedestals installed in 2013 to comply with current ground fault protection requirements as outlined in NEC Article 555.3. The three (3) Lighthouse units contain a total of (5) 30 amp breakers and (5) 50 amp breakers. Payment also includes evaluation of the shore power system for compliance with the NEC 2017 edition.

39. ELECTRIC SERVICE, COST TO CONTRACTOR

- a. Measurement will be by the direct reimbursement cost for Contractor's invoiced amount from the electric utility to provide electric service to the site.
- b. Payment shall be solely based on the Contractor's invoices from the electric utility plus five percent (5%) of the cost. Payment also includes coordination with the electric utility.

40. LIGHTING

- a. Measurement will be by the unit Lump Sum for providing and installing lighting as shown on the plans.
- b. Payment includes all labor, materials, and equipment necessary to provide and install light fixtures, poles, bases, conduits, wire, connections, controls, switches, and all other materials and labor necessary for a complete and functional installation.

WATER MAIN & APPURTENANCES

41. 6-INCH WATER MAIN AND HYDRANT

- a. Measurement will be by the unit Lump Sum.
- b. Payment includes all excavation including rock that does not require blasting for removal by conventional methods and boulders less than 1 cubic yard in size, pipe bedding; removal and disposal of existing unsuitable or excess material; separating, removal, and disposal of rocks not suitable for use in backfill (stones larger than 6 inches in diameter); trench backfill; clearing and grubbing; temporary removal and replacement of obstacles; testing and disinfection; compaction; furnishing and installing the pipe, valves, valve boxes, fittings, connections to existing pipe, hydrant assembly, stone, concrete, hydrant marker and flag, "pump after use" sign, auxiliary gate valve, gate valve adaptor and box and all required blocking, restraint and backfill as specified herein and indicated on the details provided on the plans; temporary surface water and groundwater control; temporary sheeting and bracing and protection of existing facilities; and provision of record drawings (as-builts). Special Backfill is not included in this pay item.

42. 2-INCH WATER SERVICE, COMPLETE

- a. Measurement will be by the unit Lump Sum
- b. Payment includes all excavation including rock that does not require blasting for removal by conventional methods and boulders less than 1 cubic yard in size, pipe bedding; removal and disposal of existing unsuitable or excess material; separating, removal, and disposal of rocks not suitable for use in backfill (stones larger than 6 inches in diameter); trench backfill; clearing and grubbing; temporary removal and replacement of obstacles; testing and disinfection; compaction; furnishing and installing the pipe, 2-inch corporation stop, copper, stainless steel and pex piping, curb stop and curb box, valves, winterizing riser, and box, connectors; installation of City

provided items as noted on the detail plans; coring of sheet pile tie-back wall, coring and sealing of sheet pile seawall; temporary surface water and groundwater control; temporary sheeting and bracing and protection of existing facilities; and provision of record drawings (as-builts). Special Backfill is not included in this pay item.

SEWER MAIN & APPURTENANCES

43. 18-INCH CLASS IV RCP SANITARY SEWER

- a. Measurement will be by the unit Linear Foot of pipe installed, of the designated size, measured in place horizontally over the centerline of the pipe from centerline of manhole casting to centerline of manhole casting.
- b. Payment will include all materials, labor, and equipment required for excavation; excavation of rocks smaller than 1 cubic yard and rock that does not require blasting; separating removal and disposal of rocks not suitable for use in backfill (stones larger than 6 inches in diameter); removal and disposal of unsuitable or excess material; complete removal and disposal of all existing manholes and existing sewer pipe encountered within the limits of the trench excavation; furnishing and installing pipe, pipe bedding, miscellaneous caps, bends and fittings; trenching; bedding; haunching; backfill; testing; compaction; grading; temporary removal and replacement of obstacles; temporary surface water and groundwater control; temporary sheeting and bracing and protection of existing facilities; and temporary by-pass pumping.

44. 48-INCH SANITARY SEWER MANHOLE AND CASTING

- a. Measurement will be by the unit Each.
- b. Payment will include all materials, labor, and equipment required to provide and install a 48-inch diameter precast concrete manhole including, but not limited to location of existing sewer main, saw cutting and removal of existing pavement, excavation, excavation of rocks smaller than 1 cubic yard and rock that does not require blasting, separating, removal and disposal of rocks not suitable for use in backfill (stones larger than 6 inches in diameter); base aggregate; backfill; compaction; hauling and disposal of existing manholes and excess excavated material; connections to existing pipe; cover and casting; temporary surface water control; temporary sheeting and bracing and protection of existing facilities; providing record drawings (i.e. as-builts); and all other appurtenances required

to complete the work. Payment will also include custom logo casting as used on previous sanitary sewer projects.

45. 48-INCH STORM SEWER MANHOLE AND CASTING

- a. Measurement will be by the unit Each.
- b. Payment will include all materials, labor, and equipment required to provide and install a 48-inch diameter precast concrete manhole including, but not limited to excavation, excavation of rocks smaller than 1 cubic yard and rock that does not require blasting, separating removal and disposal of rocks not suitable for use in backfill, complete removal and disposal of all existing drainage structures and existing sewer pipe encountered within the limits of the trench excavation, base aggregate; backfill; compaction; connection to existing storm sewer pipe, hauling and disposal of excess excavated material; pipe connections; cover and casting; and all other appurtenances required to complete the work.

46. 48-INCH STORM SEWER MANHOLE AND SALVAGED CASTING

- a. Measurement will be by the unit Each.
- b. Payment will include all materials, labor, and equipment required to provide and install a 48-inch diameter precast concrete manhole including, but not limited to excavation, excavation of rocks smaller than 1 cubic yard and rock that does not require blasting, separating removal and disposal of rocks not suitable for use in backfill, complete removal and disposal of all existing drainage structures and existing sewer pipe encountered within the limits of the trench excavation, base aggregate; backfill; compaction; connection to existing storm sewer pipe, hauling and disposal of excess excavated material; pipe connections; install salvaged cover and casting from existing manhole; and all other appurtenances required to complete the work.

47. RECONSTRUCT EXISTING CATCH BASIN

- a. Measurement will be by the unit Lump Sum.
- b. Payment shall include the complete excavation, coring, bulkheading, connection to new pipe, removal and disposal of cored material, and reinstallation and compaction of excavated material.

48. 24-INCH CATCH BASIN AND CASTING

- a. Measurement will be by the unit Each.
- b. Payment will include all materials, labor, and equipment required to provide and install a 24-inch diameter precast concrete catch basin including, but not limited to excavation, excavation of rocks smaller than 1 cubic yard and rock that does not require blasting, separating removal and disposal of rocks not suitable for use in backfill, complete removal and disposal of all existing drainage structures and existing sewer pipe encountered within the limits of the trench excavation, base aggregate; backfill; compaction; hauling and disposal of excess excavated material; pipe connections; cover and casting; and all other appurtenances required to complete the work.

49. 12- INCH CLASS IV RCP STORM SEWER PIPE

- a. Measurement will be by the unit Linear Foot of pipe installed, of the designated size, measured in place horizontally over the centerline of the pipe from centerline of manhole casting to centerline of manhole casting or outfall of pipe.
- b. Payment includes all excavation; excavation of rocks smaller than 1 cubic yard and rock that does not require blasting; separating removal and disposal of rocks not suitable for use in backfill; complete removal and disposal of all existing manholes and existing sewer pipe encountered within the limits of the trench excavation, furnishing and installing pipe; and miscellaneous caps, bends and fittings; trenching; bedding; haunching; backfill; testing; compaction; grading; temporary surface water and groundwater control; coring sheet pile tie-back wall; temporary removal and replacement of obstacles, and temporary by-pass pumping.

50. 12- INCH SDR35 PVC STORM SEWER PIPE

- a. Measurement will be by the unit Linear Foot of pipe installed, of the designated size, measured in place horizontally over the centerline of the pipe from centerline of manhole casting to centerline of manhole casting or outfall of pipe.
- b. Payment includes all excavation; excavation of rocks smaller than 1 cubic yard and rock that does not require blasting; separating removal and disposal of rocks not suitable for use in backfill; complete removal and disposal of all existing manholes and existing

sewer pipe encountered within the limits of the trench excavation, furnishing and installing pipe; and miscellaneous caps, bends and fittings; trenching; bedding; haunching; backfill; testing; compaction; grading; temporary surface water and groundwater control; coring sheet pile tie-back wall; temporary removal and replacement of obstacles, and temporary by-pass pumping.

51. STORM DISCHARGE WALL PENETRATION

- a. Measurement will be by the unit Each.
- b. Payment will include all materials, labor, and equipment required to provide and install storm discharge through the sheet pile wall with splash plate, sealing and all other appurtenances required to complete the work according to the storm discharge wall penetration detail shown on the plans.

52. UTILITY EXPLORATION

- a. Measurement will be by the unit Each for each utility exploration occurrence which exceeds 30 minutes in duration, except in the case where so designated on the plans then utility exploration shall be measured as one (1) each regardless of duration. Measurement will begin after the initial 30 minute time period has elapsed, the excavation has ended and utility representatives, materials, and equipment are present. Utility Exploration shall only be measured and paid for when specifically authorized by the Engineer.
- b. Payment at the unit price shall be compensation in full for all labor, tools, equipment and materials necessary for locating and identifying buried utilities. Payment will be made for each 30 minute time interval after the initial 30 minutes has elapsed in accordance with the following schedule:

Suspension of Work Duration	Compensation for Utility Exploration Units
0-30 minutes	0
31-60 minutes	1 each
61-90 minutes	2 each
91-120 minutes	3 each

ALTERNATE “A” - DREDGING

A1. MOBILIZATION, DREDGING

- a. Measurement will be by the unit Lump Sum.
- b. Payment will include all preparatory work and operations including, but not limited to the movement of personnel, equipment, supplies, and incidentals to the project site; the establishment of Contractor’s facilities to support work on the project including associated job site posters; expenses incurred, before beginning work on pay items at the project site; and pre-construction costs, exclusive of bidding costs, and other costs that are necessary direct costs to the project rather than directly attributable to other pay items under the contract; and demobilization.

A2. DREDGING/EXCAVATION

- a. Measurement shall be by the unit Cubic Yard for the volume as determined by a pre-bathymetric survey and post-bathymetric survey performed by the Contractor.
- b. Payment shall include compensation in full for excavation and/or dredging equipment, loading and hauling, dewatering, BOD testing, and any additional analytical testing as required by the selected landfill for Class II landfill disposal; water quality protective measures including turbidity curtain; pre-bathymetric and post-bathymetric surveys; and complying with applicable regulations and permits. Payment shall include removal of material from the locations and elevations shown on the plans. No extra compensation will be made for non-contiguous excavations or for re-excavation in previously excavated areas.

A3. LANDFILL DISPOSAL OF EXCAVATED MATERIAL

- a. Measurement shall be by the unit Ton delivered to the landfill as determined from landfill receipts.
- b. Payment shall include compensation in full for all labor, equipment, sorting of material, loading and hauling, landfill disposal fees, coordination and complying with applicable permits.

A4. REMOVE EXISTING DOCK SUPPORT PADS

- a. Measurement will be by the unit Lump Sum.
- b. Payment shall include the complete excavation, removal and disposal of the existing concrete dock support pads located in the Marina basin and as shown on the plans. Removal of the pads is assumed to be completed as part of the dredging operations, but can be completed as a separate operation.

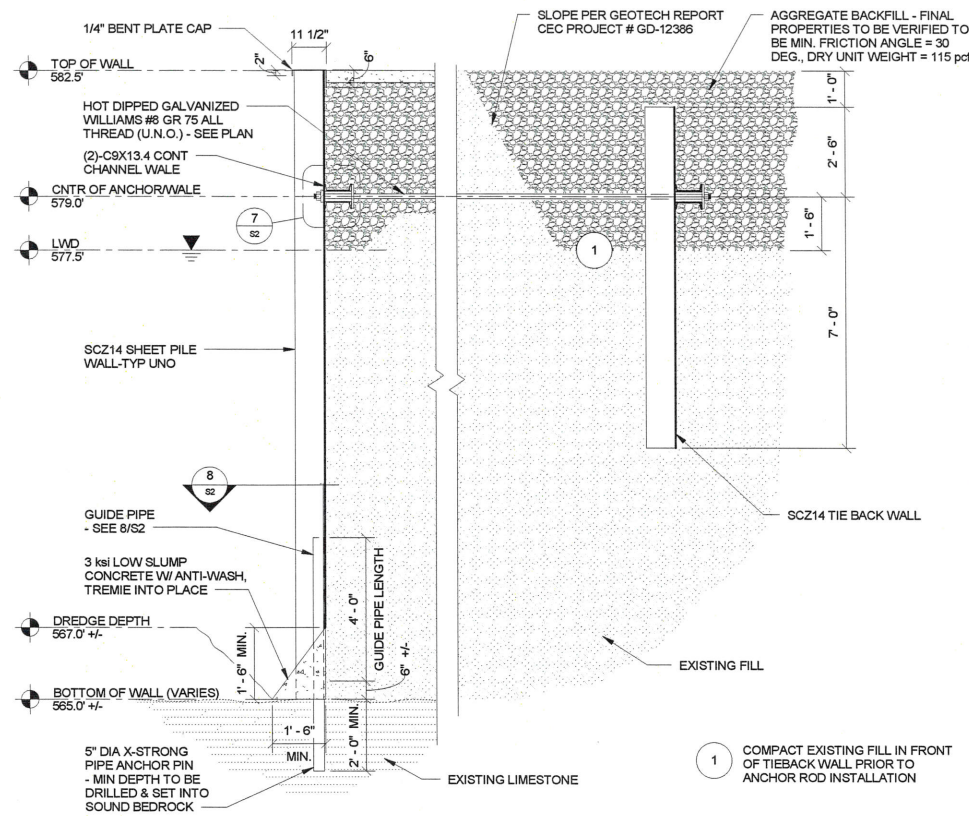
PART 2 – PRODUCTS

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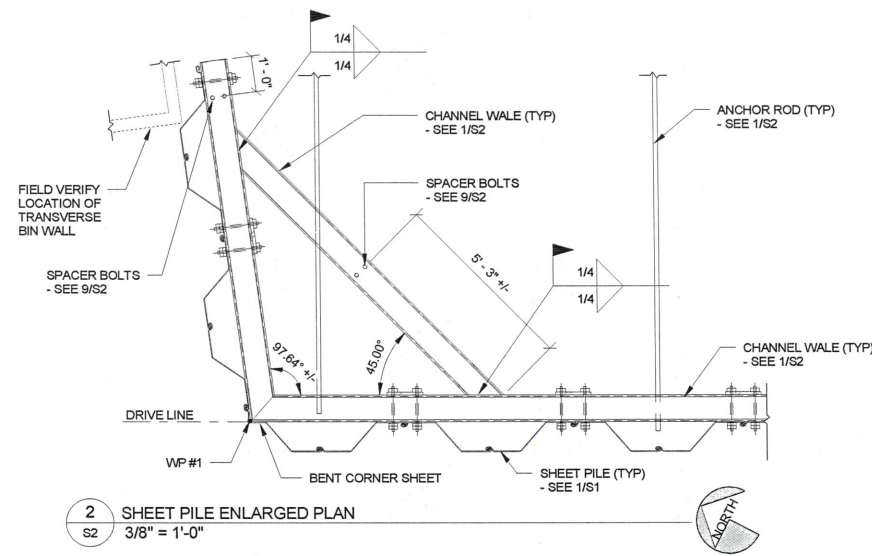
PART 3 – EXECUTION

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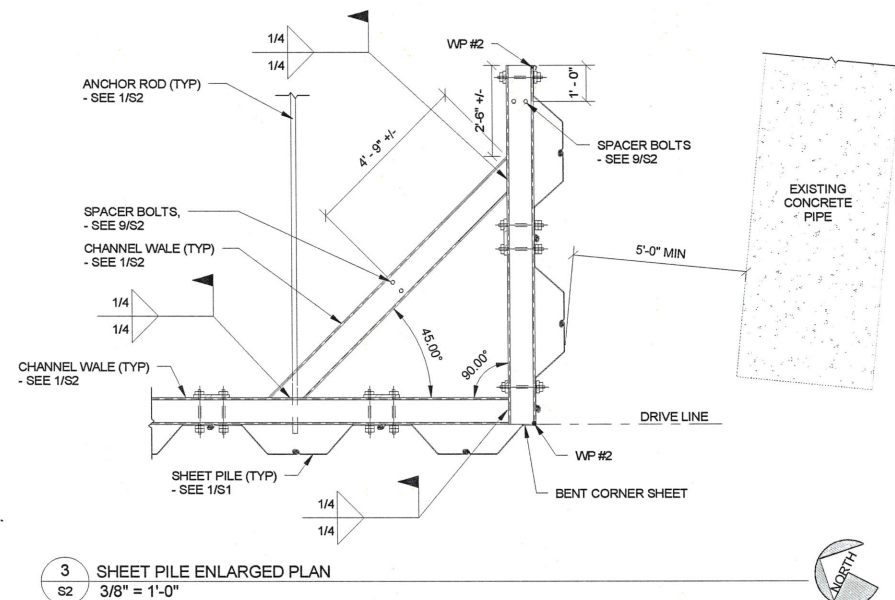
END OF SECTION



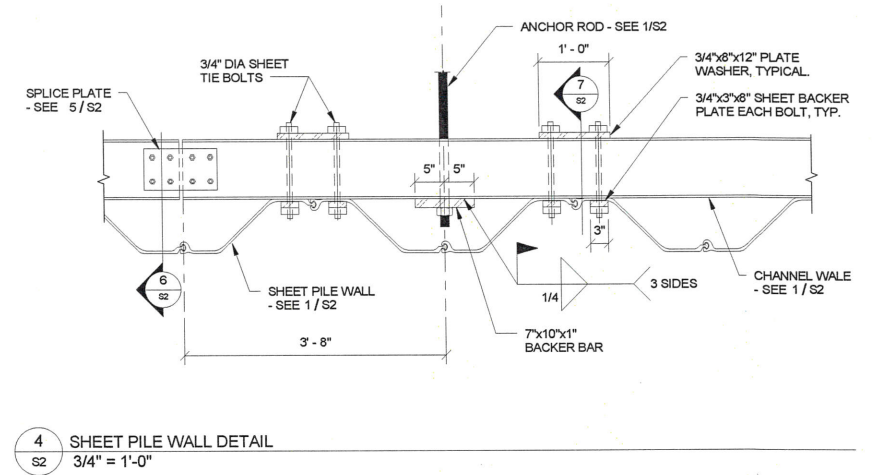
1 TYPICAL SHEET PILE WALL SECTION
S2 3/8" = 1'-0"



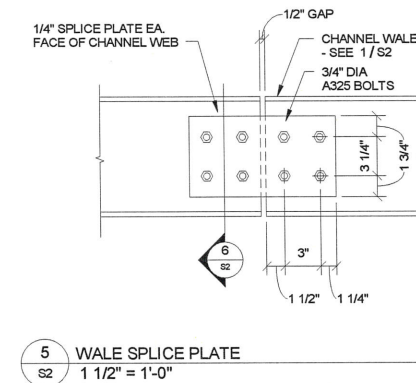
2 SHEET PILE ENLARGED PLAN
S2 3/8" = 1'-0"



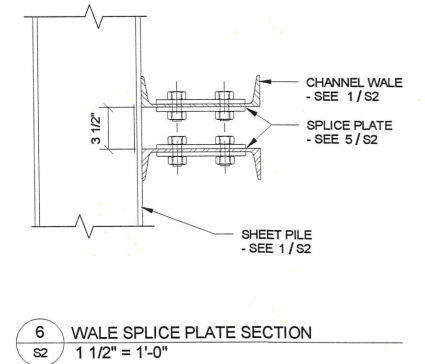
3 SHEET PILE ENLARGED PLAN
S2 3/8" = 1'-0"



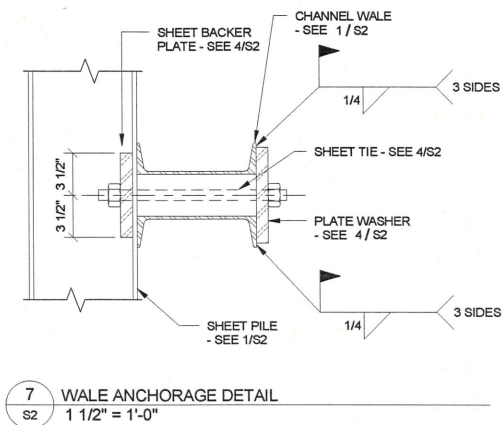
4 SHEET PILE WALL DETAIL
S2 3/4" = 1'-0"



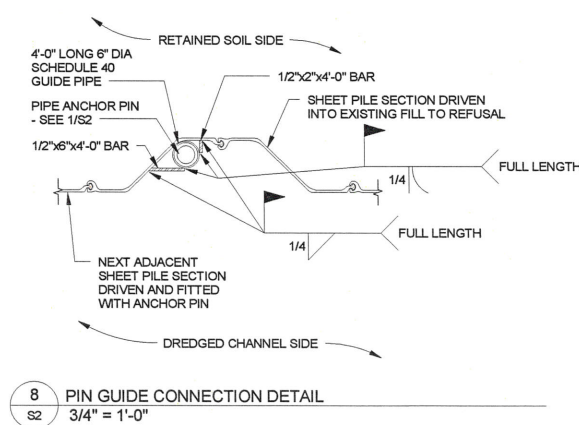
5 WALE SPLICE PLATE
S2 1 1/2" = 1'-0"



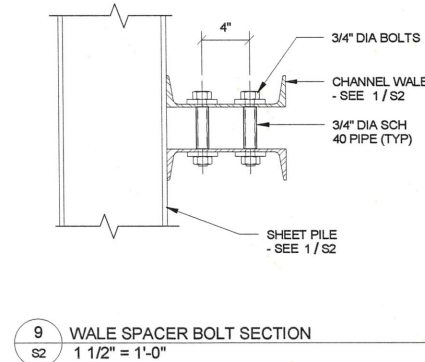
6 WALE SPLICE PLATE SECTION
S2 1 1/2" = 1'-0"



7 WALE ANCHORAGE DETAIL
S2 1 1/2" = 1'-0"



8 PIN GUIDE CONNECTION DETAIL
S2 3/4" = 1'-0"



9 WALE SPACER BOLT SECTION
S2 1 1/2" = 1'-0"



Page has been reduced, not to scale.
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Addendum No. 2
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