



Department of Public Works  
**Engineering Division**  
James M. Wolfe, P.E., City Engineer  
City-County Building, Room 115  
210 Martin Luther King, Jr. Boulevard  
Madison, Wisconsin 53703  
Phone: (608) 266-4751  
Fax: (608) 264-9275  
[engineering@cityofmadison.com](mailto:engineering@cityofmadison.com)  
[www.cityofmadison.com/engineering](http://www.cityofmadison.com/engineering)

**Assistant City Engineer**  
Bryan Cooper, AIA  
Gregory T. Fries, P.E.  
Chris Petykowski, P.E.  
**Deputy Division Manager**  
Kathleen M. Cryan  
**Principal Engineer 2**  
John S. Fahrney, P.E.  
Janet Schmidt, P.E.  
**Principal Engineer 1**  
Mark D. Moder, P.E.  
Andrew J. Zwieg, P.E.  
**Financial Manager**  
Steven B. Danner-Rivers

7/10/2023

**NOTICE OF ADDENDUM  
ADDENDUM 3**

**CONTRACT NO. 8876  
WEXFORD POND DREDGING**

Revise and amend the contract document(s) for the above project as stated in this addendum, otherwise, the original document shall remain in effect.

**PLANS**

- **REPLACE: Sheet 16 with revised Sheet 16.**
- **REPLACE: Sheet 17 with revised Sheet 17.**

**ATTACHMENT B: SOIL BORINGS AND GEOTECHNICAL ANALYSIS**

- **REPLACE: Sediment Core Logs with New Sediment Core Logs changing soil properties column heading to tsf (tons per square foot) showing compressive strength of the clay.**

**SECTION D: SPECIAL PROVISIONS**

- **REPLACE: BID ITEM 20101 – EXCAVATION CUT with the following:**

**BID ITEM 20101-EXCAVATION CUT**

**DESCRIPTION**

Work under this item shall include all labor, equipment, materials, and incidentals necessary to excavate to the grades as represented by the contours on the plan set, as shown on the cross sections, or as defined in these Special Provisions. Excavation cut shall be in accordance with Article 201 of the Standard Specifications.

Excavation cut and fill quantities were calculated using the difference of the existing and proposed surfaces of the digital terrain models (modified to include necessary undercut). The finished proposed surface model used in the calculations includes the additional excavation required for excavation six (6) inches of topsoil for grading work outside of the permanent wet pool, placing four (4) inches of topsoil, existing surface used was the top of the existing conditions surface. No expansion or shrinkage factors have been or will be applied to the

earthwork quantities. Three-dimensional CAD files containing the digital terrain models used for the earthwork calculations are available.

The following Excavation Cut activities and amount shall be paid at the “Plan Quantity” without measurement thereof:

- Clay Liner and Over-Excavation: 7,026 CY(includes a mixture of existing clay and native material below existing clay liner)
- Topsoil Stripping: 322 CY (includes topsoil stripping related to construction of the proposed vegetated access, retaining wall, and storm sewer piping and structures)
- Vegetated Access: 214 CY
- Riprap Excavation: 26 CY
- Retaining Wall: 154 CY
- Forebay Excavation to Finished Pond Bottom: 3,607 CY (over excavation for clay liner included above)

Total: 11,349 CY

No changes to the above shall be approved unless there are modifications to the plan design or significantly differing conditions encountered at the site. No expansion or shrinkage factors have been applied to the earthwork quantities. Quantities for clay liner excavation were calculated based on typical design depth, and were not measured. It is anticipated that actual clay line depths and quantities may vary. The Contractor shall not receive any increase in payment beyond the plan quantity included in the proposal page for removal of clay liner.

Suitable materials (to be determined by the Engineer) may be reused as fill within the project limits. Placement of these fill materials shall be considered incidental to this bid item and shall not be compensated separately. All double handling and subsoil placement is included in this bid item.

Excess material generated during pond construction shall hauled off-site and disposed of by the Contractor at a site provided by the Contractor at no additional charge to the City of Madison.

Contractor to note all excavated areas shall be filled at the end of each work day. No excavated areas shall be “open” during non-work hours.

Contractor to note the following bid items shall be paid separately:

- Topsoil placing/furnishing, segregation, temporary stockpiling, and redistribution over disturbed areas, shall be paid under Bid Item 20221 – TOPSOIL. It is estimated that 322 cubic yards of topsoil shall be made available through excavation cut.
- Sediment removal to design depths shall be paid under Bid Item 90008 - DREDGE, HAUL, AND DISPOSE OF SEDIMENT.
- Additional sediment removal based on field conditions shall be paid under Bid Item 90009 – AUTHORIZED SEDIMENT REMOVAL.
- Placement of clay liner shall be paid under Bid Item 90003 – CLAY LINER PROVISION AND PLACEMENT.
- Any excavation cut related to the construction of the Temporary Access Road including temporary grading, retaining wall removal and reconstruction, topsoil stripping, and repair of facilities with the Temporary Construction Access Easement shall be incidental to BID ITEM – 90006 TEMPORARY ACCESS ROAD.

All other Excavation Cut shall be considered incidental to this contract.

EXCAVATION CUT above 11,349 CY shall only be paid for excavation cut related removal of aggregate base in order to repair damaged asphalt within the temporary construction easement at High Point Church. The proposal page includes 380 CY of addition EXCAVATION CUT related to repair of these facilities for bidding purposes. These quantities may be eliminated, increased or decreased.

### **Temporary Stockpiles**

Any and all on-site stockpiles the Contractor deems necessary shall be enclosed with a silt sock provided at no additional cost. No material is permitted to be stockpiled in the partially constructed pond. The Contractor shall not store Excavation Cut on site, with the exception of topsoil that is planned to be reused, for periods longer than 48 hours. The Contractor shall be mindful of predicted weather events and remove cut material accordingly.

See the Attachment B for site soil boring information.

### **METHOD OF MEASUREMENT**

Excavation Cut within the limits shown in the plan set, or as defined in these Special Provisions, shall be paid based on the “Plan Quantity” without measurement thereof, except as identified above for excavation cut for pavement and aggregate base course excavation within the temporary easement. No changes to this quantity shall be approved unless there are modifications to the plan design No expansion or shrinkage factors have been applied to the earthwork quantities. Quantities for clay liner excavation were calculated based on typical design depth, and were not measured. It is anticipated that actual clay liner depths and quantities may vary. The Contractor shall not receive any increase in payment beyond the plan quantity included in the proposal page for removal of clay liner.

Excavation Cut related to repair of repair/replacement of pavement and base course within the temporary access easement at High Point Church as described above shall be measured based in the field and determined by the Construction Engineer.

### **BASIS OF PAYMENT**

Excavation Cut shall be paid at the “Plan Quantity” contract unit price for all excavation cut, except as defined above for pavement and aggregate base course excavation within the temporary easement. This shall include full compensation for all labor, materials, equipment, and incidentals necessary to complete this item of work.

- **REPLACE: BID ITEM 90003 – CLAY LINER PROVISION AND PLACEMENT with the following:**

### **BID ITEM 90003 - CLAY LINER PROVISION AND PLACEMENT**

#### **DESCRIPTION**

Work under this item includes all materials, work/labor necessary equipment and incidentals required to provide material and install a 2-foot clay liner (finish depth) below the permanent pool as identified on the plans, typical sections, and as identified in these Special Provisions. Excavation of the in-situ soil to accommodate the clay liner placement is paid under BID ITEM 20101 – EXCAVATION CUT.

The quantity listed above represents fully compacted material, with a thickness of 2 feet. If the Contractor elects to place more than 2 feet of clay for ease of placement, it shall not be

compensated. Further, if additional depth is placed the finish grade for top of clay shall not be modified from the plan grade. As a result any additional clay depth shall be done on the bottom of the clay layer and shall not result in any additional compensation in Bid Item 20101—Excavation Cut.

This bid item includes construction of the clay underwater berm separating forebays from the main pool as shown in the plans and drawings. The underwater berm liner compaction shall be 95% (ASTMD698) similar to clay liners.

## **SUBMITTALS AND APPROVALS**

The Contractor is responsible submitting the following documents, and/or for receiving approval for the following items. Failure to do so may result in forfeiture of payment for this bid item.

Submittals:

- a. Test results for proposed clay liner material, to include Atterberg limits, grain size distribution, and proctor tests.
- b. In-Situ Material Substitution Plan, if applicable.

Approvals:

- a. Material: written approval from the Project Engineer or Construction engineer for use of the proposed material.
- b. In-Situ Material Substitution Plan: written approval from the Project Engineer or Construction Engineer to substitute in-situ clay with placed clay liner.
- c. Foundation Preparation: verbal approval from the Project Engineer or Construction Engineer prior to placement of the first lift of clay.
- d. Final Acceptance: written approval from the Project Engineer or Construction Engineer accepting placement of the liner. This will only be granted after all field testing has been reviewed and approved.

## **MATERIALS**

Soils used in clay liner construction shall not contain sod, brush, roots, frozen soil, or other perishable materials. Rock particles larger than 3 inches shall be removed prior to compaction of the clay.

The Contractor shall not be allowed to re-use existing clay soils for the Type A Clay liner.

All areas that fall within native clays, per DNR criteria below, with a suitable thickness do not need to receive additional clay liner, but must be set at finish grade.

Clay liner shall be per Wisconsin DNR Type A Clay liner requirements below. Type B or synthetic HDPE or GCL liners shall under no circumstance be allowed.

The City's geotechnical consultant shall verify that soils meet the requirements below prior to installing clay liner.

The material used shall meet the following specifications:

Wisconsin DNR Type A Clay liner criteria is as follows:

- a. 50% fines (200 sieve) or more.
- b. An in-place hydraulic conductivity of  $1 \times 10^{-7}$  cm./sec. or less.
- c. Average liquid limit value of 25 or greater, with no value less than 20.
- d. Average PI of 12 or more with no values less than 10.

- e. Clay compaction and documentation as specified in NRCS Wisconsin Construction Specification 300, Clay Liners
- f. Minimum thickness of two feet.

If the Contractor determines to place new clay liner during winter months the clay shall be kept in an unfrozen condition prior to placement and moisture adjustment shall be completed prior to bringing the borrow to the site for placement. It is possible to place and compact clay on frozen ground, however the clay being placed shall be unfrozen and at a suitable moisture content to allow compaction.

The Contractor shall maintain dewatering activities until all sediment dredging and clay liner construction is completed.

## **CONSTRUCTION**

### **FOUNDATION PREPARATION**

Foundation surfaces shall be graded to remove surface irregularities and shall be scarified or otherwise acceptably scored or loosened to a minimum depth of 2 inches. The moisture content of the loosened material shall be controlled as specified for the clay liner, and the surface materials shall be compacted and bonded with the first layer of the clay liner as specified for subsequent layers of clay liner.

There are existing base flows within the ponds. It is anticipated that dewatering below pond draw down may be necessary. The Contractor shall be required to obtain all permitting and approvals for dewatering including dewatering that creates well points. This shall be incidental to this bid item.

### **PLACEMENT**

The clay liner shall not be placed until the required foundation preparation has been completed and the foundation has been inspected and approved by the Construction Engineer. The clay liner shall not be placed upon snow, ice, and no frozen material shall be incorporated in the clay liner.

The clay liner shall be placed in lifts. The thickness of each lift before compaction shall not exceed the length of the teeth of the footed compactor used.

The distribution of materials throughout the clay liner shall be essentially uniform, and the clay liner shall be free from lenses, pockets, streaks, or layers of material differing substantially in texture, moisture content, or gradation from the surrounding material.

If the surface of any layer becomes too hard and smooth for proper bond with the succeeding layer, it shall be scarified to a depth of not less than two (2) inches before the next layer is placed.

### **CONTROL OF MOISTURE CONTENT**

During placement and compaction of the clay liner, the moisture content of the clay being placed shall be maintained above optimum moisture as determined by the Standard Proctor Test (ASTM D-698) or Modified Proctor Test (ASTM D-1557).

The application of water to the clay shall be accomplished at the borrow areas insofar as practicable. Water may be applied by sprinkling the clay after placement and before compaction of the liner, if necessary. Uniform moisture distribution shall be obtained by disking.

If the moisture conditions described herein cannot be achieved, the Contractor shall work with the soils testing consultant to assure the placement meets the intent of the specification.

#### COMPACTION

The clay liner shall be compacted to a minimum of 95% of standard proctor dry density (ASTM D-698) or to a minimum of 90% of modified proctor dry density (ASTM D-1557), at a moisture content above optimum moisture.

The clay liner shall be compacted with a non-vibratory footed compactor weighing at least 25,000 pounds, operated continuously, in uncompacted lift thicknesses not to exceed the smaller of six (6) inches or the length of the teeth on the footed compactor used. Alternate compaction of equipment shall be approved by the Project Engineer and soil testing consultant prior to use on site.

Compaction of Clay shall be per NRCS Wisconsin Construction Specification 204 "Soil Liners". Which requires one pass over the entire surface of fill per lift by specific methods. Smooth rollers are not suitable for compaction of fine-grained liners.

#### REWORKING OR REMOVAL AND REPLACEMENT OF DEFECTIVE CLAY LINER

Clay placed at densities lower than the specified minimum density or at moisture contents lower than optimum moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the specifications or removed and replaced by acceptable clay. The replacement clay and the foundation and fill surfaces upon which it is placed shall conform to all requirements of this specification for foundation preparation, approval, placement, moisture control, and compaction.

Warranty of the liner will be determined by the capacity of the pond to maintain a consistent water level. Failure of the pond to maintain a consistent water level within the warranty period will result in the Contractor repairing or replacing the liner as needed.

The Contractor shall maintain dewatering activities until the pond construction is completed.

#### TESTING AND DOCUMENTATION REQUIREMENTS

Prior to placement of any material, the Contractor shall submit testing results showing the proposed material is appropriate for use in a clay liner. This includes a minimum of one of each of the following: Standard Proctor or Modified Proctor, grain size distribution, and Atterberg Limits. These tests shall be completed at the expense of the Contractor.

Field and laboratory soil tests shall be completed on the clay liner, by a third party engineering firm retained by the City, to document compliance with this specification. Testing shall be completed as the liner is being placed. The Contractor shall accommodate access and scheduling of this work, including potential delays if a representative is not immediately available. The following tests shall be completed at the specified frequency.

Liner construction shall be tested and documented as specified below. Copies of the documentation report, including test locations and test results, shall be provided to Construction Engineer.

Standard Proctor test:

ASTM D-698 - 1 per 500 cubic yards of clay liner or

Modified Proctor Test

ASTM D-1557 - 1 per 500 cubic yards of clay liner

#### Field Density Tests

ASTM D-2922, D-2167, D-1556, or D-2937 - 1 test per 100 square foot of clay liner

#### Atterberg Limit tests

ASTM D-4318 - 1 per 500 cubic yards of clay liner

#### Grain Size Distribution

ASTM D-422 - 1 per 500 cubic yards of clay liner

#### Permeability

ASTM D-5084 - 1 per 500 cubic yards of clay liner

Atterberg limits, grain size distribution, and permeability tests shall be completed on undisturbed samples obtained from the constructed clay liner. A minimum of one of each of the laboratory tests specified above shall be completed per clay liner. The Contractor shall prepare test locations at the direction of the soil testing consultant.

All test holes shall be backfilled using powdered bentonite mixed with clay soil used in liner construction and compacted by hand tamping. The clay shall be broken down into clods less than ½ inch in diameter. A minimum of 25% of the backfilled test hole volume shall be occupied by powdered bentonite after backfilling.

### **METHOD OF MEASUREMENT**

Clay Liner Provision and Placement shall be measured by the Cubic Yard based on plan quantity, without measurement thereof. The quantity listed on the Proposal Page was calculated using the proposed digital terrain models for bottom of pond surface and bottom of two (2) foot clay layer in the forebay areas. The limits of the clay liner can be found in the typical section drawn and plan.

### **BASIS OF PAYMENT**

Clay Liner Provision and Placement shall be measured as defined above and paid at the contract unit price, which shall be full payment for all work as laid out in the description.

- **REPLACE: BID ITEM 90008 – DREDGE, HAUL, AND DISPOSE OF SEDIMENT**  
**Sediment with the following:**

#### **DESCRIPTION**

Work under this bid item shall include all labor, materials, equipment and incidentals necessary to excavate, remove, haul, and dispose of sediment as shown on the drawings after the site had been dewatered. Sealed water-tight trucks shall be used to transport all sediment to a location provided by the Contractor.

At least one month prior to construction, the Contractor shall submit a Methods and Equipment Plan per Section 109.5 Methods and Equipment. The Contractor shall note that this shall include detailed information regarding plans for dredging, hauling and disposing of sediment.

The Contractor shall take into consideration uplift of the existing liner from water pressure to prevent damage to the clay liner during construction.

The Contractor shall be responsible for any damage to the existing clay liner. The Contractor shall be required to repair any damaged areas from the clay liner to their original condition including but not limited to dewatering the site to repair damaged clay liner, removing existing damaged clay liner, importing new clay liner, regrading portions of clay bottom to original conditions to the Engineer's satisfaction.

Proper erosion control and restoration/stabilization shall be provided at the disposal site. No material may be disposed of in a wetland or floodplain.

Sediment sampling and analysis has been completed and analytical results indicate existing sediment from the Wexford Pond does not require landfill disposal. The sediment sampling report with analytical results is provided as an attachment to these specifications. Results are included in Attachment A. Additionally, the Contractor shall note that low-contact pressure equipment shall be required.

The Contractor is responsible for accounting for uplift of the existing liner after dewatering.

Mobilization for excavating sediment shall be included in bid item Mobilization. Mobilization at dewatering and disposal site, shall be incidental to bid item Mobilization. Disposal of all materials shall be to a site determined by the Contractor, and shall be disposed of at no additional fees to the City. No additional compensation shall be provided for mobilization or de-mobilization.

Contractor shall select and identify a fill site, offsite reuse location, or land application site that will be used for disposal of dredged materials and shall provide this information to the City of Madison no later than 15 calendar days prior to commencement of dredging activities or at the preconstruction conference, whichever comes first. Contractor shall be responsible for obtaining all necessary approvals from the WDNR, including [Accumulated Sediment End Use Certification Form 4400-248](#), and from all appropriate landowners if dredged materials will be disposed of or reused at fill site, other reuse location, or at a land application site. The city will assist with appropriate sections of Form 4400-248.

The disposal site at a minimum shall meet the following NR 528.04(2) Performance Standards:

(1) No person may use or dispose of accumulated sediment at a site if there is a reasonable probability that the sediment end use will cause any of the following:

1. A significant adverse impact on wetlands as defined in ch. NR 103.
2. A take of an endangered or threatened species prohibited by s. 29.604, Stats.
3. A detrimental effect on any surface water.
4. A detrimental effect on groundwater that will cause or exacerbate an exceedance of any preventive action limit or enforcement standards at a point of standards application as defined in ch. NR 140. The point of standards application is defined by s. NR 140.22(1).

See the Permits sections for additional requirements related to the disposal site.

- Total Estimated Sediment Dredging 4,439 C.Y.

## **METHOD OF MEASUREMENT**

Dredge, Haul, and Dispose of Sediment shall be measured by the Cubic Yard based on "Plan Quantity" without measurement thereof. No changes to this quantity will be



approved unless there are modifications to the design. The Contractor is required to review the data used to determine sediment depths prior to bidding.

### **BASIS OF PAYMENT**

Dredge, Haul, and Dispose of Sediment shall be paid at the contract price for work as defined above, which shall be considered full compensation for work, materials, labor and incidentals necessary to complete the work. 50% of payment shall be withheld until the bottom of pond survey is submitted per BID ITEM 90005 – CONSTRUCTION SURVEYING verifying that plan depths were met.

### **QUESTION AND ANSWER**

Q. We were wondering if either a Type B clay or a synthetic liner can be substituted?

A. No, Type A Clay Liner is required. No other liner shall be allowed or approved.

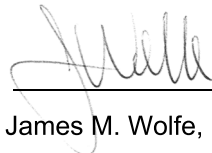
Please acknowledge this addendum on page E1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on the Bid Express website at:

<http://www.bidexpress.com>

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at 608-266-4751 receive the material by another route.

Sincerely,



---

James M. Wolfe, P.E., City Engineer

JMW:scl