

SECTION 011025 - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes descriptions of and methods for measuring and paying for each Contract Item.
- B. Related Requirements:
 - 1. Section 012900 "Payment Procedures" for administrative and procedural requirements necessary to prepare and process Applications for Payment

1.2 PROCEDURES

- A. For lump sum items, Contractor shall be paid in accordance with the progress schedule and schedule of values on the basis of actual work accepted until the work item is completed. Upon completion of the item, 100% of the lump sum price may be paid, less retained amounts.
- B. All units of measurement shall be standard United States convention as applied to the individual items of Work as specified and as interpreted by Engineer.
- C. At the end of Work each week, Contractor shall provide Engineer with a summary of quantities of lump sum price work accomplished and/or completed during the preceding week.
- D. Once each month, Contractor will prepare and sign an Application for Payment and submit for review and signature of Engineer as specified in Section 012900 "Payment Procedures." These completed forms will provide the basis upon which payment will be made to Contractor.

1.3 SCOPE OF PAYMENT

- A. Payments to Contractor will be made for the Agreement lump sum price items performed and accepted in accordance with the Contract Documents. Upon completion of Work, if actual quantities show either an increase or decrease from estimated quantities, the Agreement lump sum prices will still prevail, except as provided in the General Conditions, Supplementary Conditions or Special Conditions.
- B. No payment of any Application for Payment or of any retained percentage shall relieve Contractor of the obligation to repair or replace any defective parts of the Work or to be responsible for all damage due to such defects during the construction period or the one-year warranty period.

1.4 PARTIAL PAYMENTS

- A. Partial payments shall be made monthly as the Work progresses. All partial invoices and payments shall be subject to correction in the final Application for Payment.

1.5 PAYMENT FOR MATERIAL DELIVERED

- A. When requested by Contractor, and at the discretion of Engineer, payment may be made for all or part of the value of acceptable, non-perishable materials and equipment which are to be incorporated into the Work, which have not been used and which have been delivered to the construction site and placed in storage area acceptable to Engineer. The Application for Payment shall be accompanied by such data, satisfactory to Engineer, that will establish Owner's title to the material and equipment and protect Owner's interest therein, including insurance. Each

subsequent Application for Payment shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied to discharge in full all of Contractor's obligations reflected in prior Applications for Payment. Owner shall have the right to deduct from the next progress payment an amount equal to payment for said material and/or equipment if reasonable and adequate proof is not submitted.

- B. Materials and equipment, when so paid for by Owner, shall become the property of Owner and in the event of default on the part of Contractor, Owner may use, or cause to be used, these materials and equipment in the construction of the Work. Contractor shall be responsible for any damage to, or loss of, these materials and equipment. The amount paid by Owner shall reduce the estimated amounts due to Contractor as the material is incorporated into the Work.
- C. No partial payment shall be made for fuels, supplies, lumber, false work, or other expendable or temporary materials, or on temporary structures of any kind which are not a permanent part of the Agreement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL

- A. The items of Work required by the General Conditions, Supplementary Conditions, and Division 1 - General Requirements shall not be measured and paid separately, except as expressly indicated therein, but shall be included in the prices bid for each Contract Item.
- B. The payment for various Contract Items listed below shall include all materials, labor, tools, equipment and incidental work necessary to complete the item in accordance with the Drawings and Specifications whether or not the particular Work is mentioned in the following paragraphs.
- C. Estimated quantities provided in the sections below are for informational purposes only. All items are to be bid and paid as lump sum prices. No additional amount will be paid for any discrepancies in estimated and actual quantities.
- D. For unit price items of Work, quantities will be determined by the Contractor measured within the limits shown on the drawings and subject to the acceptance by and approval of the Engineer and Owner's Representative.

3.2 MOBILIZATION/DEMOBILIZATION (CONTRACT ITEM 1A & 1B)

- A. Measurement:
 - 1. Mobilization/Demobilization shall be measured lump sum. The lump sum price for mobilization shall not exceed 10% of the total or remaining base bid items plus any add alternate items included in the Agreement.
- B. Description:
 - 1. Mobilization/Demobilization shall consist of preparatory work and operations including, but not limited to, those necessary for the movement of personnel, equipment (cleaned and free of soil and plant material prior to delivery to the site), supplies, and incidentals to the Project site; for the establishment of Contractor's field office, and other facilities necessary for work on the Project and final site cleanout; documentation of Work including a record

survey; and for all other work and operations which must be performed prior to beginning and prior to closing out the Work.

2. Demobilization includes development of record drawings signed and sealed by a Professional Licensed Surveyor (PLS) licensed in Massachusetts. Digital copies of the record drawings shall be provided in PDF and CAD (Civil3D 2020 or more recent) format. Record drawings shall include 2-foot contours derived from post-construction bathymetric and topographic survey data within the project limits.

C. Payment:

1. Payment will be made at the contract item lump sum price, which price shall be full compensation for all costs incurred in furnishing all labor, tools, materials, equipment and incidentals for the preparatory work and operations associated with this contract item.
2. Payments for Mobilization/Demobilization will be made for up to 60% of the contract item lump sum price with the first Application for Payment following completion of at least 5% of the total Contract Price, 35% of the contract item lump sum price upon Substantial Completion, and the remaining 5% upon Final Completion.

3.3 SITE PREPARATION (CONTRACT ITEMS 2A & 2B)

A. Measurement:

1. Site Preparation shall be measured lump sum.

B. Description:

1. Site Preparation shall consist of site preparation work including, but not limited to, installation, daily maintenance, and removal of all temporary soil erosion, sedimentation, and pollution control measures; installation of high-visibility protective fencing along all access, staging, dewatering, and work areas; installation of stabilized construction entrances; clearing of the work area as necessary to install access routes; and all associated work. Typical items include:
 - a. Roadway flaggers (as needed; MassDOT 850.41)
 - b. Removal and resetting of chain link fence (MassDOT 666)
 - c. Sedimentation controls (compost filter socks or approved equal; MassDOT 761.121)
 - d. Straw bales (for containment of sediment dredge stockpiles)
 - e. High-visibility protective temporary fence
 - f. Clearing of vegetation (removal or dispersal of trees already felled by others); tree cutting outside of TOY or with USFWS approval; no grubbing; MassDOT 102)
 - g. Woven geotextile fabric (for temporary access/staging areas; MassDOT 698.3, 9.50.0)
 - h. Gravel borrow (for temporary access/staging areas; MassDOT 151, M1.03.0(b))
 - i. Crushed stone (for stabilized construction entrances; MassDOT 156, M2.01.3)
 - j. Dense-graded crushed stone (for former mill intake fill; MassDOT 402, M2.01.7)
 - k. Swamp mats (for access, as necessary)
 - l. Oil containment boom

C. Payment:

1. Payment will be made at the contract item lump sum price, which price shall be full compensation for all costs incurred in furnishing all labor, tools, materials, equipment and incidentals for the Work and operations associated with this contract item.

2. Payment will be made for up to 85% of the contract item lump sum price upon completion of installation, 10% of the contract item lump sum price upon Substantial Completion, and the remaining 5% upon Final Completion.

3.4 WATER CONTROL (CONTRACT ITEMS 3A & 3B)

A. Measurement:

1. Water Control shall be measured lump sum.

B. Description:

1. Water Control shall consist of care and control of water including, but not limited to, design, furnishing, installation, and removal of cofferdams and gravity bypass pipe(s), initial pumping and dewatering of work area, maintaining existing flows and safely passing fish through the project site, and all associated Work. Typical items may include:
 - a. Cofferdams (bulk sandbags or approved equal)
 - b. Bypass pipe(s) (to divert flow between cofferdams)
 - c. Dewatering pump system (for initial and maintenance dewatering, as needed)
 - d. Sediment filter bag(s) (for sediment control during dewatering)

C. Payment:

1. Payment will be made at the contract item lump sum price, which price shall be full compensation for all costs incurred in furnishing all labor, tools, materials, equipment and incidentals for the Work and operations associated with this contract item.
2. Payment will be made for up to 60% of the contract item lump sum price upon completion of installation of the water diversion system, 35% upon removal of the water diversion system, and the remaining 5% of the contract item lump sum price upon Substantial Completion.

3.5 DEMOLITION AND EXCAVATION (CONTRACT ITEMS 4A & 4B)

A. Measurement:

1. Demolition and Excavation shall be measured lump sum.

B. Description:

1. Demolition and Excavation shall consist of, but not be limited to, demolition and removal the Larkin Dam and all appurtenant structures (i.e., abutments/retaining walls, fish weir, former mill intake) and the USGS gage weir and right stone abutment, as well as associated earth excavation required to facilitate the work. (Note that per Addendum 1 dated 6/29/2025, the base bid scope no longer includes demolition of the fishway; rather, filling of the fishway in place is included under Item 2A above, and removal of the fishway is included under Add-Alternate Item 11A.) Materials to be demolished and removed may include, but not be limited to, concrete, stone masonry, and soil. Sediment dredging will be covered under Contract Items 5A, 5B-1, and 5B-2. Typical items include:
 - a. Earth excavation (MassDOT 120)
 - b. Concrete and/or reinforced concrete excavation (MassDOT 127 and/or 127.1)
 - c. Removal and salvage of stone masonry for onsite reuse or stockpiling for Owner
2. This contract item includes demolition/removal of the following structures:

- a. Contract Item 4A:
 - 1) 38-foot-long, 5-foot-high concrete and stone spillway
 - 2) 35-foot-long, 2- to 3-foot-high stone “fish weir” that spans the channel 30 feet downstream of the spillway
 - 3) 65-foot-long concrete-faced stone left abutment wall
 - 4) 127-foot-long concrete right abutment wall
 - 5) Concrete former mill intake and metal trashrack (including earth excavation)
 - a) Portions of the concrete former mill intake below existing grade may be sawcut and buried in place at Contractor’s discretion.
 - b. Contract Item 4B:
 - 1) 18-foot-wide, 2-foot-high, concrete weir and upstream concrete pad at gage
 - 2) Right stone abutment at gage
 3. Demolished materials shall be hauled off-site for lawful reuse, disposal, or recycling. Stones from masonry structures may be reused onsite as deemed appropriate by Engineer or stockpiled onsite for Owner.
- C. Payment:
1. Payment will be made at the contract item lump sum price, which price shall be full compensation for all costs incurred in furnishing all labor, tools, materials, equipment and incidentals for the Work and operations associated with this contract item.
 2. Payment will be made as a percentage of the overall contract item complete at the time of submittal of Contractor’s application for payment as judged by Engineer.
- 3.6 SEDIMENT DREDGING AND HANDLING (CONTRACT ITEMS 5A, 5B-1, & 5B-2)
- A. Measurement:
1. Sediment Dredging and Handling shall be measured per cubic yard.
- B. Description:
1. Sediment Dredging and Handling shall consist of dredging and onsite handling/placement of sediment. Typical items include:
 - a. Dredging and onsite handling/stockpiling/loading of sediment
 - b. Onsite placement of sediment (placement options may include: passive downstream release, instream repositioning, shoreline placement, and/or upland placement in designated sediment dewatering areas or potentially other areas upon approval by Owner)
 2. The following dredging quantities are included in the base bid:
 - a. Approximately 250 CY from the area including Larkin Dam, immediate upstream impoundment, and downstream fish weir and low-flow channel (Contract Item 5A)
 - b. Approximately 340 CY from the USGS gage weir area and downstream low-flow channel (Contract Item 5B-1)
 - c. Approximately 700 CY from the I-95 bridge area (Contract Item 5B-2)

3. Sediment sampling results are provided in **Appendix D**. The sediment testing results were provided previously in Project Manual Appendix D. The results of the chemical analysis were compared to MassDEP's Interim Policy for Sampling, Analysis, Handling, and Tracking Requirements for Dredged Sediment Reuse and Disposal (COMM-94-007). All of the results were either non-detect or below the Reportable Concentration (RC) S-1 criteria of the Massachusetts Contingency Plan (MCP). The 401 WQC issued by MassDEP indicates that the sediment may be released downstream, repositioned instream, and/or reused onsite without further testing or approval. Any areas proposed for onsite reuse must be approved by the Owner and Engineer.

C. Payment:

1. Payment will be made at the contract item cubic yard price up to the volume specified for the base bid contract item. The contract item price shall be full compensation for all costs incurred in furnishing all labor, tools, materials, equipment and incidentals for the Work and operations associated with this contract item.
2. Additional sediment dredging in excess of the volume assumed for the base bid as described in the contract items listed above will be paid under Add-Alternate Items 8A and 8B for Additional Sediment Dredging and Handling (if required). Additional costs for offsite transportation and disposal of sediment, if required, will be paid under Add-Alternate Items 9A-1, 2, or 3 and 9B-1, 2, 3.

3.7 CHANNEL STABILIZATION (CONTRACT ITEMS 6B-1 & 6B-2)

A. Measurement:

1. Channel Stabilization shall be measured lump sum.

B. Description:

1. Channel Stabilization shall consist of the installation of channel protections at the USGS gage and I-95 bridge sites, including rounded riprap and geotextile and stone filter materials. Typical items include:
 - a. Class V rounded riprap ($D_{50} = 18''$)
 - b. Non-woven geotextile fabric (MassDOT 698, 9.50.0)
 - c. Dense-graded crushed stone (granular filter; MassDOT 402, M2.01.7)
 - d. Fines for infilling rounded riprap ($D_{50} = \text{No. 4 Sieve } (0.187'')$)

C. Payment:

1. Payment will be made at the contract item lump sum price, which price shall be full compensation for all costs incurred in furnishing all labor, tools, materials, equipment and incidentals for the Work and operations associated with this contract item.
2. Payment will be made as a percentage of the overall contract item complete at the time of submittal of Contractor's application for payment as judged by Engineer.

3.8 SITE RESTORATION (CONTRACT ITEMS 7A & 7B)

A. Measurement:

1. Site Restoration shall be measured lump sum.

B. Description:

1. Site restoration shall consist of restoring and seeding all disturbed areas once work is complete. Typical items include:
 - a. Native seed mix (MassDOT 765)
 - b. Loam, if needed (MassDOT 751)
 - c. Straw mulch, if needed (MassDOT 767.31)

C. Payment:

1. Payment will be made at the contract item lump sum price, which price shall be full compensation for all costs incurred in furnishing all labor, tools, materials, equipment and incidentals for the Work and operations associated with this contract item.
2. Payment will be made as a percentage of the overall Contract Item 6 complete at the time of submittal of Contractor's application for payment as judged by Engineer.

3.9 ADDITIONAL SEDIMENT DREDGING AND HANDLING (ADD-ALTERNATE ITEMS 8A & 8B)

A. Measurement:

1. Additional Sediment Dredging and Handling shall be measured per cubic yard.

B. Description:

1. Additional Sediment Dredging and Handling shall consist of dredging and onsite handling/placement of sediment in excess of the base bid volumes specified under Contract Items 5A, 5B-1, and 5B-2 above. See Section 3.6 above for additional description of the work. Typical items include:
 - a. Dredging and onsite handling/stockpiling/loading of sediment
 - b. Onsite placement of sediment (placement options may include: passive downstream release, instream repositioning, shoreline placement, and/or upland placement in designated sediment dewatering areas or potentially other areas upon approval by Owner)

C. Payment:

1. Payment will be made at the add-alternate item cubic yard price. The contract item price shall be full compensation for all costs incurred in furnishing all labor, tools, materials, equipment and incidentals for the Work and operations associated with this contract item.
2. Additional costs for offsite transportation and disposal of sediment, if required, will be paid under Add-Alternate Items 9A-1, 2, or 3 and 9B-1, 2, or 3.

3.10 SEDIMENT TRANSPORTATION AND DISPOSAL (ADD-ALTERNATE ITEMS 9A-1, 2, 3 & 9B-1, 2, 3)

A. Measurement:

1. Sediment Transportation and Disposal shall be measured per ton.

B. Description:

1. Sediment Transportation and Disposal shall consist of any additional costs that may be required for dewatering, amendments (if required), transportation, and offsite disposal of any sediment that cannot be managed onsite. This cost is in addition to the base cost for

dredging and handling of sediment specified under Contract Items 5A, 5B-1, and 5B-2 or Add-Alternate Items 8A and 8B above.

2. Disposal options include the following Add-Alternate Items:
 - a. 9A-1/9B-1: Sediment Transportation & Disposal (< RCS-1 Facility)
 - b. 9A-2/9B -2: Sediment Transportation & Disposal (In-State Landfill) (lined or unlined)
 - c. 9A-3/9B -3: Sediment Transportation & Disposal (Out-of-State Landfill)
3. Typical items may include, but are not limited to, the following:
 - a. Dewatering and preparation of sediment for transportation, including amendments, if required, to ensure that the material has no free liquid as determined by the Paint Filter Test or other suitably analogous methodology acceptable to MassDEP
 - b. Licensed Site Professional services, if required (MassDOT 180.03)
 - c. Sediment testing by independent lab as required by the offsite disposal facility proposed by the Contractor
 - d. Transportation of sediment to selected disposal facility
 - e. Disposal of regulated soil (in-state, MassDOT 181.12; or out of state, MassDOT 181.13)
4. The Contractor shall be responsible for any testing required for offsite disposal at their selected waste facility. If the Contractor wishes to reuse or dispose of the sediment offsite somewhere other than a landfill, required testing shall be conducted by the Contractor in consultation with DEP to inform and approve disposal options. Testing of sediment shall only be conducted as required for offsite disposal or offsite reuse.

C. Payment:

1. Payment will be made at the contract item price per ton, which price shall be full compensation for all costs incurred in furnishing all labor, tools, materials, equipment and incidentals for the Work and operations associated with this contract item.
2. Payment for sediment dredging and onsite handling/loading will be paid under Contract Items 5A, 5B-1, and 5B-2 or Add-Alternate Items 8A and 8B.

3.11 ROCK EXCAVATION (ADD-ALTERNATE ITEMS 10A & 10B)

A. Measurement:

1. Rock Excavation shall be measured per cubic yard.

B. Description:

1. Rock Excavation shall consist of bedrock/ledge removal for adaptive management for fish passage and/or for installation of riprap channel stabilization as directed in the field by Engineer and/or DMF. Typical items include:
 - a. Ledge, Removed from Dredged Area and Disposed (MassDOT 148.24)

C. Payment:

1. Payment will be made at the contract item cubic yard price, which price shall be full compensation for all costs incurred in furnishing all labor, tools, materials, equipment and incidentals for the Work and operations associated with this contract item.

- 3.12 DEMOLITION/DISPOSAL OF FISHWAY & ADDITIONAL FILLING OF FISHWAY EXCAVATION (ADD-ALTERNATE ITEM 11A)
- A. Measurement:
1. Demolition/Disposal of Fishway & Additional Filling of Fishway Excavation shall be measured lump sum.
- B. Description:
1. Per Addendum 1 dated 6/29/2025, the base bid scope no longer includes demolition of the fishway; rather, filling of the fishway in place with gravel borrow is included under Item 2A. This Add-Alternate item includes the additional work that would be required to fully remove the 140-foot-long concrete and masonry fishway, including earth over-excavation, as well as the additional gravel borrow required to fill the fishway excavation as shown in the design plans.
- C. Payment:
1. Payment will be made at the contract item lump sum price, which price shall be full compensation for all costs incurred in furnishing all labor, tools, materials, equipment and incidentals for the Work and operations associated with this contract item.
 2. Payment will be made as a percentage of the overall Add-Alternate Item 11A complete at the time of submittal of Contractor's application for payment as judged by Engineer.

END OF SECTION 011025