

# CONTRACT DOCUMENTS

Pare Project No. 18255.01

## Lake Maspenock Dam Left Downstream Wall Repair Re-Bid Milford, MA

Prepared for:



TOWN OF HOPKINTON

Prepared by:

Pare Corporation 10  
Lincoln Road, Suite 210  
Foxboro, MA 02135

JULY 2024



THIS PROJECT IS FUNDED BY  
THE EXECUTIVE OFFICE OF ENERGY  
AND ENVIRONMENTAL AFFAIRS



**TECHNICAL SPECIFICATIONS INDEX  
LAKE MASPENOCK DAM  
LEFT DOWNSTREAM WALL REPAIR RE-BID  
MILFORD, MASSACHUSETTS**

**Division # Description**

**Division # Description**

**Division 0 – Contract**

00020 Invitation to Bid  
00100 Instructions to Bidders  
00310 Bid Form  
00410 Bid Bond  
00500 Agreement  
00610 Performance Bond  
00615 Payment Bond  
00700 General Conditions  
00800 Supplementary Conditions  
00850 Wage Rates  
00950 Drawing Index

**Division 1 – General**

01000 Summary of Work  
01019 Contract Considerations  
01025 Measurement and Payment  
01070 Abbreviations, Symbols, and Definitions  
01200 Project Meetings  
01340 Submittals  
01400 Quality Control/Quality Assurance  
01500 Temporary Construction Facilities  
01510 Temporary Utilities  
01560 Temporary Controls  
01600 Material and Equipment  
01700 Contract Closeout  
01720 Project Record Documents

**Division 2 - Site Work**

02005 Mobilization and Demobilization  
02050 Demolition and Removal  
02110 Clearing, Grubbing, and Stripping  
02200 Earthwork  
02270 Erosion and Sediment Control  
02300 Riprap  
02400 Dewatering, Diversion, Control of Water  
02621 Polyvinyl Chloride (PVC) Toe Drain  
02710 Hot Mix Asphalt Paving  
02900 Landscaping  
02930 Trees, Shrubs, and Groundcover

**Division 3 – Concrete**

03100 Concrete Formwork  
03200 Reinforcing Steel  
03256 Waterstops  
03300 Cast-In-Place Concrete  
03600 Grout

**Appendix A: Permits**

1. Orders of Condition
2. Chapter 253 Permit

Lake Maspenock Dam  
Left Downstream Wall Repair Re-Bid  
Milford, MA

**DIVISION 0 - CONTRACT**

18255.01  
07/24

**SECTION 00020  
INVITATION TO BID**

**LAKE MASPENOCK DAM  
LEFT DOWNSTREAM WALL REPAIR RE-BID  
MILFORD, MASSACHUSETTS**

Sealed bids for the Lake Maspenock Dam Left Downstream Wall Repair Re-Bid will be received until Wednesday, July 31, 2024 at the Town of Hopkinton, Town Hall, Accounting Office, 18 Main Street, Hopkinton, MA 01748 until 10:00 a.m. local time, at which time the bids will be publicly opened and read.

The work on Lake Maspenock Dam Left Downstream Wall Repair Re-Bid includes:

1. Mobilize to the site. Establish access and staging areas including, but not limited to, clearing of wetlands/uplands/forest and installing temporary access road
2. Install erosion and sediment control devices as required
3. Remove the existing left downstream wall; dispose of concrete; store stones for reuse
4. Remove and stockpile embankment fill
5. Construct cast-in-place reinforced concrete wall
6. Backfill the wall in compacted 12-inch loose lifts
7. Install asphalt on top of the embankment crest
8. Install infilled scour protection in front of the retaining wall; place hydric soil top course.
9. Clean and restore site including restoring wetlands, plantings, and lawns, and removing all materials from the access road except a gravel pathway which shall remain.

MARK ENVELOPE: BID FOR Lake Maspenock Dam Left Downstream Wall Repair Re-Bid.

Bid Security: Certified, treasurer's, cashiers or company check or bid bond in the sum of five (5) percent of the Total Bid is required.

Bid documents, including drawings, will be available on Thursday, July 17, 2024 and can be found on the Town of Hopkinton website, via the Procurement section at <https://www.hopkintonma.gov/departments/procurement.php> If you have problems attaining bid documents, please call the Town of Hopkinton Procurement Office at (508) 497-9705 x1107. Bidders will not be registered and, therefore, will be responsible for checking the Town's website often for addenda.

Hard copies of the plans and specifications will not be available for this project.

A Pre-Bid Conference will be held on-site on Wednesday, July 24, 2024 at 10:00 a.m. to review the project. The meeting location for the Pre-Bid Conference is at the trailhead across from 29 Pine Island Road in Milford, MA. There is a "Caution Children at Play" sign at the location of the trailhead. Parking is available along Pine Island Road and Tina Road. There will be a discussion at the trailhead followed by an opportunity to walk the marked future access road through the woods to the back side of the dam. Those interested can access the top of the dam from Crockett Road at their convenience, Access through 32 Pine Island Road is not available.

The successful bidder must furnish 100% Performance Bond and a Labor and Materials Bond. The estimated value of this contract is \$500,000.

No bidder may withdraw their Bid for a period of ninety (90) days excluding Saturdays, Sundays, and legal holidays after the date of the opening of the Bids. The successful bidder must commence work within ninety (90) days of receiving a written Notice to Proceed. Work relating to the removal of the wall, installation of the proposed wall and reestablishment of the embankment below El. 348.0 shall not start prior to the initial winter drawdown, October 2024, and shall be completed prior to March 2025 to allow for typical re-impoundment activities by the Owner. If the work, as specified above, is not complete within the time frame, for each day after March 1, 2025, the contractor shall be assessed \$500 per day for liquidated damages. In addition, the successful bidder must fully complete the work within 365 days of the Notice to Proceed. If the work is not complete within the time frame,

**18255.01**  
**07/24**

**SECTION 00020**  
**INVITATION TO BID**

for each day after 365 days, the contractor shall be assessed \$850 per day for liquidated damages. Full drawdown depth is expected to be reached by the end of December 2024.

Complete instructions for filing Bids are included in Section 00100 Instructions to Bidders.

The Owner reserves the right to waive any informality in or to reject any or all Bids if deemed to be in its best interest. Owner may conduct investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of the Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents. The Owner reserves the right to complete post-bid opening interviews to support their evaluation of the bids.

**- Town of Hopkinton**

**SECTION 00100  
INSTRUCTIONS TO BIDDERS**

PART 1.00 – GENERAL

1.01 SECURING DOCUMENTS

- A. Bid documents, including drawings, can be found on the Town of Hopkinton website, via the Procurement section at <https://www.hopkintonma.gov/departments/procurement.php>. If you have problems attaining bid documents, please call the Town of Hopkinton Procurement Office at (508) 497-9705x1107. Bidders will not be registered and, therefore, will be responsible for checking the Town's website often for addenda.
- B. No hard copy documents or drawings are available for this project.

1.02 BID FORMS

- A. In order to receive consideration, the bidder shall make all bids in strict accordance with the following:
  - 1. The bidder shall make all bids upon the forms provided therefore, properly executed and all items filled out. The bidder shall not change the wording of the Bid Form and shall not add words to the wording of the Bid Form. Unauthorized conditions, limitations, or provisions shall be cause for rejection of the proposal. Alterations by erasure or interlineation may be explained or noted in the bid over the signature of the bidder. Only hard-copy bids will be accepted.
  - 2. A bidder may correct, modify, or withdraw a bid by written notice received at the office of the Town of Hopkinton up to 1 hour prior to the time and date set for the bid opening. After the bid opening, a bidder may not change the price or any other provision of the bid in a manner prejudicial to the interests of the Town of Hopkinton or fair competition.
  - 3. No bids received after the time fixed for receiving them shall be considered. Late bids will be returned to the sender unopened.
  - 4. Each bid shall be addressed to the Town of Hopkinton and shall be delivered to the address given in SECTION 00020 INVITATION TO BID on or before the date and hour set for opening bids. Each bid shall be enclosed in a sealed envelope bearing the title of the specifications, the name of the bidder, and the date and hour of the bid opening. It is the sole responsibility of the bidder to see that the bid is received on time. Only hard copies of the bids will be accepted.

1.03 NOTIFICATION OF CORPORATE VOTE

- A. Where the bidder is a corporation, the bidder must include with the bid form a letter indicating the corporate vote authorizing the person who signs the bid to do so.
- B. The successful bidder shall provide a similar letter to the Owner at the time the contract documents are being prepared.

1.04 EVALUATION CRITERIA

- A. In order for a bidder to be considered a responsible and responsive bidder, it must provide with its bid the following information:
  - 1. Demonstrated and referenced experience on:
    - a. Three concrete retaining wall projects of similar scope/size in the last five (5) years
    - b. Three dam projects of similar size in the last five (5) years.

18255.01  
07/24

**SECTION 00100**  
**INSTRUCTIONS TO BIDDERS**

2. Cost breakdown which will be used to determine the monetary obligation of the Owner to the Contractor(s) awarded the Contract(s).
  3. Completion of the anti-collusion and anti-fraudulent certification.
  4. Notification of corporate vote when the bid submitted is \$20,000 or more. This is to ensure that the person signing the bid is recognized by the Bidder's company to do so.
  5. Certificate of compliance with tax laws.
  6. A bid bond in the amount of 5% of the total bid price.
- B. Bids shall be evaluated and the bid which represents the best value for the Town of Hopkinton shall be selected.

1.05 AWARDING THE BID ITEMS

- A. The Bid Form is comprised of separate bid items to be awarded in accordance to these contract specifications.

1.06 BASIS OF THE BID

A. Lump Sum

1. Bidders shall submit a Bid on a lump sum basis as set forth in the Bid form.

B. Unit Price

1. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
2. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding Bid Item "Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes.
3. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.
4. Unit prices for identical item numbers that are in more than one bid schedule shall be equal. Discrepancies will be resolved in favor of the lowest unit price.

1.07 LENGTH OF CONTRACT

- A. Delivery of all contract items is to commence within twenty (20) days of receiving a written Notice of Intent to Award.
- B. Work is to be sufficiently complete to allow for re-impoundment to normal pool elevation by March 1, 2025.
- C. Work is to be substantially completed within 245 days of receipt of a Notice to Proceed. Substantial completion is herein defined as all work items aside from planting and seeding.
- D. Work shall be complete within 365 days of receipt of a Notice to Proceed

18255.01  
07/24

**SECTION 00100**  
**INSTRUCTIONS TO BIDDERS**

1.08 REQUESTS FOR INFORMATION

- A. Requests for information regarding this Bid shall be submitted in writing and addressed to the Engineer, Pare Corporation, 10 Lincoln Road, Suite 210, Foxboro, MA 02035 (Telephone Number: 508-543-1755).
- B. The deadline for Requests for Information is six (6) days before the bid due date, with all addenda issued at least two (2) days before the bid due date, including weekends and Holidays.

1.09 INFORMATION NOT GUARANTEED

- A. All information given on the drawings or in the other Contract Documents relating to subsurface and other conditions, natural phenomena, existing utilities and other structures is from the best resources at present available to the Owner. All such information is furnished only for the information and convenience of bidders and is not guaranteed.
- B. It is agreed and understood that the Owner does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes, or other structures encountered during construction will be the same as those indicated on the drawings or in the other Contract Documents.
- C. It is agreed further and understood that no bidder or contractor shall use or be entitled to use any of the information made available to him or obtained in any examination made by him in any manner as a basis of or ground for any claims or demand against the Owner or the Engineer, arising from or by reason of any variance which may exist between the information made available and the actual subsurface or other conditions, natural phenomena, existing utilities or other structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

1.10 BIDDERS TO INVESTIGATE

- A. Bidders must satisfy themselves by personal examination of the site of the Work and by such other means as they may wish, as to the actual conditions there existing, the character and requirements of the Work, the difficulties attendant upon its execution, and the accuracy of all estimated quantities stated in the Bid.

1.11 REDUCTION IN THE SCOPE OF WORK

- A. The Owner reserves the right to decrease the scope of the work to be done under this Contract and to omit any work in order to bring the cost within available funds. To this end, the Owner reserves the right to reduce the quantity of any items or omit all of any items as set forth in the BID, either prior to executing the Contract or at any time during the progress of the work. The Owner further reserves the right, at any time during the progress of work, to restore all or part of any items previously omitted or reduced. Exercise by the Owner of the above rights shall not constitute any ground or basis of claim for damages or for anticipated profits on the work omitted.

1.12 MASSACHUSETTS SALES AND USE TAX

- A. Materials and equipment purchased for permanent installation in this project will be exempt from the



**18255.01**  
**07/24**

**SECTION 00100**  
**INSTRUCTIONS TO BIDDERS**

Massachusetts Sales and Use Tax. The exemption certificate number will be furnished to the Contractor. Each bidder shall take this exemption into account in calculating his bid for the work.

1.13 INSURANCE CERTIFICATES

- A. The Contractor will not be permitted to start any construction work until approved certificates covering all insurances called for under Supplementary Condition 6.00 of Section 00800 have been submitted.

1.14 MINIMUM WAGE RATES

- A. Minimum Wage Rates as determined by the Commissioner of Department of Labor and Industries under the provision of the Massachusetts General Laws, Chapter 149, Sections 26 to 27D, as amended, apply to this project. It is the responsibility of the Contractor, before bid opening, to request if necessary, any additional information on Minimum Wage Rates for those trades people who may be employed for the proposed work under this contract.

1.15 RETURN OF BID BONDS TO UNSUCCESSFUL BIDDERS

- A. Bid bonds for all unsuccessful bidders will be returned.

PART 2.00 – PRODUCTS

Not Used

PART 3.00 – EXECUTION

Not Used

END OF SECTION

18255.01  
07/24

SECTION 00310  
BID FORM

TO: Town of Hopkinton  
Town Hall, Accounting Office  
18 Main Street  
Hopkinton, Massachusetts 01748

PROJECT: Lake Maspenock Dam Left Downstream Wall Repair-Rebid  
Milford/Upton, Massachusetts  
Pare Project No. 18255.01

DATE: \_\_\_\_\_

SUBMITTED BY:

\_\_\_\_\_  
(full name)

\_\_\_\_\_  
(full address)

1. OFFER:

Having examined the Place of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by Pare Corporation, Engineer for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work, **Lake Maspenock Dam Left Downstream Wall Repair Re-Bid**, for the Price of:

A. Total Base Bid Price: \$.....

TOTAL BASE BID PRICE IN WORDS.....  
in lawful money of the United States of America.

We have included herewith, the unit price bid forms, and the required security deposit or Bid Bond as required by the Instruction to Bidders.

18255.01  
07/24

SECTION 00310  
BID FORM

NOTE: THE TOTAL BID ITEM PRICE FOR EACH BID ITEM MUST BE WRITTEN IN WORDS AND FIGURES. IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS WILL GOVERN.

BID ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL BID ITEM PRICE
1.	Contract Bonds	LS	1	_____	_____

TOTAL BID ITEM PRICE IN WORDS:

\_\_\_\_\_

2.	General Requirements	LS	1	_____	_____
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TOTAL BID ITEM PRICE IN WORDS:

\_\_\_\_\_

3A.	Mobilization & Demobilization	LS	1	_____	_____
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TOTAL BID ITEM PRICE IN WORDS:

\_\_\_\_\_

3B.	Site Access	LS	1	_____	_____
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TOTAL BID ITEM PRICE IN WORDS:

\_\_\_\_\_

4A.	Erosion and Sediment Control	LS	1	_____	_____
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TOTAL BID ITEM PRICE IN WORDS:

\_\_\_\_\_

4B.	Clearing of Vegetation and Stripping Hydric Soil for Staging	LS	1	_____	_____
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TOTAL BID ITEM PRICE IN WORDS:

\_\_\_\_\_

CARRY FORWARD \_\_\_\_\_

18255.01  
07/24

SECTION 00310  
BID FORM

NOTE: THE TOTAL BID ITEM PRICE FOR EACH BID ITEM MUST BE WRITTEN IN WORDS AND FIGURES. IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS WILL GOVERN.

CARRIED FORWARD \_\_\_\_\_

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BID ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL BID ITEM PRICE
5.	Demolish Stone Masonry Wall And Removal of Embankment Fill	LS	1	_____	_____

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TOTAL BID ITEM PRICE IN WORDS:

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6A.	Installation of Concrete Retaining Wall - Formwork and Reinforcement	LS	1	_____	_____
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TOTAL BID ITEM PRICE IN WORDS:

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6B.	Installation of Concrete Retaining Wall - Concrete	LS	1	_____	_____
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TOTAL BID ITEM PRICE IN WORDS:

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6C.	Backfilling of Earthen Embankment	LS	1	_____	_____
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TOTAL BID ITEM PRICE IN WORDS:

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6D.	Import Supplemental Fill	CY	50	_____	_____
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TOTAL BID ITEM PRICE IN WORDS:

CARRY FORWARD \_\_\_\_\_

18255.01  
07/24

SECTION 00310  
BID FORM

NOTE: THE TOTAL BID ITEM PRICE FOR EACH BID ITEM MUST BE WRITTEN IN WORDS AND FIGURES. IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS WILL GOVERN.

CARRIED FORWARD \_\_\_\_\_

-----  
BID ITEM DESCRIPTION UNIT QUANTITY UNIT PRICE TOTAL BID ITEM PRICE  
-----

7A. Installation of Embankment Drain LS 1 \_\_\_\_\_

TOTAL BID ITEM PRICE IN WORDS:  
\_\_\_\_\_  
-----

7B. Bituminous Pavement SY 156 \_\_\_\_\_

TOTAL BID ITEM PRICE IN WORDS:  
\_\_\_\_\_  
-----

8A. Install Downstream Scour Apron LS 1 \_\_\_\_\_

TOTAL BID ITEM PRICE IN WORDS:  
\_\_\_\_\_  
-----

8B. Imported Armor Stone TON 65 \_\_\_\_\_

TOTAL BID ITEM PRICE IN WORDS:  
\_\_\_\_\_  
-----

8C. Imported Bedding Stone TON 20 \_\_\_\_\_

TOTAL BID ITEM PRICE IN WORDS:  
\_\_\_\_\_  
-----

9A. Lawn Restoration CY 60 \_\_\_\_\_

TOTAL BID ITEM PRICE IN WORDS:  
\_\_\_\_\_  
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CARRY FORWARD \_\_\_\_\_

18255.01  
07/24

SECTION 00310  
BID FORM

NOTE: THE TOTAL BID ITEM PRICE FOR EACH BID ITEM MUST BE WRITTEN IN WORDS AND FIGURES. IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS WILL GOVERN.

CARRIED FORWARD \_\_\_\_\_

BID ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL BID ITEM PRICE
9A.	Lawn Restoration	CY	60	_____	_____

TOTAL BID ITEM PRICE IN WORDS:

\_\_\_\_\_

9B.	Import Hydric Soil	CY	75	_____	_____
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TOTAL BID ITEM PRICE IN WORDS:

\_\_\_\_\_

9C.	Wetland/Upland Restoration	LS	1	_____	_____
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TOTAL BID ITEM PRICE IN WORDS:

\_\_\_\_\_

TOTAL BASE BID PRICE \_\_\_\_\_

TOTAL BID ITEM PRICE IN WORDS:

\_\_\_\_\_

**18255.01**  
**07/24**

**SECTION 00310**  
**BID FORM**

3.00 ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for thirty (30) days, excluding Saturdays, Sundays, and legal holidays, from the Bid closing date.

If this Bid is accepted by the Owner within the time period stated above, we will:

Execute the Agreement within twenty (20) days (including Saturdays, Sundays, and legal holidays) of receipt of Notice of Intent to Award.

Furnish the required Performance Bond and Labor and Material Payment Bond within twenty (20) days (including Saturdays, Sundays, and legal holidays) of receipt of Notice of Intent to Award.

Commence work within ninety (90) days (including Saturdays, Sundays, and legal holidays) of receiving a written Notice to Proceed.

If this Bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to the Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this Bid and the Bid upon which the Contract is signed.

In the event our Bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

4.00 CONTRACT TIME

If this Bid is accepted, the BIDDER hereby agrees to commence WORK under this Contract on or before a date to be specified in the NOTICE TO PROCEED, to complete the work relating to the removal of the wall, installation of the proposed wall and reestablishment of the embankment below El. 348.0 prior to March 1, 2025, and to fully complete the work in 365 calendar days.

5.00 ADDENDA

The following Addenda have been received. The modifications to the Contract Documents noted therein have been considered and all costs thereto are included in the Bid Price.

Addendum # \_\_\_\_\_ Dated

Addendum # \_\_\_\_\_ Dated

Addendum # \_\_\_\_\_ Dated

**18255.01**  
**07/24**

**SECTION 00310**  
**BID FORM**

6.00 BID FORM SIGNATURE(S)

The Corporate Seal of

.

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(Bidder - please print the full name of your Proprietorship, Partnership, or Corporation)

was hereunto affixed in the presence of:

---

(Authorized signing officer                      Title)

(Seal)

.

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(Authorized signing officer                      Title)

If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.



18255.01  
07/24

**SECTION 00310  
BID FORM**

7.00 REFERENCES FOR SIMILAR PROJECTS

Include a narrative description of project scope, contact with current telephone number, and project value for at least three (3), but no more than ten (10), similar gate and control of water projects completed in the last five (5) years. Reference projects shall include work that demonstrates the bidder's capacity to complete activities specific to this project. Provide attachments if required. Attach additional sheets and photographs to demonstrate the nature of the referenced project.

#	Project Name	Contact Name	Contact Phone Number	Project Value	Date Completed
<b>Example Concrete Retaining Wall (3 required)</b>					
1					
<u>Description</u>					
2					
<u>Description</u>					
3					
<u>Description</u>					
<b>Example Dam Project of similar size (3 required)</b>					
1					
<u>Description</u>					
2					
<u>Description</u>					
3					
<u>Description</u>					

18255.01  
07/24

SECTION 00310  
BID FORM

**NON-COLLUSION AFFIDAVIT OF PRIME BIDDER**

State of \_\_\_\_\_ )  
 ) .ss  
County of \_\_\_\_\_ )

\_\_\_\_\_,  
being first duly sworn, deposes and says that;

(1) He is \_\_\_\_\_ (owner, partner, officer, representative or agent) \_\_\_\_\_ of \_\_\_\_\_, the BIDDER that has submitted the attached bid;

(2) He is fully informed respecting the preparation and contents of the attached Bid and all pertinent circumstances respecting such Bid;

(3) Such Bid is genuine and is not a collusive or sham Bid;

(4) Neither the said BIDDER nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including the affiant, has in any way colluded, conspired or agreed, directly or indirectly, with any other BIDDER, firm or person to submit a collusive or sham bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such a contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other BIDDER, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other BIDDER, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Local Government or any person interested in the proposed Contract; and

(5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the BIDDER or any of its agents, representatives, owners, employees or parties in interest including this affiant.

(Signed) \_\_\_\_\_  
\_\_\_\_\_  
(Title)

Subscribed and sworn to before me  
This \_\_\_\_\_ Day of \_\_\_\_\_, 20\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

My Commission Expires \_\_\_\_\_

18255.01  
07/24

**SECTION 00310  
BID FORM**

**ANTI FRAUDULENT DOCUMENTATION OF PRIME BIDDER**

(1) Attach documentation from the Secretary of the Commonwealth of Massachusetts stating that there are no pending proceedings under the Massachusetts General Laws Chapter 156D section 14.21 for the Bidder's dissolution, no articles of dissolution have been filed by the BIDDER, the BIDDER has filed all annual reports, the BIDDER has paid all fees with respect to such reports, and the BIDDER has legal existence and is in good standing with the Secretary of the Commonwealth of Massachusetts.

18255.01  
07/24

SECTION 00310  
BID FORM

**TAX COMPLIANCE AFFIDAVIT OF PRIME BIDDER**

I, \_\_\_\_\_ of \_\_\_\_\_, certify  
under  
*(principal)* *(corporation)*  
pains and penalties of perjury that said corporation has complied with all the laws of the Commonwealth of  
Massachusetts relating to taxes and is in compliance with its tax obligations payable under M.G.L. c. 62C.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Federal Tax Identification Number

Any singular reference to Bidder, Surety, Owner, or other party shall be considered plural where applicable.

BIDDER (*Name and Address*):

SURETY (*Name and Address of Principal Place of Business*):

OWNER (*Name and Address*):

**BID**

Bid Due Date:  
Description (*Project Name and Include Location*):

**BOND**

Bond Number:  
Date (Not earlier than Bid due date):  
Penal sum \_\_\_\_\_

(Words)

\$

\_\_\_\_\_ (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

**BIDDER**

**SURETY**

\_\_\_\_\_  
Bidder's Name and Corporate Seal (Seal)

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature (Attach Power of Attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

*Note: Above addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint venturers, if necessary.*

SECTION 00410  
BID BOND

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder any difference between the total amount of Bidder's Bid and the total amount of the Bid of the next lowest, responsible Bidder who submitted a responsive Bid as determined by Owner for the work required by the Contract Documents, provided that:
  - 1.1 If there is no such next Bidder, and Owner does not abandon the Project, then Bidder and Surety shall pay to Owner the penal sum set forth on the face of this Bond, and
  - 1.2 In no event shall Bidder's and Surety's obligation hereunder exceed the penal sum set forth on the face of this Bond.
  - 1.3 Recovery under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
  - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
  - 3.2 All Bids are rejected by Owner, or
  - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

00410-2

STANDARD FORM OF AGREEMENT

**SAMPLE**

**TOWN OF HOPKINTON STANDARD CONSTRUCTION CONTRACT  
AGREEMENT**

THIS AGREEMENT, made this \_\_\_th day of March 2024 by and between the party of the first part, the Town of Hopkinton, Massachusetts hereinafter called "OWNER" or "AWARDING AUTHORITY", acting herein through its Town Manager, and the party of the second part, \_\_\_\_\_, doing business as a corporation located in the CITY/TOWN of \_\_\_\_\_, County of \_\_\_\_\_, State of Massachusetts, hereinafter called the "CONTRACTOR"

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete the project described as follows:

"Insert project Name/Language here"

hereinafter called the "PROJECT" for the sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_)

The Contract Sum includes incorporation into the Contract of Alternate(s) N/A as described in Section \_\_\_\_\_, ALTERNATES of the Specifications and all extra work in connection therewith, under the terms as stated in the Contract Documents; and at his (its or their) own proper cost and expense to furnish all the materials, supplies, machinery equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the bid specifications and Contract Documents as prepared by the OWNER all of which are attached hereto and incorporated by reference herein in their entirety.

The undersigned CONTRACTOR agrees to commence work on the Contract on or before April 16, 2024 and to thereafter diligently and continuously carry out the work in such manner as to fully complete all the different elements of the work by June 30, 2024.

The CONTRACTOR further agrees to pay as liquidated damages the sum of Five Hundred \$500.00 Dollars for each calendar day thereafter as provided in the Liquidated Damages, paragraph \_\_\_\_\_ of Document 00800 GENERAL CONDITIONS (and all Addenda) attached hereto, and incorporated by reference herein in its entirety.

The CONTRACTOR agrees not to discriminate against or exclude any person from participation herein on grounds of race, religion, color, sex, age or national origin; and that it shall take affirmative actions to insure that applicants are employed, and that employees are

treated during their employment, without regard to race, religion, color, sex, age, handicapped status, or national origin.

The CONTRACTOR agrees not to participate in or cooperate with an international boycott, as defined in Section 999 (b)(3) and (4) of the Internal Revenue Code of 1954, as amended, or engage in conduct declared to be unlawful by Section 2 of Chapter 151E of the Commonwealth of Massachusetts General Laws.

Pursuant to M.G.L. c. 62(c), §49 (a), the individual signing this Agreement on behalf of the CONTRACTOR hereby certifies, under the penalties of perjury, that to the best of his or her knowledge and belief the CONTRACTOR has complied with any and all applicable state and federal tax laws. The individual signing this Agreement on behalf of the CONTRACTOR further certifies under penalties of perjury that the Contractor is not presently debarred from doing public construction work in the Commonwealth under the provisions of M.G.L. c. 29, § 29F, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder and is not presently debarred from doing public construction work by any agency of the United States Government.

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the contract, subject to additions and deductions, as provided in Document 00800, GENERAL CONDITIONS, and to make payments on account thereof as provided therein.

IN WITNESS WHEREOF, the parties to these presents have executed this contract in two (2) counterparts, each of which shall be deemed an original, on the year and day first above mentioned.

AGREED:

OWNER: TOWN OF HOPKINTON, MASSACHUSETTS

By: \_\_\_\_\_  
Elaine Lazarus, Interim Town Manager

By: \_\_\_\_\_  
Kerry Reed, Director of Public Works

CONTRACTOR: \_\_\_\_\_  
(Name of Company)

By: \_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City and State)



In accordance with M.G.L. c. 44, Section 31C, this is to certify that an appropriation in the amount of this Contract is available therefor and that the \_\_\_\_\_ has been authorized to execute the Contract and approve all requisitions and change orders.

By: \_\_\_\_\_  
Cindy Johnston, Town Accountant

## GENERAL TERMS & CONDITIONS

### 1.0 GENERAL PROVISIONS

#### 1.1 Definitions.

1.1.1 Awarding Authority. Where the term “Awarding Authority” appears in any statutory provision, it shall mean “the Owner.”

1.1.2 Contracting Officer. The term “Contracting Officer” shall mean the town official so designated below, or the individual duly appointed by him for the performance of any of his functions or responsibilities under this Contract. The Work shall be carried out under the direction and subject to the approval and acceptance of the **Town of Hopkinton Select Board**, (hereinafter called the Contracting Officer).

1.2 Scope of the Work. The Work comprises the completed project described in the Contract Documents and includes all labor, professional services, transportation, tools, materials, supplies, equipment, permits, approvals, documents, calculations, submittals, and certificates necessary to develop, perform, construct and complete the project in accordance with all applicable laws, ordinances, and regulations, and in accordance with the Contract Documents.

1.3 Interpretation. The Plans and Specifications and other Contract Documents are to be considered together and are intended to be mutually complementary, so that any work shown on the Plans though not specified in the Specifications, and any work specified in the Specifications though not shown on the Plans, is part of the Work to be performed by the Contractor.

1.4 Written Authorization. Actions taken, and approvals and decisions made by the Owner under this Contract require the prior approval and signature of the Contracting Officer. These include, but are not limited to, the following: changes in the Contract Price, time for completion, or any other provision of this Contract; written orders, notices, and approvals given by the Contracting Officer pursuant to the Contract Documents or pursuant to any laws applicable to this Contract, including approval of “or equal” submissions; issuance of stop work orders; approval of Contractor’s applications for payment; and termination of the Contract. Work undertaken by the Contractor not authorized by the Contracting Officer’s signature prior to the start of such work shall be considered unauthorized work and shall not entitle the Contractor to any extra payment. The Contractor shall perform, at its own expense, corrective measures required by the Owner due to any failure to obtain prior approval for any item of work.

**1.5 Contractor's General Duties.** The Contractor shall perform the Work in a competent manner in accordance with the Contract Documents and all applicable laws. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures, and coordination of all portions of the Work under this Contract. The Contractor shall provide and perform for the Contract Price all of the duties and obligations set forth in the Contract Documents. Except as otherwise specified in this Contract, it is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable Laws. However, if the Contractor observes that portions of the Contract Documents are at variance with legal requirements, the Contractor shall promptly notify the Owner of that fact in writing. If the Contractor performs Work knowing it to be contrary to legal requirements, the Contractor shall be liable for all damages caused thereby, including the cost of correcting the Work.

**1.6 Sales Tax Exemption and Other Taxes.** To the extent that materials and supplies are used or incorporated in the performance of this Contract, the Contractor is considered an exempt purchaser under the Massachusetts Sales Act, Chapter 14 of the Acts of 1966. The Contractor shall pay all taxes and tariffs of any sort related to the Work, subject to the applicable exemptions.

**1.7 Permits, Fees and Notices.** The Contractor shall secure and pay for all permits and governmental fees, licenses, and inspections necessary for proper execution and completion of the Work. The Contractor shall coordinate all efforts required to obtain these permits unless otherwise directed in writing by the Owner. The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, codes, and lawful orders of public authorities bearing on the performance of the Work.

**1.8 Safety Requirements.** The Contractor shall comply with all Federal, State, and local safety laws and regulations applicable to the Work.

**1.9 Minimum Wage Rates.** The Contractor shall comply with M.G.L. c. 149, §§ 26-27H. The wage schedule found in Exhibit D to the Instructions to Bidders lists the minimum wage rates that must be paid to all workers employed in the Work throughout the term of this Contract, subject to the exceptions provided in M.G.L. c.149, §§ 26-27H. The Owner is not responsible for any errors, omissions, or misprints in the said schedule. The Contractor shall not have any claim for extra compensation from the Owner arising from the fact that the actual wages paid to workers employed in the Work exceed the rates listed on the schedule or as otherwise provided by law. The Contractor shall cause a copy of the schedule to be posted in a conspicuous place at the Site during the term of the Contract. If reserve police officers are employed by the Contractor, they shall be paid the prevailing wage of regular police officers. (See M.G.L c. 149, § 34B).

**1.10 Corporate Disclosures.** The Contractor, if a foreign corporation, shall comply with M.G.L. c. 181, §§ 3 and 5, and M.G.L. c. 30, § 39L.

**1.11 Safety Requirements; OSHA Training [M.G.L. c. 30, s. 39S].** The Contractor shall comply and shall cause all subcontractors and persons employed on the Work to comply with all applicable safety requirements. By executing this contract the Contractor hereby certifies that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that all employees to be employed in the work subject to this bid have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration. Any employee found on a worksite subject to this section without documentation of successful completion of a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration shall be subject to immediate removal.

**1.12 Payroll Records and Statement of Compliance.** The Contractor shall comply and shall cause its subcontractors to comply with Massachusetts General Law c. 149, § 27B, which requires that a true and accurate record be kept of all persons employed on a project for which the prevailing wage rates have been provided. The Contractor and all Subcontractors shall keep these records and preserve them for a period of six years from the date of completion of the Contract. Such records shall be open to inspection by any authorized representative of the Owner at any reasonable time, and as often as may be necessary. The Contractor shall, and shall cause its subcontractors to, submit weekly copies of their weekly payroll records to the Owner. In addition, the Contractor and each Subcontractor shall furnish to the Executive Department of Labor within fifteen days after completion of its portion of the Work a signed statement in the form required by the Owner.

**1.13 Workforce Qualifications.** The Contractor shall: (i) employ competent workers; (ii) enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work; (iii) not permit employment of unfit persons or persons not skilled in tasks assigned to them. Whenever the Contracting Officer shall notify the Contractor in writing that any worker is, in the Contracting Officer's opinion, incompetent, unfaithful, disorderly, or otherwise unsatisfactory, such employee shall be discharged from the Work and shall not again be employed on the Work except with the consent of the Contracting Officer.

**1.14 Non-Discrimination in Hiring and Employment.** By signing this Contract the Contractor hereby certifies under the pains and penalties of perjury that

the Contractor currently complies with and will continue to comply with all federal and state laws, rules and regulations promoting fair employment practices or prohibiting employment discrimination and unfair labor practices and shall not discriminate in the hiring of any applicant for employment nor shall any qualified employee be demoted, discharged or otherwise subject to discrimination in the tenure, position, promotional opportunities, wages, benefits or terms and conditions of their employment because of race, color, national origin, ancestry, age, sex, religion, disability, handicap, sexual orientation or for exercising any rights afforded by law.

**1.15 Veterans Preference.** In the employment of mechanics and apprentices, teamsters, chauffeurs, and laborers in the performance of Work in the Commonwealth, preference shall first be given to citizens of the Commonwealth who have been residents of the Commonwealth for at least six months at the commencement of their employment and who are veterans as defined M.G.L. c. 4, § 7 (34), and who are qualified to perform the work to which the employment relates and, within such preference, preference shall be given to service-disabled veterans; and secondly, to citizens of the Commonwealth generally who have been residents of the Commonwealth for at least six months at the commencement of their employment, and if they cannot be obtained in sufficient numbers, then to citizens of the United States.

**1.16 Weekly or Biweekly wage payments [M.G.L. c. 149, § 148].** The Contractor shall comply with, and shall cause its Subcontractors to comply with M.G.L. c. 149, § 148, which requires the weekly or biweekly payment of employees within six days of the end of the pay period during which wages were earned if employed for five or six days of a calendar week, and within other periods of time under certain circumstances as set forth therein.

**1.17 Labor Harmony [M.G.L. c. 30, s. 39S].** By executing this contract the Contractor hereby certifies that (1) that Contractor is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work. The Contractor shall procure materials from such sources and shall manage its own forces and the forces of its Subcontractors and any sub-subcontractors in such a manner as will result in harmonious labor relations on the site. The Contractor shall cause persons to be employed in the Work who will work in harmony with others so employed. Should the Work be stopped or materially delayed in the Owner's reasonable judgment due to a labor dispute, the Owner shall have the right to require the Contractor to employ substitutes acceptable to the Owner.

**1.18 Risk of Loss.** The Contractor shall bear the risk of loss with respect to any of its or its agents', employees' or subcontractors' vehicles, equipment or tools brought onto or left at the worksite and for any materials stored at the worksite.

**1.19 CORI Checks.** No person shall be given access to the Site without first passing a Criminal Offender Record Information (CORI) check. Contractor shall provide Owner with proof, satisfactory to Owner, that each employee, agent, contractor, subcontractor and invitee (“Contractor Worker(s)”) that visits the site has passed a CORI check. The Contractor shall see to it that no Contractor Worker shall perform any Work at the Site if the Owner has objected to such person being at the site based upon information contained in the CORI check. The Contractor shall not allow any Contractor Worker on the site until the Owner has reviewed such worker’s CORI check and has not objected within ten (10) days after the receipt of the CORI check to such worker being at the site on account of the CORI check, unless the Owner waives such requirement for advance review of a Contractor Worker’s CORI check prior to that worker entering the site (which waiver shall only be effective as to the Contractor Worker(s) that the Contractor requests the Owner to provide such waiver in each instance). Notwithstanding the foregoing, the Contractor shall remain liable for the conduct of its workers, employees, subcontractors, agents and invitees on Site.

## **2.0 MATERIALS AND EQUIPMENT WARRANTY**

Materials and equipment to be installed as part of the Work (both or either of which are hereinafter referred to as “materials”) shall be new, unused, of recent manufacture, assembled, and used in accordance with the best construction practices. The Contractor shall inform itself as to, and shall comply with, the provisions of M.G.L. c. 7, § 23A, as amended.

## **3.0 PROSECUTION OF THE WORK -- LIQUIDATED DAMAGES**

**3.1 Beginning, Progress Schedule.** The Contract time shall commence upon the date specified in the Notice to Proceed executed by the Contracting Officer and delivered to the Contractor after the execution of this Contract. Prior to commencing the Work, the Contractor shall meet with representatives of the Owner to discuss the quality assurance program, safety program, labor provisions, progress schedule, schedule of values, and other Contract procedures. Upon Approval by the Contracting Officer, the progress schedule shall constitute the progress schedule for the Work. Upon approval by the Contracting Officer, the schedule of values shall be the basis for payment for the Work. The Contractor shall at the end of each month, or more often if required, furnish to the Owner a schedule meeting the requirements of the Specifications showing the actual progress of the parts of the Work in comparison with the approved progress schedule.

**3.2 Time for Completion of Work.** Time is of the essence of this Contract. The Work shall be completed within the time specified in Agreement subject only to extensions specifically permitted in accordance with the terms of this Contract.

**3.3 Definition of "Substantial Completion."** For the purposes of this Contract the term "Substantial Completion" shall occur when (1) the Contractor fully completes the Work or substantially completes the Work so that the value of the Work remaining to be done is, in the estimate of the Owner, less than one percent of the original Contract price, or (2) the Contractor substantially completes the work and the Owner takes possession for occupancy, whichever occurs first. For the purposes of the preceding sentences the term "substantially completes" means that the work required by the Contract has been completed except for minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the Work.

**3.4 Failure to Complete Work on Time - Liquidated Damages.** Because both parties recognize (1) that the time for completion of this Contract is of the essence, (2) that the Owner will suffer loss if the work is not completed in accordance with the phasing requirements and within the contract time specified, plus any extensions thereof allowed in accordance with the provisions of this Contract, and (3) that there are significant delays, expense and difficulties associated with a legal proceeding to determine the actual loss suffered by the Owner if the work is not completed on time; therefore, it is agreed that the Contractor will pay the Owner, as liquidated damages, the sum of Five Hundred (\$500.00) per calendar per day for each and every day thereafter that it fails to deliver such Work completed according to the requirements of the Contract Documents. Such liquidated damages shall be paid not as a penalty, but to partially cover losses and expenses to the Owner, including intangible costs and losses that are or may be impracticable to ascertain. Allowing the Contractor to continue to finish the work (or any portion of the work) after the time specified for completion of the Work shall not operate as a waiver on the part of the Owner of any of its rights under the Contract Documents or otherwise under law or equity. The Owner's right to impose liquidated damages shall in no way prohibit or restrict the Owner's right to bring legal action for damages in lieu of its option to impose liquidated damages from money due the Contractor, and if such money is insufficient to cover the liquidated damages, then the Contractor shall pay the amount due.

**3.5 Collection of Liquidated Damages.** The Owner may recover liquidated damages by deducting the amount thereof from any moneys due or that might become due the Contractor, and if such moneys shall be insufficient to cover the liquidated damages, then the Contractor or the Surety shall pay to the Owner the amount due.

**3.6 Owner's Approvals and Interpretations.** Decisions by the Owner regarding interpretation of the specifications, approval of equipment, material or any other approval, or progress of the Work, shall be made promptly and, in any event, no later than thirty days after the Contractor's written submission for decision; but if such decision requires extended investigation and study, the Owner shall, within thirty days after the receipt of the submission, give the Contractor written notice of the

reasons why the decision cannot be made within the thirty day period and the date by which the decision will be made.

**3.7 Extension for Delays Caused by Owner.** The only circumstances under which the Contract Price shall be increased due to delays caused by the Owner are those specified in M.G.L. c. 30, § 390. In all other cases the Contractor shall be entitled neither to increase the Contract Price nor to receive damages on account of any hindrances or delays, avoidable or unavoidable, but if the delay is caused by the Owner, the Contractor shall be entitled to an extension of time to the extent provided in M.G.L. c. 30, §390. The Contractor must submit any claim under this paragraph to the Owner in writing as soon as practicable after the end of the Owner's suspension, delay, interruption or failure to act and, in any event, not later than the date of final payment under this Contract. Except for costs due to a suspension order, the Owner shall not approve any costs in the claim incurred more than 20 days before the Contractor notified the Owner in writing of the act or failure to act or the Owner that gave rise to the claim.

**3.8 Owner's Right to Reject Defective Materials and Work.** Except as otherwise provided herein, the Owner's inspection of the Work shall not relieve the Contractor of any of its responsibilities hereunder, and defective work shall be corrected. The Owner may reject unsuitable work, notwithstanding that such work and materials have been previously accepted for payment. If any part of the Work shall be found defective at any time before the final acceptance of the whole Work, the Contractor shall promptly correct such defect in a manner satisfactory to the Owner. If any material brought upon the site for use in the Work shall be rejected by the Owner as not in conformity with the Contract Documents, the Contractor shall promptly remove such materials from the site.

**3.9 Substantial Completion of the Work; Final Completion; Owner's Remedies.** When the Work has reached the point of Substantial Completion as shown on Approved payment request, the Contractor shall assist the Owner in the development of a punch list identifying those items of unfinished or unacceptable Work that remain to be performed or corrected under the Contract. The Contractor shall complete the lunch list items to final completion within 30 days after the Owner's approval of the punch list. At any time after the value of the Work remaining to be done is, in the estimation of the Owner, less than 1 per cent of the adjusted Contract price, or the Owner has determined that the Contractor has substantially completed the work and the Owner has taken possession for occupancy, the Owner may send to the Contractor by certified mail, return receipt requested, a complete and final list of all incomplete and unsatisfactory work items, including, for each item on the list, a good faith estimate of the fair and reasonable cost of completing such item. The Contractor shall then complete all such work items within 30 days of receipt of such list or before the Contract completion date, whichever is later. If the Contractor fails to complete all incomplete and unsatisfactory work items within 45



days after receipt of such items furnished by the Owner or before the Contract completion date, whichever is later, subsequent to an additional 14 days' written notice to the Contractor by certified mail, return receipt requested, the Owner may terminate this Contract and complete the incomplete and unsatisfactory work items and charge the cost of same to the Contractor and such termination shall be without prejudice to any other rights or remedies the Owner may have under this Contract.

#### **4.0 CHANGES IN THE WORK**

**4.1 Changes within the Scope of the Work.** A change order may be issued by the Owner for changes in the Work within the scope of the Contract, including but not limited to, changes in: (1) the Plans and Specifications; (2) the method or manner of performance of the Work; (3) the Owner-furnished facilities, equipment, materials, services, or Site; or (4) the schedule for performance of the Work. The Contractor shall immediately perform any change order work that is ordered in writing by the Owner.

**4.2. Request for Equitable Adjustment due to Change Order.** Whenever a change order is issued by the Owner that will cause a change in the Contractor's cost or time for performance, the Contractor or the Owner may request an equitable adjustment in the Contract Price or the Contract time. A request for such an adjustment shall be in writing and shall be submitted by the party making such claim to the other party.

**4.3. Latent Conditions.** If, during the progress of the Work, the Contractor or the Owner discovers that the actual subsurface or latent physical conditions encountered at the Site differ substantially or materially from those indicated in the Contract Documents, then either the Contractor or the Owner may request an equitable adjustment in the Contract Price in accordance with M.G.L. c. 30, § 39N. Likewise if the latent or subsurface physical condition causes a change in the time for performing the Work, either the Contractor or the Owner may request an equitable adjustment of the time for the performance of the Work.

**4.4 Computation of Equitable Adjustments.** Equitable adjustments in the Contract Price shall be determined according to one of the following methods, or a combination thereof, as determined by the Owner: (1) fixed price basis, provided that the fixed price shall be inclusive of items described in 4.4.1 below and shall be computed in accordance with that provision; (2) estimated lump sum basis to be adjusted in accordance with Contract unit prices or other agreed upon unit prices provided that the unit prices shall be inclusive of all costs related to such equitable adjustment; (3) time and materials basis to be subsequently adjusted on the basis of actual costs (but subject to a predetermined "not to exceed limit") calculated as follows:

**4.4.1** Where the value of work performed directly by the Contractor under an change order is determined either by a lump sum proposal or by actual cost of work as it progresses, the Contractor will be allowed an additional amount of ten percent (10%) of the total cost of work plus an additional amount of two percent (2%) for the cost of bonds and insurance associated with the added work. Where such work is performed by a Subcontractor, the Contractor will be allowed an additional amount of five percent (5%) to the total payment made to the Subcontractor, plus an additional amount of two percent (2%) for the cost of bonds and insurance associated with the added work. The cost of work shall include the cost at the minimum wage rates established for this contract pursuant to M.G.L. c. 149, §§ 26-27H for direct labor, material and use of equipment, plus the cost of workmen's compensation insurance, liability insurance, federal social security and Massachusetts unemployment compensation. The cost of work may include the cost of added mobilization, engineering, layout, transit staging/scaffolding, lifting, hoisting, dumpster, handling, cleanup, street sweeping, safety protection, temporary weather protection, temporary heat and utilities, shipping/receiving, construction fences, police barricades and signs; provided, however, that such added costs may be included only to the extent that they are directly attributable to the added work and are properly substantiated as determined by the Owner and Architect, in their discretion. Mark-up for overhead, superintendence and profit shall include (and no additional payment shall be made for) general conditions, management, supervision coordination, record drawings, small tools/computers, "tools of the trade", administration, accounting, punch list, O&M manuals, estimator time, schedule updating, and certified payrolls. Contractor and Subcontractor mark-up of such rates for payroll costs associated FUI, SUI, MUI, worker's compensation insurance and other direct payroll costs, shall only be calculated on the direct labor rate as computed above and shall not exceed 30%, except that a higher rate may be allowed for subcontractors only to the extent such higher rate is based on actual payroll costs of the subcontractor for which substantiating documentation of how such higher cost is calculated provided, and no other labor cost mark-ups other than those specified above will be allowed.

**4.5 Timely Decision by the Owner.** In accordance with M.G.L. c. 30, § 39P, "Every contract subject to section thirty-nine M of this chapter or section forty-four A of chapter one hundred forty-nine which requires the awarding authority, any official, its architect or engineer to make a decision on interpretation of the specifications, approval of equipment, material or any other approval, or progress of the work, shall require that the decision be made promptly and, in any event, no later than thirty

days after the written submission for decision; but if such decision requires extended investigation and study, the awarding authority, the official, architect or engineer shall, within thirty days after the receipt of the submission, give the party making the submission written notice of the reasons why the decision cannot be made within the thirty day period and the date by which the decision will be made.”

**4.6 Work Performed Under Protest.** The Contractor must perform any work required by the Owner. If it considers the work to be ‘extra’ and the Owner disagrees, the work must be performed under protest.

## **5.0 PAYMENT PROVISIONS**

**5.1 Applications for Periodic Payments.** Once each month, on a date established at the beginning of the Work, the Contractor shall deliver to the Owner an itemized Application for Payment, supported by such data substantiating the Contractor's right to payment as the Owner may require. The application shall reflect a minimum of 5% retainage and shall be subject to, and processed in accordance with, the provisions of M.G.L. c. 30, §39K, which provides:

“Within fifteen days (30 days in the case of the commonwealth, including local housing authorities) after receipt from the contractor, at the place designated by the awarding authority if such a place is so designated, of a periodic estimate requesting payment of the amount due for the preceding month, the awarding authority will make a periodic payment to the contractor for the work performed during the preceding month and for the materials not incorporated in the work but delivered and suitably stored at the site (or at some location agreed upon in writing) to which the contractor has title or to which a subcontractor has title and has authorized the contractor to transfer title to the awarding authority, upon certification by the contractor that he is the lawful owner and that the materials are free from all encumbrances, but less (1) a retention based on its estimate of the fair value of its claims against the contractor and less (2) a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, and less (3) a retention not exceeding five per cent of the approved amount of the periodic payment. After the receipt of a periodic estimate requesting final payment and within sixty-five days after (a) the contractor fully completes the work or substantially completes the work so that the value of the work remaining to be done is, in the estimate of the awarding authority, less than one per cent of the original contract price, or (b) the contractor substantially completes the work and the awarding authority takes possession for occupancy, whichever occurs first, the awarding authority shall pay the contractor the entire balance due on the contract less (1) a retention based on its estimate of the fair value of its claims against the contractor and of the cost of completing the incomplete and unsatisfactory items of work and less (2) a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, or based

on the record of payments by the contractor to the subcontractors under this contract if such record of payment indicates that the contractor has not paid subcontractors as provided in section thirty-nine F. If the awarding authority fails to make payment as herein provided, there shall be added to each such payment daily interest at the rate of three percentage points above the rediscount rate than charged by the Federal Reserve Bank of Boston commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the contractor; provided, that no interest shall be due, in any event, on the amount due on a periodic estimate for final payment until fifteen days (twenty-four days in the case of the commonwealth) after receipt of such a periodic estimate from the contractor, at the place designated by the awarding authority if such a place is so designated. The contractor agrees to pay to each subcontractor a portion of any such interest paid in accordance with the amount due each subcontractor.

The awarding authority may make changes in any periodic estimate submitted by the contractor and the payment due on said periodic estimate shall be computed in accordance with the changes so made, but such changes or any requirement for a corrected periodic estimate shall not affect the due date for the periodic payment or the date for the commencement of interest charges on the amount of the periodic payment computed in accordance with the changes made, as provided herein; provided, that the awarding authority may, within seven days after receipt, return to the contractor for correction, any periodic estimate which is not in the required form or which contains computations not arithmetically correct and, in that event, the date of receipt of such periodic estimate shall be the date of receipt of the corrected periodic estimate in proper form and with arithmetically correct computations. The date of receipt of a periodic estimate received on a Saturday shall be the first working day thereafter. The provisions of section thirty-nine G shall not apply to any contract for the construction, reconstruction, alteration, remodeling, repair or demolition of any public building to which this section applies.

All periodic estimates shall be submitted to the awarding authority, or to its designee as set forth in writing to the contractor, and the date of receipt by the awarding authority or its designee shall be marked on the estimate. All periodic estimates shall contain a separate item for each filed subtrade and each sub-subtrade listed in sub-bid form as required by specifications and a column listing the amount paid to each subcontractor and sub-subcontractor as of the date the periodic estimate is filed. The person making payment for the awarding authority shall add the daily interest provided for herein to each payment for each day beyond the due date based on the date of receipt marked on the estimate.

A certificate of the architect to the effect that the contractor has fully or substantially completed the work shall, subject to the provisions of section thirty-nine J, be conclusive for the purposes of this section.

Notwithstanding the provisions of this section, at any time after the value of the work remaining to be done is, in the estimation of the awarding authority, less than 1 per cent of the adjusted contract price, or the awarding authority has determined that the contractor has substantially completed the work and the awarding authority has taken possession for occupancy, the awarding authority may send to the general contractor by certified mail, return receipt requested, a complete and final list of all incomplete and unsatisfactory work items, including, for each item on the list, a good faith estimate of the fair and reasonable cost of completing such item. The general contractor shall then complete all such work items within 30 days of receipt of such list or before the contract completion date, whichever is later. If the general contractor fails to complete all incomplete and unsatisfactory work items within 45 days after receipt of such items furnished by the awarding authority or before the contract completion date, whichever is later, subsequent to an additional 14 days' written notice to the general contractor by certified mail, return receipt requested, the awarding authority may terminate the contract and complete the incomplete and unsatisfactory work items and charge the cost of same to the general contractor and such termination shall be without prejudice to any other rights or remedies the awarding authority may have under the contract.

The awarding authority shall note any such termination in the evaluation form to be filed by the awarding authority pursuant to the provisions of section 44D of chapter 149.”

- 5.1.1** The Contractor may include in a periodic estimate the value of materials or equipment delivered at the Site (or at some location agreed to in writing) only upon delivery to the Owner of: (1) an acceptable transfer of title on the form provided by the Owner; (2) written certification by the Contractor (or applicable subcontractor) on the form provided by the Owner that the Contractor (or the Subcontractor which executed the transfer of title) is the lawful owner and that the materials or equipment are free from all encumbrances, accompanied by receipted invoices or other acceptable proof of prior payment for such materials; (3) a stored materials insurance binder that covers the materials for which payment is requested, that names the Owner as an insured party should the stored materials be subjected to any casualty, loss, or theft prior to their inclusion in the Work. The material(s) or equipment must, in the judgment of the Designer (1) meet the requirements of the Contract, including prior shop drawing, product data, and sample approval, (2) be ready for use, and (3) be properly stored by the Contractor and be adequately protected until incorporated into the Work.
- 5.1.2** In submitting an Application for Payment, the Contractor warrants that title to all work covered by an application for payment will pass to the Owner either by incorporation into the construction or upon the

receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests, or encumbrances, hereinafter referred to in this article as 'liens.' The Contractor further agrees that the submission of any application for payment shall conclusively be deemed to waive all liens with respect to set work to which the Contractor may then be entitled, provided that such waiver of the lien rights shall not waive the Contractor's right to payment for such work.

**5.1.3** Payment for materials stored off site shall be at the sole discretion of the Owner. Any additional costs to the Owner resulting from storage of material off site for which payment is requested, such as, but not limited to, travel expenses and time for inspectors, shall be charged to, and paid by, the Contractor.

**5.2 Deductions by the Owner.** The Owner may deduct from any application for a periodic payment submitted by the Contractor a retention based upon the value of its claims (including claims of defective work and liquidated damages) against the Contractor plus a retention of 5% of the approved amount of the Application for Payment and any other amounts authorized by M.G.L. c. 30, §§ 39F, 39G and/or 39K, as applicable.

**5.3 Final Payment.** Final Payment under this Contract shall be processed in accordance with the procedures set forth in M.G.L. c. 30, §§ 39F, 39G and/or 39K, as applicable. The acceptance by the Contractor of the last payment due under this Contract or the Contractor's execution of the Final Certificate of Completion, shall operate as a release to the Owner from all claims and liability related to this Contract.

**5.4 Payment of Subcontractors.** The Contractor shall make payment to subcontractors in accordance with M.G.L. c. 30, § 39F. For purposes of this Agreement, the word "forthwith" appearing in paragraph (1)(a) of M.G.L. c. 30, § 39F shall be deemed to mean "within five (5) business days." The Contractor shall, at the Owner's request, furnish satisfactory evidence that all such obligations have been paid, discharged, or waived.

## **6.0 WARRANTIES AND GUARANTEE**

**6.1 Warranty.** The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor guarantees and warrants to the Owner

that all labor furnished under this Agreement will be competent to perform the tasks undertaken that the product of such labor will yield only first-class results.

**6.2 General Guaranty.** If at any time during the period of one (1) year from the date of the its final completion, as shown on an approved payment request, the Work or any part of the Work shall in the reasonable determination of the Owner require replacing or repairing due to the fact that it is broken, defective, or otherwise does not conform to the Contract Documents, the Owner will notify the Contractor to make the required repairs or replacement. If the Contractor shall neglect to commence such repairs or replacements to the satisfaction of the Owner within ten (10) days from the date of giving or mailing such notice, then the Owner may employ other persons to make said repairs or replacements. The Contractor agrees, upon demand, to pay to the Owner all amounts which the Owner expends for such repairs or replacements. For items of work completed after substantial completion, the one-year guarantee shall commence at the time the Owner approves of the completion of such items. This one-year guarantee shall not limit any express guaranty or warranty required to be assigned to the Owner pursuant to the terms of the Plans and Specifications.

**6.3** All guarantees and warranties required in the various Sections of the Specifications that originate with a Subcontractor or Manufacturer must be delivered to the Owner before final payment to the Contractor may be made for the amount of the sub-trade or for the phase of work to which the guarantee or warranty relates. The failure to deliver a required guarantee or warranty shall constitute a failure of the Subcontractor to fully complete its work in accordance with the Contract Documents. The Contractor's obligation to correct work is in addition to, and not in substitution of, such guarantees or warranties as may be required in the various Sections of the Specifications.

## **7.0 INSURANCE REQUIREMENTS**

**7.1** The Contractor shall purchase from, and maintain in a company or companies lawfully authorized to do business in the Commonwealth of Massachusetts, and to which the Owner has no reasonable objection, insurance for protection from claims under workers' compensation acts and other employee benefit acts which are applicable, claims for damages because of bodily injury, including death, and claims for damages, other than to the Work itself, to property which may arise out of or result from the Contractor's operations and completed operations under the Contract, whether such operations be by the Contractor or by a Subcontractor or anyone directly or indirectly employed by any of them. This insurance shall be written for not less than limits of liability specified herein.

**7.2** The insurance required by the above shall be written for not less than the following amounts and shall be submitted on ACORD Certificate of Insurance Form 2.5-S (08/01) or other similar form acceptable to the Owner:

- 7.2.1** Commonwealth of Massachusetts Statutory Worker's Compensation and other benefits as required under the General Laws of Massachusetts, including Employer's Liability Part B: \$500,000/\$500,000/\$500,000.
- 7.2.2** Broad form Commercial General Liability, written on a "per occurrence" basis with an aggregate cap no less than three (3) times the required limit: \$1,000,000 C.S.L. Property Damage Liability shall include coverage for X-C-U hazard of explosion, collapse, and damage to underground property.
- 7.2.3** Umbrella or Excess Liability coverage following form of underlying General, Automobile and Employers' Liability Coverage: (a) Minimum of \$2,000,000 C.S.L. over primary insurance; (b) No more than \$10,000 Retention.
- 7.2.4** Comprehensive Automobile Liability covering owned, non-owned, and hired or borrowed vehicles: \$1,000,000 C.S.L.

**7.3** The above insurance policies shall also be subject to the following requirements:

- 7.3.1** Certificates of Insurance and copies of policies acceptable to the Owner shall be addressed to and filed with the Owner prior to commencement of the work. Renewal certificates shall be filed with the Owner at least thirty (30) days prior to the expiration date of required policies.
- 7.3.2** No insurance coverage shall be subject to cancellation or non-renewal without at least thirty (30) days prior written notice forwarded by registered or certified mail to the Town. The Contractor shall notify the Town of the attachment of any restrictive amendments, material changes or impairment to the policies.
- 7.3.3** All premium costs shall be included in Contractor's bid. The Contractor shall be responsible for the cost of any and all deductibles.
- 7.3.4** The Town of Hopkinton (including its officials, employees, agents and representatives) shall be named as additional insured on Contractor's General Liability, Automobile Liability, and Umbrella or Excess Liability Insurance Policies.

**7.4** Neither the Owner's authority to review certificates and policies of insurance nor its decision to raise or not to raise any objections about those certificates and policies, shall in any way give rise to any duty or responsibility on the part of the Owner to exercise this authority for the benefit of the Contractor, any Subcontractor, Sub-subcontractor, or Supplier, or any other party.



**7.5** The Contractor's liability insurance shall remain in effect until the end of the Correction period as defined in the Contract Documents, and at all times after that when the Contractor may be correcting, removing or replacing defective Work. The Completed Operations insurance shall be maintained for three (3) years after Final Payment.

**7.6** Insufficient insurance shall not release the Contractor from any liability for breach of its obligations under this Agreement.

## **8.0 INDEMNIFICATION**

To the fullest extent permitted by law, the Contractor shall defend, indemnify in whole or in part, defend, pay-on-behalf of and hold harmless the Owner, the Engineer, and the agents and employees of each from and against all claims, damages, losses and expenses, including but not limited to attorneys' fees and loss of use caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Article 8.

## **9.0 BONDS**

The Contractor shall furnish a performance bond for the full amount of the Contract, and also a labor and materials payment bond for the full amount of the Contract, the form of which bonds are set forth in the Contract Documents, each of a surety company qualified to do business under State laws and satisfactory to the Owner, the premiums for which are to be included in the Contract Price and paid by the Contractor. These bonds shall (a) guarantee the faithful performance by the Contractor of all its obligations under this contract and (b) constitute the security required by M.G.L. c. 149, § 29 and M.G.L. c. 30, § 39A, as amended, for payment by the Contractor or its subcontractors used or employed in connection with the contract. Each bond shall incorporate by reference the terms of this contract. These bonds shall remain in effect for the entire guarantee period for each phase of the work, which shall commence on the date of Final Completion, as defined in the Contract Documents.

## **10.0 TERMINATION**

**10.1 Termination for Cause.** If the Contractor is adjudged a bankrupt, or if the Contractor makes a general assignment for the benefit of the Contractor's creditors, or if a receiver is appointed on account of the Contractor's insolvency, or if the Contractor consistently or repeatedly refuses or fails, excepting cases of which extension of time is appropriated, to supply enough properly skilled workmen or

proper materials, or if the Contractor fails to make prompt payment to the Subcontractors of for materials or labor, or persistently disregards law, ordinances, rules, regulations, or orders of any public authority having jurisdiction or disregards an instruction, order or decision of the Contracting Officer, or otherwise is guilty of a substantial violation of any provision of the contract, then the Contractor shall be in default, and the Owner may, without prejudice to any other right or remedy and upon written notice to the Contractor, take possession of all materials, tools, appliances, equipment, construction equipment, and machinery and vehicles, offices and other facilities on the project site and all material intended for the work, wherever stored, and seven (7) days after such notice, may terminate the employment of the Contractor, accept assignment of any or all Subcontractor's contracts pursuant to this Agreement, and furnish the work by whatever method the Owner may deem expedient. The Owner shall be entitled to collect from the Contractor all direct, indirect, and consequential damages suffered by the Owner of behalf of the Contractor's defaults. The Owner shall be entitled to hold all amounts due to Contractor at the date of termination until all of the Owner's damages have been established, and to apply such amounts to such damages.

**10.1.1** The Owner shall incur no liability by reason of such termination.

## **10.2 Termination for Convenience.**

**10.2.1** In the event that this Contract is terminated by the Owner prior to the completion of construction and termination is not based on a reason listed in Paragraph 10.1, the Contractor shall be compensated for its costs incurred, including reasonable costs of de-mobilization, calculated on a percent completion basis covering the period of time between the last Approved application for payment and the date of termination.

**10.2.2** Payment by the Owner pursuant to Subparagraph 10.2.1 shall be deemed to fully compensate the Contractor for all claims and expenses directly or indirectly attributable to the termination, including any claims for lost profits.

**10.3** The Contractor shall not be relieved of liability to the Owner by virtue of any termination of this Contract, and any claim for damages against the Contractor relating to the Contractor's performance under this Contract shall survive any termination hereunder.

**10.4** In the event of termination of this Contract, the Contractor shall promptly deliver to the Town all documents, work papers, calculations, computer programs, data, drawings, plans, and other tangible work product, or materials pertaining to the Services performed under this Contract to the time of termination.

## **11. NON-APPROPRIATION**

Payments are subject to appropriation and shall be made only for work performed in accordance with the terms of this Contract. The Contractor shall not be obligated to perform, and may not perform, work outside the duration and scope of this Contract without an appropriate amendment to this Contract, and a sufficient appropriation(s) to support such additional work. The Owner may immediately terminate or suspend this Contract in the event that the appropriation(s) funding this Contract is eliminated or reduced to an amount which will be insufficient to support anticipated future obligations under this Contract.

## **12. RECORDS AND LAWS**

The Contractor shall comply with M.G.L. c. 30, § 39R. The Contractor shall make, and keep for at least six years after final payment, books, records, and accounts, which in reasonable detail accurately and fairly reflect the transactions and dispositions of the Contractor.

## **13. DISPUTE RESOLUTION**

Claims, disputes or other matters in question between the parties to this Contract arising out of or relating to this Contract or breach thereof shall be subject to and decided by the Superior Court of Massachusetts in Middlesex County, if jurisdiction exists, and if jurisdiction does not exist in the Superior Court, said action shall be brought in the Suffolk District Court of Massachusetts. A claim, dispute or other matter may be submitted to mediation, in accordance with the provisions of the American Arbitration Association, at the sole discretion of the Owner.

- 13.1** In the event that the Owner elects to demand mediation to settle any claim, dispute or matter in question, the parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

## **14. CHOICE OF LAW**

This Contract shall be construed under and governed by the laws of the Commonwealth of Massachusetts. The Contractor, and the agents thereof, agree to bring any federal or state legal proceedings arising under this Contract, in which either the Commonwealth or the Owner is a party, in a court of competent jurisdiction within the Commonwealth of Massachusetts. This section shall not be construed to limit any rights a party may have to intervene in any action, in any court or wherever, pending, in which the other is a party.

## **15. NOTICES**

Notices to the Contractor shall be deemed given when hand delivered to the Contractor's Representative in person, or when deposited in the U.S. mail addressed to the Contractor at the Contractor's address specified in the Owner - Contractor Agreement, or when delivered by courier to either location. Unless otherwise specified in writing by the Owner, notices and deliveries to the Owner shall be effective only when delivered to the Owner at the address specified in the Owner - Contractor Agreement and date-stamped at the reception desk or for which a receipt has been signed by the agent or employee designated by the Owner to receive official notices.

SECTION 00610  
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we \_\_\_\_\_

\_\_\_\_\_ as Principal  
(Name of Contractor)

a \_\_\_\_\_  
(Corporation, Partnership, or Individual)

hereinafter called "Principal) and \_\_\_\_\_  
(Surety)

\_\_\_\_\_ of \_\_\_\_\_, State of \_\_\_\_\_, hereinafter

called the "Surety", are held and firmly bound into the TOWN OF \_\_\_\_\_,  
MASSACHUSETTS acting by and through its \_\_\_\_\_ hereinafter called

the "Owner" or "Awarding Authority", in the sum of \_\_\_\_\_

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_),

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain contract with the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 202\_\_\_\_; a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no changes, extension of time, alteration or addition to the terms of the Contract, any of the Contract Documents or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation of this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

18255.01  
07/24

**SECTION 00610**  
**PERFORMANCE BOND**

In witness whereof, this instrument is executed in \_\_\_\_ (\_\_\_\_) counterparts, each one of which shall be deemed an original, this \_\_\_\_\_ day of \_\_\_\_\_, 202\_\_.

\_\_\_\_\_  
Principal

(SEAL)

Attest:

By: \_\_\_\_\_  
Contractor

By: \_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City/Town, State, Zip Code

\_\_\_\_\_  
City/Town, State, Zip Code

\_\_\_\_\_  
Surety

(SEAL)

Attest:

By: \_\_\_\_\_  
Attorney-in-Fact

By: \_\_\_\_\_  
Witness as to Surety

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City/Town, State, Zip Code

\_\_\_\_\_  
City/Town, State, Zip Code

Notes:

1. Date of Bond must not be prior to date of Contract. If Contractor is Partnership, all partners must execute the Bond.
2. Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

END OF SECTION

KNOW ALL MEN BY THESE PRESENTS:

That \_\_\_\_\_

as Principal, hereunder called Contractor, and \_\_\_\_\_

\_\_\_\_\_ of \_\_\_\_\_

as Surety, hereinafter call Surety, are held and firmly bound unto \_\_\_\_\_

as Obligee, hereinafter called Owner, in the penal sum of \_\_\_\_\_

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_),

for the payment of which sum well and truly to be made we bind ourselves, our heirs, executors administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEEAS, Contractor has by written agreement dated \_\_\_\_\_

entered into a Contract with Owner for \_\_\_\_\_

NOW, THEREFORE, if the Contractor and his Sub-contractors shall pay for labor performed and materials used or employed in the prosecution of the work provided for in said Contract, and for all other items of the kind and nature specified in Chapter 149, Section 29, of the General Laws of Massachusetts, then this obligation shall be void; otherwise to remain in full force and effect;

PROVIDED, HOWEVER, that in order to obtain the benefits of this bond, all claimants shall comply with all the provisions of said Chapter 149, Section 29, which are pertinent to their claims, and all rights and liabilities on this bond shall be determined and limited by said section to the same extent as if this were copied at length herein.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and affixed their seals on \_\_\_\_\_, 202\_\_\_\_.

Witness as to Principal:

\_\_\_\_\_  
(Principal)

\_\_\_\_\_  
(Surety)

\_\_\_\_\_

By: \_\_\_\_\_  
(Attorney-in-Fact)

END OF SECTION

18255.01  
07/24

**SECTION 00700**  
**GENERAL CONDITIONS**



This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

## STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



Endorsed by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## TABLE OF CONTENTS

	<b>Page</b>
Article 1 – Definitions and Terminology .....	1
1.01 Defined Terms .....	1
1.02 Terminology .....	5
Article 2 – Preliminary Matters .....	6
2.01 Delivery of Bonds and Evidence of Insurance .....	6
2.02 Copies of Documents .....	6
2.03 Before Starting Construction .....	6
2.04 Preconstruction Conference; Designation of Authorized Representatives .....	7
2.05 Initial Acceptance of Schedules .....	7
2.06 Electronic Transmittals .....	7
Article 3 – Documents: Intent, Requirements, Reuse .....	8
3.01 Intent .....	8
3.02 Reference Standards .....	8
3.03 Reporting and Resolving Discrepancies .....	8
3.04 Requirements of the Contract Documents .....	9
3.05 Reuse of Documents .....	10
Article 4 – Commencement and Progress of the Work .....	10
4.01 Commencement of Contract Times; Notice to Proceed .....	10
4.02 Starting the Work .....	10
4.03 Reference Points .....	10
4.04 Progress Schedule .....	10
4.05 Delays in Contractor’s Progress .....	11
Article 5 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions .....	12
5.01 Availability of Lands .....	12
5.02 Use of Site and Other Areas .....	12
5.03 Subsurface and Physical Conditions .....	13
5.04 Differing Subsurface or Physical Conditions .....	14
5.05 Underground Facilities .....	15

5.06	Hazardous Environmental Conditions at Site .....	17
Article 6 – Bonds and Insurance .....		19
6.01	Performance, Payment, and Other Bonds .....	19
6.02	Insurance—General Provisions .....	19
6.03	Contractor’s Insurance .....	20
6.04	Owner’s Liability Insurance .....	23
6.05	Property Insurance .....	23
6.06	Waiver of Rights .....	25
6.07	Receipt and Application of Property Insurance Proceeds .....	25
Article 7 – Contractor’s Responsibilities .....		26
7.01	Supervision and Superintendence .....	26
7.02	Labor; Working Hours .....	26
7.03	Services, Materials, and Equipment.....	26
7.04	“Or Equals” .....	27
7.05	Substitutes .....	28
7.06	Concerning Subcontractors, Suppliers, and Others .....	29
7.07	Patent Fees and Royalties .....	31
7.08	Permits .....	31
7.09	Taxes .....	32
7.10	Laws and Regulations.....	32
7.11	Record Documents .....	32
7.12	Safety and Protection.....	32
7.13	Safety Representative .....	33
7.14	Hazard Communication Programs .....	33
7.15	Emergencies .....	34
7.16	Shop Drawings, Samples, and Other Submittals.....	34
7.17	Contractor’s General Warranty and Guarantee.....	36
7.18	Indemnification .....	37
7.19	Delegation of Professional Design Services .....	37
Article 8 – Other Work at the Site .....		38
8.01	Other Work .....	38
8.02	Coordination .....	39
8.03	Legal Relationships.....	39

Article 9 – Owner’s Responsibilities.....	40
9.01 Communications to Contractor.....	40
9.02 Replacement of Engineer .....	40
9.03 Furnish Data .....	40
9.04 Pay When Due.....	40
9.05 Lands and Easements; Reports, Tests, and Drawings .....	40
9.06 Insurance .....	40
9.07 Change Orders.....	40
9.08 Inspections, Tests, and Approvals.....	41
9.09 Limitations on Owner’s Responsibilities .....	41
9.10 Undisclosed Hazardous Environmental Condition.....	41
9.11 Evidence of Financial Arrangements.....	41
9.12 Safety Programs .....	41
Article 10 – Engineer’s Status During Construction.....	41
10.01 Owner’s Representative.....	41
10.02 Visits to Site.....	41
10.03 Project Representative.....	42
10.04 Rejecting Defective Work.....	42
10.05 Shop Drawings, Change Orders and Payments.....	42
10.06 Determinations for Unit Price Work .....	42
10.07 Decisions on Requirements of Contract Documents and Acceptability of Work .....	42
10.08 Limitations on Engineer’s Authority and Responsibilities.....	42
10.09 Compliance with Safety Program.....	43
Article 11 – Amending the Contract Documents; Changes in the Work .....	43
11.01 Amending and Supplementing Contract Documents .....	43
11.02 Owner-Authorized Changes in the Work .....	44
11.03 Unauthorized Changes in the Work .....	44
11.04 Change of Contract Price .....	44
11.05 Change of Contract Times .....	45
11.06 Change Proposals .....	45
11.07 Execution of Change Orders.....	46
11.08 Notification to Surety.....	47
Article 12 – Claims.....	47

12.01	Claims .....	47
Article 13 –	Cost of the Work; Allowances; Unit Price Work.....	48
13.01	Cost of the Work .....	48
13.02	Allowances .....	50
13.03	Unit Price Work .....	51
Article 14 –	Tests and Inspections; Correction, Removal or Acceptance of Defective Work.....	52
14.01	Access to Work.....	52
14.02	Tests, Inspections, and Approvals.....	52
14.03	Defective Work.....	53
14.04	Acceptance of Defective Work.....	53
14.05	Uncovering Work .....	53
14.06	Owner May Stop the Work .....	54
14.07	Owner May Correct Defective Work.....	54
Article 15 –	Payments to Contractor; Set-Offs; Completion; Correction Period .....	55
15.01	Progress Payments.....	55
15.02	Contractor’s Warranty of Title .....	58
15.03	Substantial Completion.....	58
15.04	Partial Use or Occupancy .....	59
15.05	Final Inspection .....	59
15.06	Final Payment.....	59
15.07	Waiver of Claims .....	61
15.08	Correction Period .....	61
Article 16 –	Suspension of Work and Termination .....	62
16.01	Owner May Suspend Work .....	62
16.02	Owner May Terminate for Cause .....	62
16.03	Owner May Terminate For Convenience .....	63
16.04	Contractor May Stop Work or Terminate .....	63
Article 17 –	Final Resolution of Disputes .....	64
17.01	Methods and Procedures.....	64
Article 18 –	Miscellaneous .....	64
18.01	Giving Notice .....	64
18.02	Computation of Times.....	64
18.03	Cumulative Remedies .....	64

18.04	Limitation of Damages .....	65
18.05	No Waiver .....	65
18.06	Survival of Obligations .....	65
18.07	Controlling Law .....	65
18.08	Headings.....	65

## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
  3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  5. *Bidder*—An individual or entity that submits a Bid to Owner.
  6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
  7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
  8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
  9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
  10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer



has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

## 1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
  1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
  1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
  1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
    - a. does not conform to the Contract Documents; or
    - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
    - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
  1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## **ARTICLE 2 – PRELIMINARY MATTERS**

### **2.01 *Delivery of Bonds and Evidence of Insurance***

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

### **2.02 *Copies of Documents***

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

### **2.03 *Before Starting Construction***

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
  1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
  2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

#### 2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

#### 2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
  1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
  2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
  3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

#### 2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or

computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

### **ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

#### **3.01 *Intent***

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

#### **3.02 *Reference Standards***

- A. Standards Specifications, Codes, Laws and Regulations
  - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

#### **3.03 *Reporting and Resolving Discrepancies***

- A. *Reporting Discrepancies:*
  - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,

error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
  - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.



### 3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
  - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
  - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

## **ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK**

### 4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

### 4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

### 4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

### 4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

#### 4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  2. abnormal weather conditions;
  3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
  4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

## **ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

### **5.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

### **5.02 *Use of Site and Other Areas***

#### **A. *Limitation on Use of Site and Other Areas:***

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
- 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part

by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

### 5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
  - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
  - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
  - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
  - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
  - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

#### 5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
  2. is of such a nature as to require a change in the Drawings or Specifications; or
  3. differs materially from that shown or indicated in the Contract Documents; or
  4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
    - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

- c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
    - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
    - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
    - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
  3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
  4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

#### 5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
  1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
  2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
    - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
    - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
    - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after

becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
  - 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
    - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
    - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
    - d. Contractor gave the notice required in Paragraph 5.05.B.
  - 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
  - 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
  2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
  2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.



- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 6 – BONDS AND INSURANCE

### 6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

### 6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

### 6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
  - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
  - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
  2. claims for damages insured by reasonably available personal injury liability coverage.
  3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
    - a. Such insurance shall be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  3. Broad form property damage coverage.
  4. Severability of interest.
  5. Underground, explosion, and collapse coverage.
  6. Personal injury coverage.
  7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
  8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
  2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
  3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
  4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
  5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

#### 6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

#### 6.05 *Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
  - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
  - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
  - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
  - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
  6. extend to cover damage or loss to insured property while in transit.
  7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
  8. allow for the waiver of the insurer's subrogation rights, as set forth below.
  9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
  10. not include a co-insurance clause.
  11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
  12. include performance/hot testing and start-up.
  13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

## 6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
  - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
  - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

## 6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the



policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

## **ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

### *7.01 Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

### *7.02 Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

### *7.03 Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### 7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that:
      - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
      - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
      - 3) it has a proven record of performance and availability of responsive service; and
      - 4) it is not objectionable to Owner.
    - b. Contractor certifies that, if approved and incorporated into the Work:
      - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
      - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

#### 7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
  - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
  - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
  - 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
    - a. shall certify that the proposed substitute item will:
      - 1) perform adequately the functions and achieve the results called for by the general design,
      - 2) be similar in substance to that specified, and
      - 3) be suited to the same use as that specified.
    - b. will state:
      - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
      - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
      - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
    - c. will identify:
      - 1) all variations of the proposed substitute item from that specified, and

- 2) available engineering, sales, maintenance, repair, and replacement services.
  - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
  - C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
  - D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
  - E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
  - F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

#### 7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

- O. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
  2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

#### 7.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

#### 7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

#### 7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

#### 7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
  - C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
  - D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
  - E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
  - F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
  - G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

#### 7.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

#### 7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or



exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 7.16 *Shop Drawings, Samples, and Other Submittals*

##### A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
  - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
  - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
  - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

##### 1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples:*
    - a. Contractor shall submit the number of Samples required in the Specifications.
    - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
  3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
  2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
  4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
  5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
  6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
  7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
  1. observations by Engineer;
  2. recommendation by Engineer or payment by Owner of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. use or occupancy of the Work or any part thereof by Owner;
  5. any review and approval of a Shop Drawing or Sample submittal;
  6. the issuance of a notice of acceptability by Engineer;
  7. any inspection, test, or approval by others; or
  8. any correction of defective Work by Owner.

- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

#### 7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

#### 7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop

Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

## **ARTICLE 8 – OTHER WORK AT THE SITE**

### **8.01 *Other Work***

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

## 8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
  - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
  - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
  - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

## 8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner for whom the Owner is responsible causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

## **ARTICLE 9 – OWNER'S RESPONSIBILITIES**

### **9.01 *Communications to Contractor***

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### **9.02 *Replacement of Engineer***

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

### **9.03 *Furnish Data***

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

### **9.04 *Pay When Due***

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

### **9.05 *Lands and Easements; Reports, Tests, and Drawings***

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

### **9.06 *Insurance***

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

### **9.07 *Change Orders***

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

**ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION**

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during



or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

#### 10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

### **ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK**

#### 11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
  - 1. *Change Orders:*
    - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
    - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
  - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

#### 11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

#### 11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

#### 11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
  1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
  2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
  3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on

the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
  2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
    - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
    - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.04.C.2.a and 11.04.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
    - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
    - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
    - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

#### 11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

#### 11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
  2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
  3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

#### 11.07 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
  4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

#### 11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

### **ARTICLE 12 – CLAIMS**

#### 12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
  - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
  - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
  - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
  - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim

submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

## **ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### 13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
  1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
  2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
  1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable

thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
  - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
  - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes



other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

## 13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

- B. *Cash Allowances*: Contractor agrees that:
  - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
  - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

### 13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
  - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
  - 2. there is no corresponding adjustment with respect to any other item of Work; and
  - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

## **ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

### **14.01 Access to Work**

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

### **14.02 Tests, Inspections, and Approvals**

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
  - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
  - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
  - 3. by manufacturers of equipment furnished under the Contract Documents;
  - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
  - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

cover the same and Engineer had not acted with reasonable promptness in response to such notice.

#### 14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

#### 14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

#### 14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
  - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

#### 14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will

include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

## **ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

### **15.01 Progress Payments**

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
  2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
  3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
  2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
    - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
    - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
  4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
    - a. to supervise, direct, or control the Work, or
    - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
    - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
    - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
    - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
  5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
  6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
    - a. the Work is defective, requiring correction or replacement;
    - b. the Contract Price has been reduced by Change Orders;
    - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
    - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

- e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

- 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner:*

- 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
  - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
  - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
  - c. Contractor has failed to provide and maintain required bonds or insurance;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
  - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
  - f. the Work is defective, requiring correction or replacement;
  - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - h. the Contract Price has been reduced by Change Orders;
  - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
  - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
  - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - l. there are other items entitling Owner to a set off against the amount recommended.
- 2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount



remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

#### 15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

#### 15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

#### 15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
  - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
  - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
  - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
  - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

#### 15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 15.06 *Final Payment*

- A. *Application for Payment:*
  - 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to final payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
  - d. a list of all disputes that Contractor believes are unsettled; and
  - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

**B. *Engineer's Review of Application and Acceptance:***

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

**C. *Completion of Work:*** The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

**D. *Payment Becomes Due:*** Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

#### 15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

#### 15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. correct the defective repairs to the Site or such other adjacent areas;
  - 2. correct such defective Work;
  - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

## **ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION**

### **16.01 *Owner May Suspend Work***

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

### **16.02 *Owner May Terminate for Cause***

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,

and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

#### 16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for

expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

## **ARTICLE 17 – FINAL RESOLUTION OF DISPUTES**

### **17.01 *Methods and Procedures***

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
  - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
  - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
  - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
  - 2. agree with the other party to submit the dispute to another dispute resolution process; or
  - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

## **ARTICLE 18 – MISCELLANEOUS**

### **18.01 *Giving Notice***

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
  - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
  - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

### **18.02 *Computation of Times***

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

### **18.03 *Cumulative Remedies***

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.



These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC Document No. C-700, 2013 edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

**ARTICLE 1 – DEFINITIONS AND TERMINOLOGY**

1.01 A.8. Add the following after “signed by Contractor”:

“, Engineer,”

1.01 A.12 Add the following to the beginning:

“The Contract Documents form the Contract for Construction. The Contract represents ...”

1.01 A.13 Delete definition in its entirety and insert the following in its place:

“The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda, Contractor’s Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and Engineer’s written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by Owner to Contractor are not Contract Documents.”

1.01 A.20 Delete definition in its entirety and insert the following in its place:

“The individual or entity duly appointed by the Owner to undertake the duties and powers herein assigned to the Engineer, acting either directly or through duly appointed representatives.”

1.01 A.40 Delete entirely and insert the following in its place:

“Substantial Completion shall be interpreted in accordance with Massachusetts General Law Chapter 30, Section 39G or 39K as appropriate.”

1.01 A.49 Add the following new definition:

“*Governing Laws and Building Code*-- The term ‘governing laws and building code,’ whenever used, shall mean all laws, ordinances, rules, regulations, and lawful orders of any public authority, federal, state, or local bearing on the performance of the Work and the building code or codes legally applicable to work.”

1.01 A.50 Add the following new definition:

“*Modification*--A Modification is (1) a written amendment to the Contract signed by both parties; (2) a Change Order; (3) a Work Change Directive; or (4) a written order for a minor change in the Work issued by the Engineer in one of the following ways (a) a Field Order; (b) Engineer’s approval of a

Shop Drawing or Sample; or (iii) Engineer's written interpretation or clarification."

1.02 B.1 Add the following after the word "satisfactory,":

"'necessary,' 'as directed,' 'when directed,' 'good and sufficient,'"

1.02 B.2 Add the following new subsection:

"The terms 'approval,' 'approved,' 'approved equal,' 'or equal,' or 'other approved' mean as approved by the Engineer."

## ARTICLE 2 – PRELIMINARY MATTERS

2.01.C Delete in its entirety.

2.03 B Add the following new paragraph:

"Notwithstanding the time limitations provided in paragraph 2.03A, the Owner may desire to commence the Contract Times later than the sixtieth day after the bid opening. The Owner and Contractor, upon mutual agreement, may extend the commencement of the Contract Times to any date that they elect. Owner must obtain Contractor's approval for extending the time beyond the dates/times stated in the Contract Documents."

## ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 A. Add the following to the end of the paragraph:

"Each and every provision of law and clause required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and they shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or if not correctly inserted, then upon the application of either party, the Contract Documents shall forthwith be physically amended to make such insertion. All work mentioned or indicated in the Contract Documents shall be performed by the Contractor as part of the Contract unless it is specifically indicated in the Contract Documents that such Work is to be done by others."

3.01 A.1 Add the following new subsection:

"In the event of conflict in or between the Contract Documents, the Contractor shall be held to the highest standard therein. Where compliance with two or more industry standards or set of requirements is specified, and overlapping of those different standards or requirements established different or conflicting minimums or level of quality, the most stringent requirements is intended."

3.01 A.2 Add the following new subsection:

"In the event of an conflict between any provision or language of the Contract and any provision or language of the Contract Documents, the provision or language of the Contract shall control. In the event of any conflict or inconsistency between this Contract, the Contract Documents and any applicable state law, the applicable statutory provisions shall prevail."

**SECTION 00800**  
**SUPPLEMENTARY CONDITIONS**

3.01 F. Add the following new section:

“Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade, except sections designated for Filed Sub-Bids as otherwise required by law. The General Contractor and all Subcontractors shall refer to all of the Drawings, including those showing primarily the work of the mechanical, electrical, and other specialized trades, and to all of the sections of the specifications, and shall perform all Work reasonably inferable therefrom as being necessary to produce the indicated results.”

3.01 G. Add the following new section:

“Test boring and soil test information provided in the Project Manual was obtained by the Owner for use by the Engineer in the design of the Project. The Owner does not hold out such information to the Contractor as an accurate or approximate indication of subsurface conditions, and no claim for extra cost or extension of time resulting from the Contractor’s reliance upon such information shall be permitted.”

3.01 H. Add the following new section:

“The Drawings and Specifications are intended to supplement one another. Materials and workmanship described are not necessarily found in both. Drawings are not intended to be scaled or to act as shop drawings. Inadvertent discrepancies or omissions shown on one drawing but not on others shall not be cause for additional charges or claims. In case of discrepancies, figured dimensions shall take precedence over smaller scale drawings. Specifications shall take precedence over Drawings for quality of materials and general performance of the work.”

3.01 I. Add the following new section:

“Whenever an item is specified and/or shown on the Drawings by details or reference, it shall be considered typical for other items which are obviously intended to be the same even though not so designated or specifically named but do serve the same function for this project.”

3.02 A.2 Delete entirely and insert the following in its place:

“Owner and Contractor recognize that other rights, duties, and obligations with respect to public construction contracts are also provided by statute, notwithstanding the fact that they are not specifically enumerated herein. Accordingly, any provisions required by statute to be included in this contract shall be deemed to be so included as though fully set forth herein. However, compliance with a statute does not diminish the Contractor’s responsibilities hereunder.”

3.02 A.3 Add the following new subsection:

“Where reference is made to ASTM Specifications, it shall mean the standard specific specifications of the American Society for Testing and Materials of the most recent designation.”

3.02 A.4 Add the following new subsection:

“Similarly, where reference is made to Specifications, Standards or requirements of A.S.M.E. or A.S.H. & V.E., they shall mean respectively those American Society for Mechanical Engineers and the American Society for Heating and Ventilating Engineers, and shall be from the latest editions.”

3.02 A.5 Add the following new subsection:

“Where compliance with two or more industry standards or set of requirements is specified, and overlapping of those different standards or requirements established different or conflicting minimums or level of quality, the most stringent requirements is intended.”

3.02 A.5.a Add the following new subsection:

“The standards referred to, except as modified in the Contract Documents, shall have full force and effect as though printed in the Contract Documents. These standards are not furnished to the Contractor for the reason that the manufacturers and trades involved are assumed to be familiar with their requirements. The Contractor shall make himself aware of the contents of such documents and furnish the field office with one full set of each.”

3.02 A.5.b Add the following new subsection:

“Where no explicit quality or standards for material or workmanship are established for work, such work is to be of as good quality of the surrounding work and of the construction of the Project generally.”

3.02 A.5.c Add the following new subsection:

“All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer’s written or printed directions and instructions unless otherwise indicated in the Contract Documents.”

3.03 A.1 Add the following to the end of the paragraph:

“Should the work proceed, after the discovery of errors, conflict, or omissions by the Engineer and clarification has not been received from the Engineer, the Contractor will be held fully responsible for replacement or correction of the affected area, as directed by the Engineer, at the Contractor’s expense.”

3.03 A.2 Add the following new subsection and move existing subsection down to 3.03A.3 and delete original 3.03A.3:

“*Contractor’s Review of the Site.* The Contractor shall thoroughly acquaint himself with all the existing conditions at the site and shall take all such conditions into consideration as they may affect the work under his Contract. No allowance will be made in the Contract or the Work under the Contract for failure of the Contractor to visit the site.”

3.03 A.2.a Add the following new subsection:

“Before ordering any material or doing any work, each trade shall verify all measurements at this project and shall be responsible for the correctness of the same. No extra charge or compensation will be allowed on account of difference between actual dimensions and the measurements indicated on the Drawings, any difference which may be found shall be submitted to the Engineer for consideration before proceeding with the work.”

3.03 A.3 Add the following to the end of the new subsection 3.03A.3 (formerly 3.03.A.2):

SECTION 00800  
SUPPLEMENTARY CONDITIONS

“Should the work proceed, after the discovery of such conflict, error, ambiguity or discrepancy by the Engineer and clarification has not been received from the Engineer, the Contractor will be held fully responsible for replacement or correction of the affected area, as directed by the Engineer, at the Contractor’s expense.”

3.03 B Delete entirely.

3.04 B Delete “, and on Owner, unless it appeals by filing a Claim” and substitute the following therefor:

“or unless the Owner makes a decision contrary to the Engineer’s determination. The Owner shall be the final interpreter of all matters.”

**ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK**

4.01 A Delete entirely and replace with the following:

“The Contract Times will commence on the day indicated in the Notice to Proceed.”

4.03 B Add the following new subsection:

“Engineer may check the lines, elevations, reference marks, batter boards, etc., set by Contractor, and Contractor shall correct any errors disclosed by such check. Such a check shall not be considered as approval of Contractor’s work and shall not relieve Contractor of the responsibility for accurate construction of the entire Work. Contractor shall furnish personnel to assist Engineer in checking lines and grades.”

4.05 A Delete entirely and replace with the following:

“The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the Owner or the Engineer on account of any delay in the commencement of the work and/or any hindrance delay or suspension of any portion of the Work, whether such delay is caused by the Owner, the Engineer, or otherwise, except as and to the extent expressly provided under M.G.L. c.30, §390. The Contractor acknowledges that the Contractor’s sole remedy for any such delay and/or suspension will be an extension of time provided the Contractor complies with notice requirements contained in this Agreement.”

4.05 C Delete entirely and replace with the following:

“No extension of time shall be granted because of seasonal, normal or abnormal variations in temperature, humidity, or precipitation, which conditions shall be wholly at the risk of the Contractor, whether occurring within the time originally scheduled for completion or within the period of any extension granted. Any additional cost of operations or conditions resulting therefrom shall be the responsibility of the Contractor.”

4.05 D Delete entirely and replace with the following:

“Differing Site Conditions (M.G.L. c. 30, § 39N). If, during the progress of the work, the Contractor or the awarding authority discovers that the actual subsurface or latent physical conditions encountered at the Site differ substantially or materially from those shown on the plans or indicated in the contract

SECTION 00800  
SUPPLEMENTARY CONDITIONS

documents either the contractor or the contracting authority may request an equitable adjustment in the contract price of the contract applying to work affected by the differing Site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a contractor, or upon its own initiative, the contracting authority shall make an investigation of such physical conditions, and, if they differ substantially or materially from those shown on the plans or indicated in the contract documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and contract documents and are of such a nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the contracting authority shall make an equitable adjustment in the contract price and the contract shall be modified in writing accordingly.”

4.05 E Delete entirely.

4.06 Add the following new 4.06 A-D:

*“Time is of the Essence; Liquidated Damages*

- A. If the Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the Owner the amount specified in the Contract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contract shall be in default after the time stipulated in the Contract for completing the work. Such damages may be retained from time to time by the Owner from progress payments or any amounts owing to the Contractor, or otherwise collected.
- B. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by the Owner from current periodical estimates.
- C. It is further agreed that time is of the essence of each and every portion of this Contract and of the specifications wherein as definite and certain length of times if fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this Contract. Provided that the Contractor shall not be charged with liquidated damages of any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner; Provided, further, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:
  1. to any preference, priority or allocation order duly issued by the Government;
  2. to unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and
  3. to any delays of subcontractors or suppliers occasioned by any of the causes

SECTION 00800  
SUPPLEMENTARY CONDITIONS

specified in subsections C.1. and C.2., above;

- D. Provided, further, that the Contractor shall, within thirty (30) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the Contract, notify the Owner, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.”

**ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS;  
HAZARDOUS ENVIRONMENTAL CONDITIONS**

- 5.01 A. Delete entirely and replace with the following:

“Owner shall furnish portions of the Site as indicated in the Contract Documents. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of said furnished portions of the Site with which Contractor must comply in performing the Work.”

- 5.01 B Delete entirely.

- 5.01 C Delete entirely and replace with the following:

“Owner shall provide land, as indicated in the Contract Documents, for temporary construction facilities, stockpiling and storage of materials, and equipment and access thereto. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment, that are required in excess of the lands provided by Owner.”

- 5.03 A Delete entirely and replace with the following:

A. *Reports and Drawings:* The Contract Documents identify:

1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents. Engineer has relied upon the data obtained from subsurface investigations made at the site in the form of test borings. Such data is in the form of boring logs which are included in the Appendix to the Project Manual. The locations of the test borings are indicated on the Drawings. Such logs and samples are not part of the Contract Documents.
2. In the preparation of Drawings and Specifications, the Engineer has relied upon the following reports and tests of subsurface physical conditions at the site. Copies of these reports are included in the appendix to the Project Manual. Such reports are not part of the Contract Documents.

- 5.03 B Delete entirely, keeping subparagraphs. Replace 5.03 B with the following:

*“Reliance by Contractor on Technical Data Authorized:* The Owner makes no warranties as to the accuracy or completeness of such material and such reports and drawings are not Contract Documents. Contractor may not rely upon or make any claim against Owner or Engineer, or any of

SECTION 00800  
SUPPLEMENTARY CONDITIONS

their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:”

5.03 F Add the following new subsection:

“Contractor shall provide copies of all policies as well as evidence of its insurance coverage on the ACORD certificate of insurance form and shall include the following statement in its entirety in the section of the form entitled “Description of Operations/Locations/Vehicles/Special Items”.

The Town of \_\_\_\_\_ and \_\_\_\_\_, and their officers, directors, partners, employees and other consultants and subcontractors are named as additional insureds with respect to the insured’s Commercial General Liability and Automobile Liability Insurance Policies. All insurance is primary for all claims covered thereby. Commercial General Liability Insurance includes contractual liability coverage.”

5.04 A Add the following to the end of the paragraph:

“Adjustments resulting from subsurface or latent physical conditions will be in accordance with Massachusetts General Law Chapter 30, Section 39N.”

5.04 C Delete entirely.

5.05 D Delete entirely.

5.05 E.1 (1) Delete the word “shall” and replace it with “may”  
(2) Delete the words “or was not shown or indicated with reasonable accuracy,”

5.06 A Delete the words “Supplementary Conditions” and replace them with “Contract Documents”

5.06 B Delete opening paragraph entirely and replace with the following:

*“Reliance by Contractor on Technical Data Authorized:* The Owner makes no warranties as to the accuracy or completeness of such material and such reports and drawings are not Contract Documents. Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:”

**ARTICLE 6 – BONDS AND INSURANCE**

6.01 A Delete entirely and replace with the following:

“The Contractor shall furnish a performance bond for the full amount of the Contract, and also a labor and materials payment bond for the full amount of the Contract, the form of which bonds are set forth in the Contract Documents, each of a surety company qualified to do business under state laws and satisfactory to the Owner, the premiums for which are to be included in the Contract Price and paid by the Contractor. These bonds shall (a) guarantee the faithful performance by the Contractor of all its obligations under this contract and (b) constitute the security required by Massachusetts General Laws Chapter 149, Section 29 and Chapter 30, Section 39A, as amended, for payment by the Contractor or its subcontractors used or employed in connection with the contract.



SECTION 00800  
SUPPLEMENTARY CONDITIONS

Each bond shall incorporate by reference the terms of this contract. These bonds shall remain in effect for the entire guarantee period for each phase of the work, which shall commence on the date of Substantial Completion, as defined in Paragraph 8.1.3. The Surety Company providing the bonds shall have a rating of A or better within the Best Key Rating Guide and be licensed by the Massachusetts Division of Insurance. The Contractor shall pay the premiums for such Bonds.”

- 6.01 B Delete entirely.
- 6.02 A (1) Delete “Owner and”  
(2) Delete “Supplementary Conditions” and replace with “Contract Documents”
- 6.02 B (1) Delete “Owner or”  
(2) Delete “Supplementary Conditions” and replace with “Contract Documents”
- 6.02 C (1) Delete “, in the Supplementary Conditions”  
(2) after the word “Contract” add “Documents”  
(3) after “certificates of insurance” add “and copies of policies”
- 6.02 D Delete entirely.
- 6.02 E (1) Delete each instance of “or Contractor”  
(2) Delete each instance of “other party’s” and replace with “Contractor’s”
- 6.02 F Delete entirely and replace with the following:  
  
“If Contractor does not purchase or maintain all of the insurance required of it by the Contract, the Contractor shall notify the Owner in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.”
- 6.02 H Delete entirely and replace with the following:  
  
“Without prejudice to any other right or remedy, if the Contractor has failed to obtain required insurance, the Owner may elect to obtain equivalent insurance to protect such its interests at the expense of the Contractor, and the Contract Price shall be adjusted accordingly.”
- 6.02 I Delete entirely.
- 6.03 Add the following after the header:  
  
“The limits of liability for the insurance required by paragraph 5.04A of the General Conditions shall provide coverage for not less than the following amounts or greater where required by law:
- 6.03 A After “employer’s liability insurance” add “in minimum amounts required by law”
- 6.03 B After “general liability insurance” add “in minimum amounts of \$1,000,000 per occurrence, \$3,000,000 aggregate”

- 6.03 D After “occurrence basis” add “and shall provide a minimum insurance limit of \$1,000,000 CSL”
- 6.03 E Add the following new sentence to the end of the paragraph:  
“Such umbrella liability policy shall be in a minimum amount of \$2,000,000.”
- 6.03 G (1) Delete the words “Supplementary Conditions” and replace with “Contract Documents”  
(2) Before the word “members” add the word “board”
- 6.04 Delete entirely, including all subsections.
- 6.05 Delete entirely, including all subsections.
- 6.06 Delete entirely, including all subsections.
- 6.07 Delete entirely, including all subsections.

**ARTICLE 7 – CONTRACTOR’S RESPONSIBILITIES**

- 7.00 Add the following new section:  
*“General/Review of Contract Documents and Field Conditions by Contractor”*
- 7.00 A Add the following new subsection:  
*“Contractor’s Financial Condition.* The Contractor represents and warrants that its financial condition is sound and that the Contractor is capable of performing the work required pursuant to the Contract Documents. Upon request by the Owner, the Contractor shall make available to the Owner such audited and unaudited financial statements of the Contractor as the Owner may reasonably request. The Contractor shall promptly advise the Owner of any occurrence, event, fact, or other matter that has had, will have, or might reasonably be predicted to have a material adverse effect upon the financial condition of the Contractor.”
- 7.00 B Add the following new subsection:  
“Since the Contract Documents are complementary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly to the Engineer, in writing, as a request for information. Before starting the work and at frequent intervals during the progress thereof, the Contractor shall carefully study and compare the contract documents with each other and with the information furnished by the Owner and shall at once report to the Engineer any error, inconsistency or omission the Contractor may discover. Any necessary change will be ordered as provided in Article 11, subject to the requirements of Article 3 and other provisions of the Contract Documents. If the Contractor proceeds with the Work without such notice, the Engineer, having discovered such

errors, inconsistencies or omissions, or if by reasonable study of the Contract Documents he could be discovered such, the Contractor shall bear all cost arising therefrom.”

7.00 C Add the following new subsection:

“Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Engineer, in writing, but it is recognized that the Contractor’s review is made in the Contractor’s capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Engineer, in writing.”

7.00 D Add the following new subsection:

“If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Engineer in response to the Contractor’s notices or requests for information pursuant to Sections 7.00.B. and 7.00.C., the Contractor shall make Claims as provided in Article 12. If the Contractor fails to perform the obligations of Sections 7.00.B. and 7.00.C., the Contractor shall pay such costs and damages to the Owner that would have been avoided if the Contractor had performed such obligations.

7.00 E Add the following new subsection:

“The Contractor shall reimburse the Owner for costs incurred by the Engineer for design and construction administration services which are caused by the Contractor’s inefficient or otherwise faulty administration or execution of its Work. These may include but are not limited to the cost of the Engineer to perform:”

7.00 E.1. Add the following new subsection:

“Repeated review of the Contractor’s resubmittals, substantially out of sequence from the submittal schedule provided by the Contractor and agreed to by the Engineer.”

7.00 E.2. Add the following new subsection:

“An extensive number of responses to the Contractor’s requests for information where such information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.”

7.00 E.3. Add the following new subsection:

“An extensive number of Change Orders and Work Change Directives requiring evaluation of proposals and the preparation or revision of Instruments of Service and not otherwise caused by the design defects of the Engineer.”

7.00 E.4. Add the following new subsection:

“Consultation regarding replacement of Work resulting from fire or other cause during construction.”

- 7.00 E.5. Add the following new subsection:  
“Evaluation of an extensive number of claims not otherwise caused by design defect.”
- 7.00 E.6. Add the following new subsection:  
“Evaluation of substitutions proposed by the Contractor and making subsequent revisions to Instruments of Services resulting therefrom.”
- 7.00 E.7. Add the following new subsection:  
“Preparation of design and documentation for alternate bid or proposal requests proposed by the Contractor.”
- 7.00 E.8. Add the following new subsection:  
“Contract administration services provided sixty (60) days or more after Substantial Completion.”
- 7.00 F Add the following new subsection:  
“*Preconstruction inspection.* The Contractor shall notify the Owner and Engineer in writing of any existing damage to the property or any unsafe conditions at the site prior to commencing the Work.”
- 7.00 G Add the following new subsection:  
“The Contractor shall give the Engineer timely notice of any additional design drawings, specifications or instructions required to define the Work in greater detail, or to permit the proper progress of the Work.”
- 7.00 H Add the following new subsection:  
“The Contractor shall not proceed with any work not clearly and consistently defined in detail in the Contract Documents, but shall request additional drawings or instructions from the Engineer as provided in Subparagraph 7.00.D. If the General Contractor proceeds with such work without obtaining further drawings or instructions, he shall correct work incorrectly done at his own expense.”
- 7.01 A (1) Delete third sentence.  
(2) Add the following new third sentence:  
“If the Contract Documents give specific instructions concerning constructions means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and the Engineer. All loss, damage, or liability, or cost of correcting defective work arising from the employment of any construction means, methods, techniques, sequences or procedures shall be born by the Contractor notwithstanding that such construction means, methods, techniques, sequences or procedures are referred to, indicated or implied by the

SECTION 00800  
SUPPLEMENTARY CONDITIONS

Contract Documents, unless the Contractor has given timely notice to the Owner and the Engineer in writing that such means, methods, techniques, sequences or procedures are not safe or suitable, and the Owner has then instructed the Contractor in writing to proceed at the Owner's risk."

7.01 B Delete entirely and insert the following in its place:

"At the site of the Work the Contractor shall employ a full-time construction superintendent or foreman who shall have full authority to act for the Contractor. It is understood that such representative shall be acceptable to the Engineer and shall be one who will be continued in the capacity for the particular job involved unless the representative ceases to be on the Contractor's payroll. If at any time during the Work the representative is deemed by the Engineer to be no longer acceptable, the representative shall be promptly replaced by the Contractor. All communications to the superintendent shall be as binding as if given to the Contractor."

7.02 A Add the following to the end of the subsection:

"The Contractor shall be responsible to the Owner for acts and omissions of all entities or persons performing or supplying the Work."

7.02 A.1. Add the following new subsection:

"The Contractor shall neither permit nor suffer smoking where it creates a hazard, nor the introduction or use of spirituous or intoxicating liquors upon or about the works embraced in this Contract or upon any of the ground occupied by him."

7.02 C Add the following new subsection:

"This Agreement is subject to the applicable provisions of the Contract Work Hours and Safety Standards Act, Public Law 87-581, 87th Congress. No Contractor or Subcontractor contracting for any part of the Work shall require or permit any laborer or mechanic to be employed on the Work in excess of forty hours in any work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times that person's basic rate of pay for all hours worked in excess of forty hours in such work week."

7.02 D Add the following new subsection:

"The Contractor shall employ workers competent to perform the work required by the contract and, upon written request of the Owner, remove and replace workers whom the Owner deems to be disorderly, careless or incompetent, or to be employed in violation of the terms of the Contract Documents, at no increase in the Contract Price or the Contract Time."

7.02 E Add the following new subsection:

"Contractor and Subcontractors shall, insofar as practicable, give preference in the hiring of workers for the Project to qualified local residents with first preference being given to citizens of the United States who have served in the armed forces of the United States and have been honorably discharged therefrom or released from active duty therein."

7.02 F Add the following new subsection:

SECTION 00800  
SUPPLEMENTARY CONDITIONS

“Contractor and all subcontractors shall comply with the Massachusetts Prevailing Wage law as contained in M.G.L. c.149 §§26-27 which are included in Part II of these Supplementary Conditions.”

7.03 A.1 Add the following new subsection:

“*Sanitary Facilities.* The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements of the appropriate authorities. The maintenance of all sanitary facilities shall be subject to the laws of the Commonwealth and to the rules and regulations of the State Board of Health and the Board of Health for the Town.”

7.03 D Add the following new subsection:

“The Contractor shall be solely responsible for determining that all materials furnished for the work meet all of the requirements of the Contract Documents. The Engineer may require the Contractor to produce reasonable evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of the Engineer, would lead to a reasonable certainty that any material used or proposed to be used, and the work meets the requirements of the Contract Documents all such data shall be furnished at the Contractor’s expense. This provision shall not require the Contractor to pay for periodic testing of different batches of the same material, unless such testing is specifically required by the Contract Documents to be performed at the Contractor’s expense.”

7.04 A Delete the second sentence and insert the following in its place:

“Unless the specification indicates that a proprietary item is called for, other items of material or equipment or material or equipment of other suppliers may be submitted to Engineer for review under the circumstances described below.”

7.04 F Add the following to the end of the paragraph:

“Any additional costs, or any loss or damage arising from the substitution of any material or any method of those originally specified shall be born by the Contractor, notwithstanding approval or acceptance of such substitution by the Owner or the Engineer, unless such substitution was made at the written request or direction of the Owner or Engineer.”

7.06 A Delete entirely and substitute the following therefor:

“Contractor shall not employ any Subcontractor, Supplier or other person or organization, (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, against whom Owner may have reasonable objection. Acceptance of any Subcontractor, other person or organization by Owner shall not constitute a waiver of any right of Owner to reject defective Work. Contractor shall not be required to employ any Subcontractor, other person or organization against whom Contractor has reasonable objection.”

6.06 B Delete entirely.

7.06 C Add the following sentence after the words “own acts and omissions.”:

SECTION 00800  
SUPPLEMENTARY CONDITIONS

“Contractor shall make payments to Subcontractors in accordance with Massachusetts General Law c.30, §39F which is included in PART II of these Supplementary Conditions.”

7.06 E Add the following sentence to the end of the paragraph:

“Owner or Engineer may furnish to any such Subcontractor, Supplier or other person or organization, to the extent practicable, information about amounts paid on their behalf to Contractor in accordance with Contractor's Applications for Payment.”

7.06 F Delete entirely.

7.07 B Delete entirely.

7.09 Delete entirely and substitute the following therefor:

- A. The Owner is exempt from payment of certain Sales and Use taxes applicable in the Commonwealth of Massachusetts. At the Contractor's request, Tax Exemption Certificates will be furnished by the Owner to the Contractor with respect to such tax exempt articles as may be required under this Contract.
- B. The Contractor shall not pay, and the Town shall not reimburse or pay the Contractor or any other party either directly or indirectly for any tax for which an exemption is provided under law.

7.10 C Delete entirely and substitute the following therefor:

“The Contractor shall keep itself fully informed of and comply with all existing and future federal, state and municipal laws and regulations and all orders and decrees of any governmental bodies or tribunals (hereinafter also referred to as ‘laws’) having jurisdiction in any manner which affect this contract or construction, including but not limited to such laws affecting those engaged or employed in the work, the materials used in the work or in any way affecting the conduct of the work. If any clause in this contract does not conform to such law, then such clause shall be void and the law operative shall be inserted in lieu thereof. If any discrepancy or inconsistency is discovered in the specifications, drawings, or contract documents in violation of the law, the Contractor shall forthwith report the same in writing to the Town. The Contractor shall cause its employees, agents and subcontractors to also observe and comply with all such laws. It shall protect and indemnify the Town and its officials, employees and duly appointed agents against any claim or liability arising from or based on any violation, whether by the Contractor or its officials, employees or subcontractors, of any such law.”

7.10 D Add the following new section:

“The Contractor shall comply with all applicable provisions Chapter 30, Section 39R of the Massachusetts General Laws regarding, Contractor's records.”

7.10 E Add the following new section:

“Compliance with Tax Laws. By executing the Contract Documents, the Contractor certifies under the pains and penalties of perjury pursuant to Chapter 62C, Section 49A(b) of the Massachusetts General Laws that the Contractor has complied with all of the laws of the Commonwealth of

Massachusetts relating to taxes.”

7.15 A Delete last sentence and insert the following in its place:

“If Engineer determines that the incident giving rise to the emergency action was not the responsibility of the Contractor and that a change in the Contract Document is required because of the action taken by the Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.”

7.17 A Delete “all Work will be in accordance with the Contract Documents and will not be defective.” and substitute the following therefor:

“the materials and equipments furnished under the contract will be new and of recent manufacture and that all work will be of good quality, free from faults and defect, and in conformance with the Contract Documents.”

7.17 B Delete entirely and insert the following in its place:

“The Contractor guarantees that the Work and Services to be performed under the Contract, and all workmanship, materials and equipment performed, furnished, used or installed in the construction of the same shall be free from defects and flaws, and shall be performed and furnished in strict accordance with the Drawings, Specifications, and other Contract Documents, that the strength of all parts of all manufactured equipment shall be adequate and as specified and that the performance test requirements of the Contract shall be fulfilled. This guarantee shall be for a period of one year from and after the date of completion and acceptance of the Work as stated in the final estimate. If part of the Work is accepted in accordance with that subsection of this AGREEMENT titled “Partial Acceptance,” the guarantee for that part of the Work shall be for a period of one year from the date fixed for such acceptance.

1. If at any time within the said period of guarantee any part of the Work requires repairing, correction or replacement, the Owner may notify the Contractor in writing to make the required repairs, correction or replacements. If the Contractor neglects to commence making such repairs, corrections or replacements to the satisfaction of the Owner within seven (7) days from the date of receipt of such notice, or having commenced fails to prosecute such Work with diligence, the Owner may employ other persons to make said repairs, correction or replacements, and charge the costs, including compensation for additional professional services, to the Contractor.

2. The Contractor’s guarantee under this clause is in addition to the Contractor’s express or implied warranties under this Agreement and State law and in no way diminish any other rights that the Owner may have against the Contractor.”

7.17 D Add the following new subsection:

“Materials, supplies, or equipment to be incorporated into the Work shall not be purchased by the Contractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. All materials are to be of the best and finest quality of their several kinds.”

7.17 E Add the following new subsection:

“The Contractor guarantees and warrants to the Owner that all labor furnished under this Contract



will be competent to perform the tasks undertaken that the product of such labor will yield only first-class results.”

7.17 F Add the following new subsection:

“The warranty provided in this Section 7.17 shall be in addition to and not in limitation of any warranty required by the Contract Documents or otherwise described by law.”

7.17 G Add the following new subsection:

“The Contractor shall secure and deliver to the Engineer, no later than the date claimed by the Contractor as the date of Substantial Completion, all special warranties required by the Contract Documents. Delivery by the Contractor shall constitute the Contractor’s guarantee to the Owner that the warranty will be performed in accordance with its terms and conditions.”

7.17 H Add the following new subsection:

“All warranties and guarantees shall commence on the date of completion and acceptance of the Work as stated in the final estimate. Warranties and guarantees shall extend for a minimum of one year. Notwithstanding the forgoing, any special warranties, as defined by the Engineer, required by the Contract Documents or manufacturers’ standard warranties, extending longer than one year, shall remain in effect for the full warranty period.”

7.17 I Add the following new subsection:

“Manufacturer’s Guaranty/Warranty

1. The Contractor shall obtain the following guaranty/warranty from the manufacturer of all major pieces of equipment furnished and installed on this Project. Such guaranty/warranty shall be for the benefit of Owner and be furnished in writing by the manufacturer. The Contractor’s and manufacturer’s obligations under this provision are in addition to other express or implied warranties under the Contract Documents and under the law and in no way diminish any other right that the Owner may have against the Contractor or manufacturer for faulty material, equipment or work. The warranty period shall not be interpreted as a limitation on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.
2. The manufacturer warrants and guarantees for a period of one year from the date of Substantial Completion, or such longer period that may be specified in the Contract Documents, that all materials and equipment furnished and installed shall be free from flaws, defects in material and workmanship and shall be in conformance with the Contract Documents.
3. All guarantees and warranties required in the various Sections of the Specifications which originate with a Subcontractor or Manufacturer must be delivered to the Owner before final payment to the Contractor may be made for the amount of that sub trade or for the phase of work to which the guarantee or warranty relates. The failure to deliver a required guarantee or warranty shall be held to constitute a failure of the Subcontractor to fully complete his work in accordance with the Contract Documents. The Contractor’s obligation to correct work is in addition to, and not in substitution of, such guarantees or warranties as may be required in the various Sections of the Specifications.”

7.18 A Delete entirely and insert the following in its place:

**SECTION 00800  
SUPPLEMENTARY CONDITIONS**

“To the fullest extent permitted by law, the Contractor shall defend, indemnify in whole or in part, defend, pay-on-behalf of and hold harmless the Owner, the Engineer, Engineer’s consultants, and the agents and employees of each from and against all claims, damages, losses and expenses, including but not limited to attorneys’ fees and loss of use caused by the acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 7.17 A”

7.18 B Move the existing subsection 7.18 B to subsection 7.18 D and add the following new subsection 7.18 B:

“The Contractor shall bear all losses resulting from the use or storage of explosives and highly inflammable materials and shall indemnify, defend and save harmless the Town and all of its officers, agents, and employees from all suits, damages, claims, liabilities or judgments for bodily injuries or death to any person and for property damage or damage destruction arising out of the use or storage of explosives and highly inflammable materials.”

7.18 C Delete entirely and insert the following in its place:

“The Contractor further covenants to indemnify, defend and hold harmless the Town, its officers, agents, and employees from and against each and every demand, claim, judgment or liability for or on account of the use of any patented invention, article or appliance included in the materials and equipment agreed to be furnished, supplied or used under this contract.”

7.19 E Delete the words “specified by Owner or Engineer” and replace with “contained in the Contract Documents.”

**ARTICLE 8 – OTHER WORK AT THE SITE**

8.03 A Delete entirely.

**ARTICLE 9 – OWNER’S RESPONSIBILITIES**

9.01 Delete in its entirety.

9.02 Delete “, provided Contractor makes no reasonable objection to the replacement engineer”

9.06 Delete in its entirety.

**ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION**

10.01 B Add the following new paragraph:

Nothing contained in the Contract Documents shall be construed to create a contractual relationship of any kind (1) between the Engineer and Contractor; (2) between the Owner and a Subcontractor; (3) between the Owner and Engineer; or between (4) any persons or entities other than the Owner

and Contractor. The Engineer shall, however, be entitled to performance and enforcement of obligations under the Contract Documents intended to facilitate performance of the Engineer's duties."

10.03 B Add the following new paragraph:

"Engineer will conduct periodic visits to observe the performance of Work. Engineer will not furnish a Resident Project Representative. Owner will designate an agent to represent Owner at the Site who is not Engineer's agent or employee. The duties and responsibilities of the agent will be as enumerated in the agent's agreement with Owner, a copy of which will be furnished to Contractor upon written request."

10.04 A Add the following language at the end of paragraph:

"The Engineer's interpretation will be made in accordance with the requirements of Massachusetts General Law Chapter 30, Section 39P."

#### **ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK**

11.04 C.2.a. Delete "15 percent" and replace with "10 percent"

11.04 C.2.c. Delete "15 percent" and replace with "10 percent"

11.05 B.1 Add the following new subsection:

"The Contractor's failure to provide written notice in strict accordance with this paragraph will result in the Contractor's having waived its Claim."

11.05 C Add the following new subsection:

"Time limits stated in the Contract Documents are of the essence. The Contractor and its Subcontractors shall perform and coordinate all Work without delay. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work."

#### **ARTICLE 12 – CLAIMS**

12.01 D.1 Delete entirely and replace with the following:

"At any time after initiation of a Claim, Owner may demand that Owner and Contractor submit to mediation of the underlying dispute. Such demand to mediate shall stay the Claim submittal and response process."

12.01 D.2 Delete entirely.

#### **ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

13.1 B.5.a. Delete entirely.

13.1 B.5.d. Delete entirely.

13.02 Delete entirely, including subsections.

**ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

14.01 B Add the following new subsection:

“If Owner stops Work under Paragraph 14.01A. Contractor shall not be entitled to any extension of Contract Time or increase in Contract Price.”

14.02 A Delete entirely and substitute the following therefor:

“All material and workmanship (if not otherwise designated by the Contract Documents) shall be subject to inspection, examination, and test by the Engineer at any and all times during manufacture and/or construction and at any and all places where such manufacture and/or construction are carried on. The Engineer shall have the right to reject defective material and workmanship or require its correction. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests and shall cooperate with inspection and testing personnel to facilitate required inspections and tests. If the Contractor fails to proceed at once with the replacement of rejected material and/or the correction of defective workmanship, the Owner may by contract or otherwise replace such material and/or correct such workmanship and charge the cost to the Contractor, or may terminate the right of the Contractor to proceed, the Contractor and Surety being liable for any damage to the same extent as provided.”

14.02 F Delete entirely and substitute the following therefor:

“The Contractor shall keep the Engineer informed of the progress of his work. No work shall be closed or covered until it has been duly inspected and approved. Should uninspected work be covered, the Contractor shall, at his own expense, uncover all such work so that it can be properly inspected and after such inspection, he shall properly repair and replace all work interfered with.”

**ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

15.01 B.2.a. Add the following new subsection:

“Each Application for Payment or periodic estimate requesting payment shall be accompanied by a certificate signed by each Subcontractor under pains and penalties of perjury stating that the Subcontractor has been paid all amounts due the Subcontractor on the basis of the previous periodic payment to the Contractor, or else stating the amount not so paid and the reason for the discrepancy. In the event of any such discrepancy, the Contractor shall furnish the Contractor’s own written explanation to the Owner through the Engineer. Such waiver or certificate shall be in a form acceptable to the Owner.”

15.01 C Add the following new subsections Subsection C and move the existing subsections down:

“The Contractor, his Subcontractors and Sub-subcontractors shall obtain prior written approval from the Owner through the Engineer for permission to store materials to be incorporated in the Work, for

SECTION 00800  
SUPPLEMENTARY CONDITIONS

which Progress Payments will be requested, at off-site locations. In no case shall stored materials or equipment, whether stored at the site or at some other location, be considered payment unless, in the sole judgment of the Owner, the materials or equipment are ready for and actually scheduled for prompt use. Written request for payment of stored material must be made thirty (30) days in advance of the due date for the Application for Payment. Any and all charges for storage, including insurance, shall be borne solely by the Contractor. Before approval, the Owner will require proper proof of insurance and a letter in which is furnished: (a) the name of the Contractor and/or the Subcontractor or Sub-subcontractor leasing the storage area; (b) the location of such leased space; (c) the leased area: the entire premises or certain areas of a warehouse given the number of floors or portions thereof; (d) the date on which the material is first stored; and (e) the value of the material stored.

1. The Contractor, his Subcontractors and Sub-subcontractors shall notify the Engineer and the Owner to inspect, at least once each month, the materials being stored at any location.
2. The Contractor, his Subcontractors and Sub-subcontractors shall mark each sealed carton with the name of the Project and the Engineer.
3. A perpetual inventory shall be maintained for all materials held in storage for which payment has been requested.
4. Payment for materials stored off site shall be at the sole discretion of the Owner. Any additional costs to the Owner resulting from storage of material off site for which payment is requested, such as, but not limited to, travel expenses and time for inspectors, shall be charged to, and paid by, the Contractor.
5. Contractor shall furnish evidence that payment received on the basis of materials and equipment not incorporated and suitably stored, has in fact been paid to the respective supplier(s) within sixty days of payment by Owner. Failure to provide such evidence of payment may result in the withdrawal of previous approval(s) and removal of the cost of related materials and equipment from the next submitted Application for Payment.”

15.01 E Delete existing 15.01 D and replace with the following new subsection 15.01 E:

*“Payment Becomes Due:*

- A. Payment to the Contractor shall be made by the Town in accordance with Massachusetts General Laws Chapter 30, Section 39G, which is incorporated by reference herein. The payment shall be in full less 5% retainage for furnishing all materials, supplies, labor, services, supervision, tools and equipment and use thereof. Acceptance of periodic payments by the Contractor shall constitute a waiver of claims known or knowable at the time by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of periodic payment.
  - a. Until Substantial Completion of the entire project, the Owner will pay ninety-five percent (95%) of the amount due the Contractor on account of progress payments. This retainage of five percent (5%), less any amount due from the Contractor for Liquidated Damages and applicable costs of the Engineer and Engineer’s Consultants, and less amounts based on the established value of punch list items and any other Owner claims or back-charges against the Contractor, will be paid within sixty-five (65) days of Substantial Completion in accordance with M.G.L. c.30, §39K.

15.01 F.1 Add the following new subsections 15.01 F.1.m-s.:

SECTION 00800  
SUPPLEMENTARY CONDITIONS

“m. third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

n. failure of the Contractor to make payments properly to Subcontractors for labor, materials or equipment;

o. reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;

p. damage to the Owner or another contractor;

q. reasonable evidence that the Work will not be completed within the Contract Time, and that the retainage currently held by the Owner would not be adequate to cover actual or liquidated damages for the anticipated delay;

r. failure to carry out the Work in accordance with the Contract Documents; or

s. failure of mechanical trade or electrical trade, or any other trade, subcontractor to comply with mandatory requirements for maintaining record drawings. The Contractor shall check record drawings each month. Written confirmation that the record drawings are current will be required by the Engineer before approval of the Contractor’s monthly payment requisition.”

15.01 F.2 Delete entirely and substitute the following therefor:

“If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor written notice (with a copy to Engineer) stating the reasons for such action and pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.”

15.01 F.3 Delete entirely

15.02 A Delete entirely and substitute the following therefor:

“Contractor warrants and guarantees that title to all work, material and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than at the time of Application for Payment free and clear of all liens. Contractor shall provide written transfer of title and a certified paid invoice provided by the supplier.”

15.02 B Add the following new subsection:

“Contractor shall defend, indemnify and save Owner and Engineer harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this Contract. Contractor shall at Owner’s request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If Contractor fails to do so, then Owner may, after having served written notice on the said Contractor either pay unpaid bills, of which Owner has written notice, direct, or withhold from the Contractor's unpaid compensation a sum of money

SECTION 00800  
SUPPLEMENTARY CONDITIONS

deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to Contractor shall be resumed, in accordance with the terms of this Contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon Owner to either Contractor or Contractor's Surety. In paying any unpaid bills of the Contractor, Owner shall be deemed the agent of Contractor and any payment so made by Owner shall be considered as payment made under the Contract by Owner to Contractor and Owner shall not be liable to Contractor for any such payment made in good faith."

15.03 A Add the following to the beginning of the subsection:

"The term "Substantial Completion" as used in this Contract shall mean the point at which as certified in writing by the Engineer, the entire Work is at a level of completion in strict compliance with this Contract such that the Owner or its designee can enjoy beneficial use and can use or operate it in all respects for its intended purpose and only minor items which can be corrected or completed without any material interference with the Owner's use of the Work remain to be corrected or completed. Partial use of the Project shall not result in the Project being deemed substantially complete, and such partial use shall not be evidence of substantial completion. The Contractor shall submit, prior to requesting Substantial Completion, written certification that the Project has been completed and is ready for final inspection. Prior to requesting Substantial Completion, the Contractor shall also submit the following: (1) Contractor's Affidavit of Payments for Debts and Claims (2) Contractor's Affidavit of Release of Liens (3) Consent of Surety to Final Payment; and (4) Maintenance Guarantee."

15.03 A.1 Add the following new subsection:

"Contractor shall submit, prior to requesting final inspection, written certification that: (1) Work has been completed in accordance with Contract Documents; and (2) the Project has been inspected for compliance with Contract Documents. If the Engineer does not consider the work finally complete, the Contractor will be notified, in writing, with the reasons stated. The Contractor will take immediate steps to correct the stated deficiencies and then submit a second written certification to the Engineer."

15.03 A.2 Add the following new subsection:

"Should the Engineer be required to reinspect the work because of failure of the Contractor to comply with the certification listed in 15.03.A.1., the Engineer will bill the Owner for all related cost incurred, such cost will be deducted from the Contractor's payment."

15.03 C Delete entirely and substitute the following therefor:

"If Owner, with the advice and recommendation of the Engineer, considers the Work or the designated portion thereof substantially complete, the Owner will determine the date of Substantial Completion and the Engineer will prepare a certificate of Substantial Completion reflecting such date of Substantial Completion that shall establish the responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment."

15.03 D Delete entirely.

SECTION 00800  
SUPPLEMENTARY CONDITIONS

15.04 A Delete “, subject to the following conditions:” and delete subsections 1 – 4 that immediately follow.

15.05 A.1 Add the following new subsection:

“Contractor shall submit, prior to requesting final inspection, written certification that: (1) Work has been completed in accordance with Contract Documents; and (2) the Project has been inspected for compliance with Contract Documents. If the Engineer does not consider the work finally complete, the Contractor will be notified, in writing, with the reasons stated. The Contractor will take immediate steps to correct the stated deficiencies and then submit a second written certification to the Engineer.”

15.05 A.2 Add the following new subsection:

“Should the Engineer be required to reinspect the work because of failure of the Contractor to comply with the certification listed in 15.05.A.1., the Engineer will bill the Owner for all related cost incurred, such cost will be deducted from the Contractor’s payment.”

15.06 A.1 After “opinion of” add the words “Owner and”

15.06 B.1 Delete entirely and substitute the following therefor:

“If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will indicate in writing Engineer's recommendation of payment and present the Application to Owner for payment. Thereupon Engineer will give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of paragraph 15.07. Otherwise, Engineer will return the Application to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application. If the Application and accompanying documentation are appropriate as to form and substance, Owner shall in accordance with the applicable Massachusetts General Law, pay Contractor the amount recommended by Engineer.”

15.06 C Delete entirely.

15.06 D Delete entirely.

15.08 A Delete entirely, including subsections, and substitute the following therefor:

“If within one year after the date of Final Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions: (i) correct such defective work, or, if it has been rejected by Owner, remove it from the site and replace it with work that is not defective, and (ii) satisfactorily correct or remove and replace any damage to other work or the work of others therefrom. If Contractor does not begin the repairs within ten (10) days of receipt of written notification and promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk, loss or damage, Owner may have the defective work corrected or the rejected work removed and replaced, and all claims, costs, losses and damages



caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.”

**ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION**

16.01 A Delete entirely and substitute the following therefor:

“Owner may order, at any time and without cause, suspension of the Work in accordance with Massachusetts General Law c.30, §39O.”

16.02 A.4 Delete the “.” and substitute the following therefor:

“,”

16.02 A.5 Add the following new paragraph:

“If Contractor abandons the Work, or sublets this Contract or any part thereof, without the previous written consent of Owner, or if the Contract or any claim thereunder shall be assigned by Contractor otherwise than as herein specified;”

16.02 A.6 Add the following new subsection:

“If the Contractor is adjudged a bankrupt, or if the Contractor makes a general assignment for the benefit of the Contractor’s creditors or if a receiver is appointed on account of the Contractor’s insolvency; or”

16.02 A.7 Add the following new subsection:

“Contractor fails to make prompt payment to the Subcontractors of for materials or labor.”

16.02 C Delete entirely.

16.02 E Add the following to the end of the final sentence:

“any claim for damages against the Contractor relating to the Contractor’s performance under this Contract shall survive any termination hereunder.”

16.03 A.1 Delete the following words:

“including fair and reasonable sums for overhead and profit on such Work;”

16.03 A.2 Delete the following words:

“plus fair and reasonable sums for overhead and profit on such expenses;”

16.03 A.3 Delete entirely.

16.03 C Add the following new subsection:

“The Contractor shall not be relieved of liability to the Owner by virtue of any termination of this Contract, and any claim for damages against the Contractor relating to the Contractor’s performance under this Contract shall survive any termination hereunder.”

15.04 A Delete entirely.

#### ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 B Delete entirely, including subsections, and insert the following in its place:

Decision of Engineer: Claims, including those alleging an error or omission by the Engineer shall be referred initially to the Engineer for decision as provided in Article 10.05. An initial decision by the Engineer shall be required as a condition precedent to mediation or litigation of all Claims between the Contractor and Owner arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Engineer with no decision having been rendered by the Engineer.

17.01 C Add the following new subsection:

“Claims, disputes or other matters in question between the parties to this Agreement arising out of or relating to this Agreement or breach thereof shall be subject to and decided by the Superior Court of Massachusetts in Middlesex County, if jurisdiction exists, and if jurisdiction does not exist in the Superior Court, said action shall be brought in the Frammingham District Court of Massachusetts. A claim, dispute or other matter may be submitted to mediation, in accordance with the provisions of the American Arbitration Association, at the sole discretion of the Owner.”

#### ARTICLE 18 – MISCELLANEOUS

18.09 A Add the following new subsection:

*“Assignment and Transfer of Contract.*

The Contractor shall not sell, transfer, assign by power of attorney or otherwise, sublet, or otherwise dispose of the work or any part thereof, without the previous written consent of the Town by its Contracting Officer. Nor shall the Contractor either legally or equitably assign any of the moneys payable under this Contract or any claim thereto unless by and with like written consent on the part of the Contracting Officer and the Town Treasurer.”

18.10 A Add the following new subsection:

*“Severability.*

If any provision of this Agreement shall be invalid or unenforceable to any extent or in any application, then the remainder of this Agreement and of such terms and conditions, except to such extent or in such application, shall not be affected thereby, and each and every term and condition of this Agreement shall be valid and enforced to the fullest extent and in the broadest application permitted by law”

SECTION 00800  
SUPPLEMENTARY CONDITIONS

18.11 A Add the following new subsection:

*“Dig Safe Laws.*

- A. The Contractor shall fully comply with the Dig Safe Laws.
- B. The Contractor shall at all times during the construction period protect the excavation, trenches, and building from damage from water caused by rain, springs, ground water, back-up for drains and sewer work that is in his contract, or from any source under his control. He shall provide and maintain pumps and other equipment, coffer dams, ditches and other protection required. He shall construct and maintain all necessary temporary drainage and do all pumping required to keep the excavation and the building areas free from water at all times.
- C. If, during construction, public or private property is damaged or destroyed as a result of Contractor’s neglect, the Contractor shall, at his own expense, restore such property to a condition similar or equal to that existing before such damage or injury was done by repairing, rebuilding or replacing it, or otherwise making good such damage or destruction in an acceptable manner.”

18.12 A Add the following new subsection:

*“Subject to Appropriation.*

The obligations of the Owner hereunder shall be subject to appropriation on a fiscal year basis. In the absence of appropriation, this agreement shall be terminated immediately without liability of the Owner for damages, lost profits, penalties, or other charges arising from early termination”

18.13 Add the following new paragraphs:

*“Conflict of Interest*

- A. Both the Town and the Contractor stipulate to the applicability of the State Conflict of Interest Law (General Laws Chapter 268A), and this contract expressly prohibits any activity which shall constitute a violation of that law. The Contractor shall be deemed to have investigated its applicability to the performance of this contract; and by executing the contract documents the Contractor certifies to the Town that neither it nor its agents, employees or subcontractors are thereby in violation of General Laws Chapter 268A.
- B. The Contractor warrants that it has complied with all provisions of law regarding the award of this contract and that it, or its employees, agents, officers, directors or trustees have not offered or attempted to offer anything of any value to any official or employee of the Town in connection with this Contract.
- C. The Contractor further warrants that no official or employee of the Town including unpaid members of Town boards and commissions, serves as an officer, director, trustee or employee of the Contractor, and that no official or employee of the Town has or will have a direct or indirect financial interest in this Contract.
- D. The Contractor shall not during the term of this Contract hire or employ on either a full-time or part-time basis any person or persons employed by the Town.

SECTION 00800  
SUPPLEMENTARY CONDITIONS

- E. Violation of this Article shall be a material breach of this contract and shall be grounds for immediate termination of this contract by the Town without regard to any enforcement activities undertaken or contemplated by any enforcement agency. Termination of this contract pursuant to this Article shall not waive any claims for damages the Town may have against the Contractor resulting from the Contractor's violation of the terms of this Article."

18.14 A Add the following new section entitled "Liability of Public Officials":

*"Liability of Public Officials.*

A. To the fullest extent permitted by law, no official, employee, agent, or representative of the Town of Reading shall be individually or personally liable on any obligation of the Town under this contract."

18.15 A Add the following new section entitled "Independent Contractor":

*"Independent Contractor.*

"A. The Contractor is not an employee or agent of the Town, but is an independent contractor."

18.16 A Add the following new section entitled "Certification of Non-Debarment or Suspension":

*"Certification of Non-Debarment or Suspension.*

A. By execution of this Contract, the Contractor, pursuant to Section 29F of Chapter 29 of the Massachusetts General Laws, certifies under the penalties of perjury that it is not presently debarred or suspended from doing public construction work in the Commonwealth pursuant to said section, or any applicable debarment or suspension provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder."

18225.01  
07/24

**SECTION 00850**  
**WAGE RATES**

PART 1 – GENERAL

1.01 WAGE RATES

- A. Minimum wage rates shall be in accordance with the Commonwealth of Massachusetts Department of Labor and Workforce Development.
- B. It shall be the bidder's responsibility to ensure that they have the latest issue with all the latest modifications. Attached is a copy of rates issued by the Massachusetts Department of Labor Minimum Wage Rates. The Contractor shall become thoroughly familiar therewith, and fully comply with all requirements.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION



MAURA HEALEY  
Governor

KIM DRISCOLL  
Lt. Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DEPARTMENT OF LABOR STANDARDS

Prevailing Wage Rates

As determined by the Director under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H

LAUREN JONES  
Secretary

MICHAEL FLANAGAN  
Director

**Awarding Authority:** Town of Hopkinton  
**Contract Number:** 24-03-005 **City/Town:** HOPKINTON  
**Description of Work:** Demolition of existing dam all and reconstruction.  
**Job Location:** Milford& Upton, MA

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. For multi-year CM AT RISK projects, the awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. The annual update requirement is not applicable to 27F "rental of equipment" contracts. **The updated wage schedule must be provided to all contractors, including general and sub-contractors, working on the construction project.**
- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the "Wage Request Number" on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or a sub-contractor.
- Apprentices working on the project are required to be registered with the Massachusetts Division of Apprentice Standards (DAS). Apprentices must keep their apprentice identification card on their persons during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **Any apprentice not registered with DAS regardless of whether they are registered with another federal, state, local, or private agency must be paid the journeyworker's rate.**
- Every contractor or subcontractor working on the construction project must submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee's name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. For a sample payroll reporting form go to <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Contractors must obtain the wage schedules from awarding authorities. Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and criminal penalties.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may file a complaint with the Fair Labor Division of the office of the Attorney General at (617) 727-3465.

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Construction</b>						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2024	\$39.95	\$15.07	\$18.67	\$0.00	\$73.69
	12/01/2024	\$39.95	\$15.07	\$20.17	\$0.00	\$75.19
	01/01/2025	\$39.95	\$15.57	\$20.17	\$0.00	\$75.69
	06/01/2025	\$40.95	\$15.57	\$20.17	\$0.00	\$76.69
	12/01/2025	\$40.95	\$15.57	\$21.78	\$0.00	\$78.30
	01/01/2026	\$40.95	\$16.17	\$21.78	\$0.00	\$78.90
	06/01/2026	\$41.95	\$16.17	\$21.78	\$0.00	\$79.90
	12/01/2026	\$41.95	\$16.17	\$23.52	\$0.00	\$81.64
	01/01/2027	\$41.95	\$16.77	\$23.52	\$0.00	\$82.24
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2024	\$40.02	\$15.07	\$18.67	\$0.00	\$73.76
	12/01/2024	\$40.02	\$15.07	\$20.17	\$0.00	\$75.26
	01/01/2025	\$40.02	\$15.57	\$20.17	\$0.00	\$75.76
	06/01/2025	\$41.02	\$15.57	\$20.17	\$0.00	\$76.76
	12/01/2025	\$41.02	\$15.57	\$21.78	\$0.00	\$78.37
	01/01/2026	\$41.02	\$16.17	\$21.78	\$0.00	\$78.97
	06/01/2026	\$42.02	\$16.17	\$21.78	\$0.00	\$79.97
	12/01/2026	\$42.02	\$16.17	\$23.52	\$0.00	\$81.71
	01/01/2027	\$42.02	\$16.77	\$23.52	\$0.00	\$82.31
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2024	\$40.14	\$15.07	\$18.67	\$0.00	\$73.88
	12/01/2024	\$40.14	\$15.07	\$20.17	\$0.00	\$75.38
	01/01/2025	\$40.14	\$15.57	\$20.17	\$0.00	\$75.88
	06/01/2025	\$41.14	\$15.57	\$20.17	\$0.00	\$76.88
	12/01/2025	\$41.14	\$15.57	\$21.78	\$0.00	\$78.49
	01/01/2026	\$41.14	\$16.17	\$21.78	\$0.00	\$79.09
	06/01/2026	\$42.14	\$16.17	\$21.78	\$0.00	\$80.09
	12/01/2026	\$42.14	\$16.17	\$23.52	\$0.00	\$81.83
	01/01/2027	\$42.14	\$16.77	\$23.52	\$0.00	\$82.43
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2024	\$39.28	\$9.65	\$17.80	\$0.00	\$66.73
	12/01/2024	\$40.61	\$9.65	\$17.80	\$0.00	\$68.06
	06/01/2025	\$42.00	\$9.65	\$17.80	\$0.00	\$69.45
	12/01/2025	\$43.38	\$9.65	\$17.80	\$0.00	\$70.83
	06/01/2026	\$44.82	\$9.65	\$17.80	\$0.00	\$72.27
	12/01/2026	\$46.26	\$9.65	\$17.80	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT &amp; FROST INSULATORS LOCAL 6 (BOSTON)</i>	06/01/2024	\$41.80	\$14.50	\$11.05	\$0.00	\$67.35
	12/01/2024	\$42.80	\$14.50	\$11.05	\$0.00	\$68.35
	06/01/2025	\$43.80	\$14.50	\$11.05	\$0.00	\$69.35
	12/01/2025	\$44.80	\$14.50	\$11.05	\$0.00	\$70.35

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2024	\$38.78	\$9.65	\$17.80	\$0.00	\$66.23
	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$56.03	\$15.30	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.48	\$15.30	\$16.40	\$0.00	\$89.18
	06/01/2025	\$58.78	\$15.30	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.23	\$15.30	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.53	\$15.30	\$16.40	\$0.00	\$93.23
	12/01/2026	\$62.98	\$15.30	\$16.40	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$56.03	\$15.30	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.48	\$15.30	\$16.40	\$0.00	\$89.18
	06/01/2025	\$58.78	\$15.30	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.23	\$15.30	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.53	\$15.30	\$16.40	\$0.00	\$93.23
	12/01/2026	\$62.98	\$15.30	\$16.40	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2024	\$39.28	\$9.65	\$17.80	\$0.00	\$66.73
	12/01/2024	\$40.61	\$9.65	\$17.80	\$0.00	\$68.06
	06/01/2025	\$42.00	\$9.65	\$17.80	\$0.00	\$69.45
	12/01/2025	\$43.38	\$9.65	\$17.80	\$0.00	\$70.83
	06/01/2026	\$44.82	\$9.65	\$17.80	\$0.00	\$72.27
	12/01/2026	\$46.26	\$9.65	\$17.80	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2024	\$48.12	\$7.07	\$20.60	\$0.00	\$75.79



**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - BOILERMAKER - Local 29**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$31.28	\$7.07	\$13.22	\$0.00	\$51.57
2	65	\$31.28	\$7.07	\$13.22	\$0.00	\$51.57
3	70	\$33.68	\$7.07	\$14.23	\$0.00	\$54.98
4	75	\$36.09	\$7.07	\$15.24	\$0.00	\$58.40
5	80	\$38.50	\$7.07	\$16.25	\$0.00	\$61.82
6	85	\$40.90	\$7.07	\$17.28	\$0.00	\$65.25
7	90	\$43.31	\$7.07	\$18.28	\$0.00	\$68.66
8	95	\$45.71	\$7.07	\$19.32	\$0.00	\$72.10

**Notes:**

**Apprentice to Journeyworker Ratio:1:4**

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	02/01/2024	\$60.26	\$11.49	\$22.90	\$0.00	\$94.65
BRICKLAYERS LOCAL 3 (LOWELL)	08/01/2024	\$62.36	\$11.49	\$22.90	\$0.00	\$96.75
	02/01/2025	\$63.66	\$11.49	\$22.90	\$0.00	\$98.05
	08/01/2025	\$65.81	\$11.49	\$22.90	\$0.00	\$100.20
	02/01/2026	\$67.16	\$11.49	\$22.90	\$0.00	\$101.55
	08/01/2026	\$69.36	\$11.49	\$22.90	\$0.00	\$103.75
	02/01/2027	\$70.76	\$11.49	\$22.90	\$0.00	\$105.15

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Lowell**

**Effective Date - 02/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.13	\$11.49	\$22.90	\$0.00	\$64.52
2	60	\$36.16	\$11.49	\$22.90	\$0.00	\$70.55
3	70	\$42.18	\$11.49	\$22.90	\$0.00	\$76.57
4	80	\$48.21	\$11.49	\$22.90	\$0.00	\$82.60
5	90	\$54.23	\$11.49	\$22.90	\$0.00	\$88.62

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.18	\$11.49	\$22.90	\$0.00	\$65.57
2	60	\$37.42	\$11.49	\$22.90	\$0.00	\$71.81
3	70	\$43.65	\$11.49	\$22.90	\$0.00	\$78.04
4	80	\$49.89	\$11.49	\$22.90	\$0.00	\$84.28
5	90	\$56.12	\$11.49	\$22.90	\$0.00	\$90.51

**Notes:**

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**Apprentice to Journeyworker Ratio:1:5**

<b>BULLDOZER/GRADER/SCRAPER</b>	06/01/2024	\$55.41	\$15.30	\$16.40	\$0.00	\$87.11
<i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.85	\$15.30	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.13	\$15.30	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.57	\$15.30	\$16.40	\$0.00	\$91.27
	06/01/2026	\$60.85	\$15.30	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.29	\$15.30	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>CAISSON &amp; UNDERPINNING BOTTOM MAN</b>	06/01/2024	\$46.63	\$9.65	\$18.22	\$0.00	\$74.50
<i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$48.10	\$9.65	\$18.22	\$0.00	\$75.97
	06/01/2025	\$49.60	\$9.65	\$18.22	\$0.00	\$77.47
	12/01/2025	\$51.10	\$9.65	\$18.22	\$0.00	\$78.97
	06/01/2026	\$52.65	\$9.65	\$18.22	\$0.00	\$80.52
	12/01/2026	\$54.15	\$9.65	\$18.22	\$0.00	\$82.02

For apprentice rates see "Apprentice- LABORER"

<b>CAISSON &amp; UNDERPINNING LABORER</b>	06/01/2024	\$45.48	\$9.65	\$18.22	\$0.00	\$73.35
<i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$46.95	\$9.65	\$18.22	\$0.00	\$74.82
	06/01/2025	\$48.45	\$9.65	\$18.22	\$0.00	\$76.32
	12/01/2025	\$49.95	\$9.65	\$18.22	\$0.00	\$77.82
	06/01/2026	\$51.50	\$9.65	\$18.22	\$0.00	\$79.37
	12/01/2026	\$53.00	\$9.65	\$18.22	\$0.00	\$80.87

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2024	\$45.81	\$9.65	\$18.22	\$0.00	\$73.68
	12/01/2024	\$47.28	\$9.65	\$18.22	\$0.00	\$75.15
	06/01/2025	\$48.78	\$9.65	\$18.22	\$0.00	\$76.65
	12/01/2025	\$50.28	\$9.65	\$18.22	\$0.00	\$78.15
	06/01/2026	\$51.83	\$9.65	\$18.22	\$0.00	\$79.70
	12/01/2026	\$53.33	\$9.65	\$18.22	\$0.00	\$81.20

For apprentice rates see "Apprentice- LABORER"

CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2024	\$47.12	\$9.83	\$19.97	\$0.00	\$76.92
	09/01/2024	\$48.37	\$9.83	\$19.97	\$0.00	\$78.17
	03/01/2025	\$49.62	\$9.83	\$19.97	\$0.00	\$79.42
	09/01/2025	\$50.87	\$9.83	\$19.97	\$0.00	\$80.67
	03/01/2026	\$52.12	\$9.83	\$19.97	\$0.00	\$81.92
	09/01/2026	\$53.37	\$9.83	\$19.97	\$0.00	\$83.17
	03/01/2027	\$54.62	\$9.83	\$19.97	\$0.00	\$84.42

**Apprentice - CARPENTER - Zone 2 Eastern MA**

**Effective Date - 03/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$21.20	\$9.83	\$1.73	\$0.00	\$32.76
2	45	\$21.20	\$9.83	\$1.73	\$0.00	\$32.76
3	55	\$25.92	\$9.83	\$3.40	\$0.00	\$39.15
4	55	\$25.92	\$9.83	\$3.40	\$0.00	\$39.15
5	70	\$32.98	\$9.83	\$16.51	\$0.00	\$59.32
6	70	\$32.98	\$9.83	\$16.51	\$0.00	\$59.32
7	80	\$37.70	\$9.83	\$18.24	\$0.00	\$65.77
8	80	\$37.70	\$9.83	\$18.24	\$0.00	\$65.77

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$21.77	\$9.83	\$1.73	\$0.00	\$33.33
2	45	\$21.77	\$9.83	\$1.73	\$0.00	\$33.33
3	55	\$26.60	\$9.83	\$3.40	\$0.00	\$39.83
4	55	\$26.60	\$9.83	\$3.40	\$0.00	\$39.83
5	70	\$33.86	\$9.83	\$16.51	\$0.00	\$60.20
6	70	\$33.86	\$9.83	\$16.51	\$0.00	\$60.20
7	80	\$38.70	\$9.83	\$18.24	\$0.00	\$66.77
8	80	\$38.70	\$9.83	\$18.24	\$0.00	\$66.77

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARPENTER WOOD FRAME	10/01/2023	\$25.55	\$7.02	\$4.80	\$0.00	\$37.37
<i>CARPENTERS-ZONE 3 (Wood Frame)</i>	10/01/2024	\$26.65	\$7.02	\$4.80	\$0.00	\$38.47
	10/01/2025	\$27.75	\$7.02	\$4.80	\$0.00	\$39.57
	10/01/2026	\$28.85	\$7.02	\$4.80	\$0.00	\$40.67

All Aspects of New Wood Frame Work

**Apprentice - CARPENTER (Wood Frame) - Zone 3**

**Effective Date - 10/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$15.33	\$7.02	\$0.00	\$0.00	\$22.35
2	60	\$15.33	\$7.02	\$0.00	\$0.00	\$22.35
3	65	\$16.61	\$7.02	\$1.00	\$0.00	\$24.63
4	70	\$17.89	\$7.02	\$1.00	\$0.00	\$25.91
5	75	\$19.16	\$7.02	\$4.80	\$0.00	\$30.98
6	80	\$20.44	\$7.02	\$4.80	\$0.00	\$32.26
7	85	\$21.72	\$7.02	\$4.80	\$0.00	\$33.54
8	90	\$23.00	\$7.02	\$4.80	\$0.00	\$34.82

**Effective Date - 10/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
2	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
3	65	\$17.32	\$7.02	\$1.00	\$0.00	\$25.34
4	70	\$18.66	\$7.02	\$1.00	\$0.00	\$26.68
5	75	\$19.99	\$7.02	\$4.80	\$0.00	\$31.81
6	80	\$21.32	\$7.02	\$4.80	\$0.00	\$33.14
7	85	\$22.65	\$7.02	\$4.80	\$0.00	\$34.47
8	90	\$23.99	\$7.02	\$4.80	\$0.00	\$35.81

**Notes:**

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80  
 Step 1&2 \$18.52/ 3&4 \$21.07/ 5&6 \$28.70/ 7&8 \$31.26

**Apprentice to Journeyworker Ratio:1:5**

CEMENT MASONRY/PLASTERING	01/01/2024	\$49.33	\$13.00	\$23.57	\$1.30	\$87.20
<i>BRICKLAYERS LOCAL 3 (LOWELL)</i>						

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - CEMENT MASONRY/PLASTERING - Lowell**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.67	\$13.00	\$15.93	\$0.00	\$53.60
2	60	\$29.60	\$13.00	\$18.57	\$1.30	\$62.47
3	65	\$32.06	\$13.00	\$19.57	\$1.30	\$65.93
4	70	\$34.53	\$13.00	\$20.57	\$1.30	\$69.40
5	75	\$37.00	\$13.00	\$21.57	\$1.30	\$72.87
6	80	\$39.46	\$13.00	\$22.57	\$1.30	\$76.33
7	90	\$44.40	\$13.00	\$23.57	\$1.30	\$82.27

**Notes:**  
Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

**Apprentice to Journeyworker Ratio:1:3**

<b>CHAIN SAW OPERATOR</b> <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
<b>CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES</b> <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$57.15	\$15.30	\$16.40	\$0.00	\$88.85
	12/01/2024	\$58.63	\$15.30	\$16.40	\$0.00	\$90.33
	06/01/2025	\$59.96	\$15.30	\$16.40	\$0.00	\$91.66
	12/01/2025	\$61.43	\$15.30	\$16.40	\$0.00	\$93.13
	06/01/2026	\$62.76	\$15.30	\$16.40	\$0.00	\$94.46
	12/01/2026	\$64.24	\$15.30	\$16.40	\$0.00	\$95.94
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
<b>COMPRESSOR OPERATOR</b> <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$36.17	\$15.30	\$16.40	\$0.00	\$67.87
	12/01/2024	\$37.12	\$15.30	\$16.40	\$0.00	\$68.82
	06/01/2025	\$37.97	\$15.30	\$16.40	\$0.00	\$69.67
	12/01/2025	\$38.92	\$15.30	\$16.40	\$0.00	\$70.62
	06/01/2026	\$39.78	\$15.30	\$16.40	\$0.00	\$71.48
	12/01/2026	\$40.73	\$15.30	\$16.40	\$0.00	\$72.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
<b>DELEADER (BRIDGE)</b> <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2024	\$57.26	\$9.95	\$23.95	\$0.00	\$91.16
	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PAINTER Local 35 - BRIDGES/TANKS**

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.63	\$9.95	\$0.00	\$0.00	\$38.58
2	55	\$31.49	\$9.95	\$6.66	\$0.00	\$48.10
3	60	\$34.36	\$9.95	\$7.26	\$0.00	\$51.57
4	65	\$37.22	\$9.95	\$7.87	\$0.00	\$55.04
5	70	\$40.08	\$9.95	\$20.32	\$0.00	\$70.35
6	75	\$42.95	\$9.95	\$20.93	\$0.00	\$73.83
7	80	\$45.81	\$9.95	\$21.53	\$0.00	\$77.29
8	90	\$51.53	\$9.95	\$22.74	\$0.00	\$84.22

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30

**Notes:**  
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

DEMO: ADZEMAN LABORERS - ZONE 2	12/01/2023	\$44.48	\$9.65	\$18.07	\$0.00	\$72.20
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For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 2	12/01/2023	\$45.48	\$9.65	\$18.07	\$0.00	\$73.20
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For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS LABORERS - ZONE 2	12/01/2023	\$45.23	\$9.65	\$18.07	\$0.00	\$72.95
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For apprentice rates see "Apprentice- LABORER"

DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 2	12/01/2023	\$45.48	\$9.65	\$18.07	\$0.00	\$73.20
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For apprentice rates see "Apprentice- LABORER"

DEMO: JACKHAMMER OPERATOR LABORERS - ZONE 2	12/01/2023	\$45.23	\$9.65	\$18.07	\$0.00	\$72.95
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For apprentice rates see "Apprentice- LABORER"

DEMO: WRECKING LABORER LABORERS - ZONE 2	12/01/2023	\$44.48	\$9.65	\$18.07	\$0.00	\$72.20
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For apprentice rates see "Apprentice- LABORER"

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$55.41	\$15.30	\$16.40	\$0.00	\$87.11
	12/01/2024	\$56.85	\$15.30	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.13	\$15.30	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.57	\$15.30	\$16.40	\$0.00	\$91.27
	06/01/2026	\$60.85	\$15.30	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.29	\$15.30	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$68.70	\$9.40	\$23.12	\$0.00	\$101.22
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$73.60	\$9.40	\$23.12	\$0.00	\$106.12
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>DRAWBRIDGE - SEIU LOCAL 888</i>	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53
ELECTRICIAN <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - ELECTRICIAN - Local 96**

**Effective Date - 09/03/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.40	\$13.00	\$0.55	\$0.00	\$31.95
2	45	\$20.70	\$13.00	\$0.62	\$0.00	\$34.32
3	48	\$22.08	\$13.00	\$15.49	\$0.00	\$50.57
4	55	\$25.29	\$13.00	\$15.94	\$0.00	\$54.23
5	65	\$29.89	\$13.00	\$16.59	\$0.00	\$59.48
6	80	\$36.79	\$13.00	\$17.55	\$0.00	\$67.34

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.82	\$13.99	\$0.56	\$0.00	\$33.37
2	45	\$21.17	\$13.99	\$0.64	\$0.00	\$35.80
3	48	\$22.58	\$13.99	\$15.79	\$0.00	\$52.36
4	55	\$25.88	\$13.99	\$16.26	\$0.00	\$56.13
5	65	\$30.58	\$13.99	\$16.91	\$0.00	\$61.48
6	80	\$37.64	\$13.99	\$17.90	\$0.00	\$69.53

**Notes:**

Steps 1-2 are 1000 hrs; Steps 3-6 are 1500 hrs.

**Apprentice to Journeyworker Ratio:2:3\*\*\***

ELEVATOR CONSTRUCTOR ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2022	\$65.62	\$16.03	\$20.21	\$0.00	\$101.86
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**Apprentice - ELEVATOR CONSTRUCTOR - Local 4**

**Effective Date - 01/01/2022**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.81	\$16.03	\$0.00	\$0.00	\$48.84
2	55	\$36.09	\$16.03	\$20.21	\$0.00	\$72.33
3	65	\$42.65	\$16.03	\$20.21	\$0.00	\$78.89
4	70	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
5	80	\$52.50	\$16.03	\$20.21	\$0.00	\$88.74

**Notes:**

Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

**Apprentice to Journeyworker Ratio:1:1**

ELEVATOR CONSTRUCTOR HELPER ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2022	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
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For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2024	\$38.78	\$9.65	\$17.80	\$0.00	\$66.23
	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2024	\$50.79	\$15.00	\$16.40	\$0.00	\$82.19
	11/01/2024	\$52.08	\$15.00	\$16.40	\$0.00	\$83.48
	05/01/2025	\$53.52	\$15.00	\$16.40	\$0.00	\$84.92
	11/01/2025	\$54.81	\$15.00	\$16.40	\$0.00	\$86.21
	05/01/2026	\$56.25	\$15.00	\$16.40	\$0.00	\$87.65
	11/01/2026	\$57.54	\$15.00	\$16.40	\$0.00	\$88.94
	05/01/2027	\$58.97	\$15.00	\$16.40	\$0.00	\$90.37
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2024	\$52.37	\$15.00	\$16.40	\$0.00	\$83.77
	11/01/2024	\$53.67	\$15.00	\$16.40	\$0.00	\$85.07
	05/01/2025	\$55.12	\$15.00	\$16.40	\$0.00	\$86.52
	11/01/2025	\$56.42	\$15.00	\$16.40	\$0.00	\$87.82
	05/01/2026	\$57.87	\$15.00	\$16.40	\$0.00	\$89.27
	11/01/2026	\$59.17	\$15.00	\$16.40	\$0.00	\$90.57
	05/01/2027	\$60.62	\$15.00	\$16.40	\$0.00	\$92.02
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2024	\$24.91	\$15.00	\$16.40	\$0.00	\$56.31
	11/01/2024	\$25.67	\$15.00	\$16.40	\$0.00	\$57.07
	05/01/2025	\$26.52	\$15.00	\$16.40	\$0.00	\$57.92
	11/01/2025	\$27.28	\$15.00	\$16.40	\$0.00	\$58.68
	05/01/2026	\$28.13	\$15.00	\$16.40	\$0.00	\$59.53
	11/01/2026	\$28.89	\$15.00	\$16.40	\$0.00	\$60.29
	05/01/2027	\$29.74	\$15.00	\$16.40	\$0.00	\$61.14
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINT/COMMISSIONING <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$45.23	\$15.30	\$16.40	\$0.00	\$76.93
	12/01/2024	\$46.41	\$15.30	\$16.40	\$0.00	\$78.11
	06/01/2025	\$47.47	\$15.30	\$16.40	\$0.00	\$79.17
	12/01/2025	\$48.64	\$15.30	\$16.40	\$0.00	\$80.34
	06/01/2026	\$49.70	\$15.30	\$16.40	\$0.00	\$81.40
	12/01/2026	\$50.88	\$15.30	\$16.40	\$0.00	\$82.58

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2024	\$27.01	\$9.65	\$17.80	\$0.00	\$54.46
	12/01/2024	\$27.01	\$9.65	\$17.80	\$0.00	\$54.46
	06/01/2025	\$28.09	\$9.65	\$17.80	\$0.00	\$55.54
	12/01/2025	\$28.09	\$9.65	\$17.80	\$0.00	\$55.54
	06/01/2026	\$29.21	\$9.65	\$17.80	\$0.00	\$56.66
	12/01/2026	\$29.21	\$9.65	\$17.80	\$0.00	\$56.66

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
FLOORCOVERER FLOORCOVERERS LOCAL 2168 ZONE 1	03/01/2024	\$54.73	\$8.83	\$20.27	\$0.00	\$83.83
	09/01/2024	\$56.23	\$8.83	\$20.27	\$0.00	\$85.33
	03/01/2025	\$57.73	\$8.83	\$20.27	\$0.00	\$86.83
	09/01/2025	\$59.23	\$8.83	\$20.27	\$0.00	\$88.33
	03/01/2026	\$60.73	\$8.83	\$20.27	\$0.00	\$89.83
	09/01/2026	\$62.23	\$8.83	\$20.27	\$0.00	\$91.33
	03/01/2027	\$63.73	\$8.83	\$20.27	\$0.00	\$92.83

**Apprentice - FLOORCOVERER - Local 2168 Zone 1**

**Effective Date - 03/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$24.63	\$8.83	\$1.76	\$0.00	\$35.22
2	45	\$24.63	\$8.83	\$1.76	\$0.00	\$35.22
3	55	\$30.10	\$8.83	\$3.52	\$0.00	\$42.45
4	55	\$30.10	\$8.83	\$3.52	\$0.00	\$42.45
5	70	\$38.31	\$8.83	\$16.75	\$0.00	\$63.89
6	70	\$38.31	\$8.83	\$16.75	\$0.00	\$63.89
7	80	\$43.78	\$8.83	\$18.51	\$0.00	\$71.12
8	80	\$43.78	\$8.83	\$18.51	\$0.00	\$71.12

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$25.30	\$8.83	\$1.76	\$0.00	\$35.89
2	45	\$25.30	\$8.83	\$1.76	\$0.00	\$35.89
3	55	\$30.93	\$8.83	\$3.52	\$0.00	\$43.28
4	55	\$30.93	\$8.83	\$3.52	\$0.00	\$43.28
5	70	\$39.36	\$8.83	\$16.75	\$0.00	\$64.94
6	70	\$39.36	\$8.83	\$16.75	\$0.00	\$64.94
7	80	\$44.98	\$8.83	\$18.51	\$0.00	\$72.32
8	80	\$44.98	\$8.83	\$18.51	\$0.00	\$72.32

Notes: Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$56.03	\$15.30	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.48	\$15.30	\$16.40	\$0.00	\$89.18
	06/01/2025	\$58.78	\$15.30	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.23	\$15.30	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.53	\$15.30	\$16.40	\$0.00	\$93.23
	12/01/2026	\$62.98	\$15.30	\$16.40	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$36.17	\$15.30	\$16.40	\$0.00	\$67.87
	12/01/2024	\$37.12	\$15.30	\$16.40	\$0.00	\$68.82
	06/01/2025	\$37.97	\$15.30	\$16.40	\$0.00	\$69.67
	12/01/2025	\$38.92	\$15.30	\$16.40	\$0.00	\$70.62
	06/01/2026	\$39.78	\$15.30	\$16.40	\$0.00	\$71.48
	12/01/2026	\$40.73	\$15.30	\$16.40	\$0.00	\$72.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	07/01/2024	\$46.76	\$9.95	\$23.95	\$0.00	\$80.66
	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86

**Apprentice - GLAZIER - Local 35 Zone 2**

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.38	\$9.95	\$0.00	\$0.00	\$33.33
2	55	\$25.72	\$9.95	\$6.66	\$0.00	\$42.33
3	60	\$28.06	\$9.95	\$7.26	\$0.00	\$45.27
4	65	\$30.39	\$9.95	\$7.87	\$0.00	\$48.21
5	70	\$32.73	\$9.95	\$20.32	\$0.00	\$63.00
6	75	\$35.07	\$9.95	\$20.93	\$0.00	\$65.95
7	80	\$37.41	\$9.95	\$21.53	\$0.00	\$68.89
8	90	\$42.08	\$9.95	\$22.74	\$0.00	\$74.77

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.98	\$9.95	\$0.00	\$0.00	\$33.93
2	55	\$26.38	\$9.95	\$6.66	\$0.00	\$42.99
3	60	\$28.78	\$9.95	\$7.26	\$0.00	\$45.99
4	65	\$31.17	\$9.95	\$7.87	\$0.00	\$48.99
5	70	\$33.57	\$9.95	\$20.32	\$0.00	\$63.84
6	75	\$35.97	\$9.95	\$20.93	\$0.00	\$66.85
7	80	\$38.37	\$9.95	\$21.53	\$0.00	\$69.85
8	90	\$43.16	\$9.95	\$22.74	\$0.00	\$75.85

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$56.03	\$15.30	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.48	\$15.30	\$16.40	\$0.00	\$89.18
	06/01/2025	\$58.78	\$15.30	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.23	\$15.30	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.53	\$15.30	\$16.40	\$0.00	\$93.23
	12/01/2026	\$62.98	\$15.30	\$16.40	\$0.00	\$94.68

**Apprentice - OPERATING ENGINEERS - Local 4**

**Effective Date - 06/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$30.82	\$15.30	\$0.00	\$0.00	\$46.12
2	60	\$33.62	\$15.30	\$16.40	\$0.00	\$65.32
3	65	\$36.42	\$15.30	\$16.40	\$0.00	\$68.12
4	70	\$39.22	\$15.30	\$16.40	\$0.00	\$70.92
5	75	\$42.02	\$15.30	\$16.40	\$0.00	\$73.72
6	80	\$44.82	\$15.30	\$16.40	\$0.00	\$76.52
7	85	\$47.63	\$15.30	\$16.40	\$0.00	\$79.33
8	90	\$50.43	\$15.30	\$16.40	\$0.00	\$82.13

**Effective Date - 12/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$31.61	\$0.00	\$0.00	\$0.00	\$31.61
2	60	\$34.49	\$15.30	\$16.40	\$0.00	\$66.19
3	65	\$37.36	\$15.30	\$16.40	\$0.00	\$69.06
4	70	\$40.24	\$15.30	\$16.40	\$0.00	\$71.94
5	75	\$43.11	\$15.30	\$16.40	\$0.00	\$74.81
6	80	\$45.98	\$15.30	\$16.40	\$0.00	\$77.68
7	85	\$48.86	\$15.30	\$16.40	\$0.00	\$80.56
8	90	\$51.73	\$15.30	\$16.40	\$0.00	\$83.43

**Notes:**

**Apprentice to Journeyworker Ratio:1:6**

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2024	\$57.22	\$14.59	\$27.50	\$2.98	\$102.29
	08/01/2024	\$58.97	\$14.59	\$27.50	\$2.98	\$104.04
	02/01/2025	\$60.72	\$14.59	\$27.50	\$2.98	\$105.79
	08/01/2025	\$62.57	\$14.59	\$27.50	\$2.98	\$107.64
	02/01/2026	\$64.52	\$14.59	\$27.50	\$2.98	\$109.59

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34

For apprentice rates see "Apprentice- ELECTRICIAN"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2024	\$57.22	\$14.59	\$27.50	\$2.98	\$102.29
	08/01/2024	\$58.97	\$14.59	\$27.50	\$2.98	\$104.04
	02/01/2025	\$60.72	\$14.59	\$27.50	\$2.98	\$105.79
	08/01/2025	\$62.57	\$14.59	\$27.50	\$2.98	\$107.64
	02/01/2026	\$64.52	\$14.59	\$27.50	\$2.98	\$109.59
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING - WATER) <i>PIPEFITTERS LOCAL 537</i>	03/01/2024	\$65.28	\$12.70	\$21.80	\$0.00	\$99.78
	09/01/2024	\$67.08	\$12.70	\$21.80	\$0.00	\$101.58
	03/01/2025	\$68.88	\$12.70	\$21.80	\$0.00	\$103.38
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537</i>	03/01/2024	\$65.28	\$12.70	\$21.80	\$0.00	\$99.78
	09/01/2024	\$67.08	\$12.70	\$21.80	\$0.00	\$101.58
	03/01/2025	\$68.88	\$12.70	\$21.80	\$0.00	\$103.38
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2024	\$39.28	\$9.65	\$17.80	\$0.00	\$66.73
	12/01/2024	\$40.61	\$9.65	\$17.80	\$0.00	\$68.06
	06/01/2025	\$42.00	\$9.65	\$17.80	\$0.00	\$69.45
	12/01/2025	\$43.38	\$9.65	\$17.80	\$0.00	\$70.83
	06/01/2026	\$44.82	\$9.65	\$17.80	\$0.00	\$72.27
	12/01/2026	\$46.26	\$9.65	\$17.80	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) <i>HEAT &amp; FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2023	\$53.50	\$14.75	\$19.61	\$0.00	\$87.86
	09/01/2024	\$56.92	\$14.75	\$19.61	\$0.00	\$91.28
	09/01/2025	\$60.34	\$14.75	\$19.61	\$0.00	\$94.70
	09/01/2026	\$63.76	\$14.75	\$19.61	\$0.00	\$98.12

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston**

**Effective Date - 09/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.75	\$14.75	\$14.32	\$0.00	\$55.82
2	60	\$32.10	\$14.75	\$15.37	\$0.00	\$62.22
3	70	\$37.45	\$14.75	\$16.43	\$0.00	\$68.63
4	80	\$42.80	\$14.75	\$17.49	\$0.00	\$75.04

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.46	\$14.75	\$14.32	\$0.00	\$57.53
2	60	\$34.15	\$14.75	\$15.37	\$0.00	\$64.27
3	70	\$39.84	\$14.75	\$16.43	\$0.00	\$71.02
4	80	\$45.54	\$14.75	\$17.49	\$0.00	\$77.78

**Notes:**

Steps are 1 year

**Apprentice to Journeyworker Ratio:1:4**

IRONWORKER/WELDER IRONWORKERS LOCAL 7 (WORCESTER AREA)	03/16/2024	\$53.67	\$8.35	\$26.70	\$0.00	\$88.72
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**Apprentice - IRONWORKER - Local 7 Worcester**

**Effective Date - 03/16/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$32.20	\$8.35	\$26.70	\$0.00	\$67.25
2	70	\$37.57	\$8.35	\$26.70	\$0.00	\$72.62
3	75	\$40.25	\$8.35	\$26.70	\$0.00	\$75.30
4	80	\$42.94	\$8.35	\$26.70	\$0.00	\$77.99
5	85	\$45.62	\$8.35	\$26.70	\$0.00	\$80.67
6	90	\$48.30	\$8.35	\$26.70	\$0.00	\$83.35

**Notes:**

**Apprentice to Journeyworker Ratio:1:4**

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 2	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprenticeship rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 2	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
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**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - LABORER - Zone 2**

**Effective Date - 12/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.72	\$9.65	\$16.89	\$0.00	\$49.26
2	70	\$26.50	\$9.65	\$16.89	\$0.00	\$53.04
3	80	\$30.29	\$9.65	\$16.89	\$0.00	\$56.83
4	90	\$34.07	\$9.65	\$16.89	\$0.00	\$60.61

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

LABORER (HEAVY & HIGHWAY)	06/01/2024	\$38.53	\$9.65	\$17.80	\$0.00	\$65.98
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2024	\$39.86	\$9.65	\$17.80	\$0.00	\$67.31
	06/01/2025	\$41.25	\$9.65	\$17.80	\$0.00	\$68.70
	12/01/2025	\$42.63	\$9.65	\$17.80	\$0.00	\$70.08
	06/01/2026	\$44.07	\$9.65	\$17.80	\$0.00	\$71.52
	12/01/2026	\$45.51	\$9.65	\$17.80	\$0.00	\$72.96

**Apprentice - LABORER (Heavy & Highway) - Zone 2**

**Effective Date - 06/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.12	\$9.65	\$17.80	\$0.00	\$50.57
2	70	\$26.97	\$9.65	\$17.80	\$0.00	\$54.42
3	80	\$30.82	\$9.65	\$17.80	\$0.00	\$58.27
4	90	\$34.68	\$9.65	\$17.80	\$0.00	\$62.13

**Effective Date - 12/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.92	\$9.65	\$17.80	\$0.00	\$51.37
2	70	\$27.90	\$9.65	\$17.80	\$0.00	\$55.35
3	80	\$31.89	\$9.65	\$17.80	\$0.00	\$59.34
4	90	\$35.87	\$9.65	\$17.80	\$0.00	\$63.32

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

LABORER: CARPENTER TENDER	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
LABORERS - ZONE 2						

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER	12/01/2023	\$38.36	\$9.40	\$16.89	\$0.00	\$64.65
LABORERS - ZONE 2						

For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER	12/01/2023	\$37.95	\$9.65	\$17.20	\$0.00	\$64.80
LABORERS - ZONE 2						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2024	\$38.78	\$9.65	\$17.80	\$0.00	\$66.23
	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2024	\$38.78	\$9.65	\$17.80	\$0.00	\$66.23
	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	02/01/2024	\$47.89	\$11.49	\$21.37	\$0.00	\$80.75
	08/01/2024	\$49.57	\$11.49	\$21.37	\$0.00	\$82.43
	02/01/2025	\$50.61	\$11.49	\$21.37	\$0.00	\$83.47
	08/01/2025	\$52.33	\$11.49	\$21.37	\$0.00	\$85.19
	02/01/2026	\$53.41	\$11.49	\$21.37	\$0.00	\$86.27
	08/01/2026	\$55.17	\$11.49	\$21.37	\$0.00	\$88.03
	02/01/2027	\$56.29	\$11.49	\$21.37	\$0.00	\$89.15



**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile**

**Effective Date - 02/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.95	\$11.49	\$21.37	\$0.00	\$56.81
2	60	\$28.73	\$11.49	\$21.37	\$0.00	\$61.59
3	70	\$33.52	\$11.49	\$21.37	\$0.00	\$66.38
4	80	\$38.31	\$11.49	\$21.37	\$0.00	\$71.17
5	90	\$43.10	\$11.49	\$21.37	\$0.00	\$75.96

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.79	\$11.49	\$21.37	\$0.00	\$57.65
2	60	\$29.74	\$11.49	\$21.37	\$0.00	\$62.60
3	70	\$34.70	\$11.49	\$21.37	\$0.00	\$67.56
4	80	\$39.66	\$11.49	\$21.37	\$0.00	\$72.52
5	90	\$44.61	\$11.49	\$21.37	\$0.00	\$77.47

**Notes:**

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**Apprentice to Journeyworker Ratio:1:3**

MARBLE MASONS, TILELAYERS & TERRAZZO MECH	02/01/2024	\$62.42	\$11.49	\$23.56	\$0.00	\$97.47
BRICKLAYERS LOCAL 3 - MARBLE & TILE	08/01/2024	\$64.52	\$11.49	\$23.56	\$0.00	\$99.57
	02/01/2025	\$65.82	\$11.49	\$23.56	\$0.00	\$100.87
	08/01/2025	\$67.97	\$11.49	\$23.56	\$0.00	\$103.02
	02/01/2026	\$69.32	\$11.49	\$23.56	\$0.00	\$104.37
	08/01/2026	\$71.52	\$11.49	\$23.56	\$0.00	\$106.57
	02/01/2027	\$72.92	\$11.49	\$23.56	\$0.00	\$107.97

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile**

**Effective Date - 02/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.21	\$11.49	\$23.56	\$0.00	\$66.26
2	60	\$37.45	\$11.49	\$23.56	\$0.00	\$72.50
3	70	\$43.69	\$11.49	\$23.56	\$0.00	\$78.74
4	80	\$49.94	\$11.49	\$23.56	\$0.00	\$84.99
5	90	\$56.18	\$11.49	\$23.56	\$0.00	\$91.23

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.26	\$11.49	\$23.56	\$0.00	\$67.31
2	60	\$38.71	\$11.49	\$23.56	\$0.00	\$73.76
3	70	\$45.16	\$11.49	\$23.56	\$0.00	\$80.21
4	80	\$51.62	\$11.49	\$23.56	\$0.00	\$86.67
5	90	\$58.07	\$11.49	\$23.56	\$0.00	\$93.12

**Notes:**

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**Apprentice to Journeyworker Ratio:1:5**

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$55.41	\$15.30	\$16.40	\$0.00	\$87.11
	12/01/2024	\$56.85	\$15.30	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.13	\$15.30	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.57	\$15.30	\$16.40	\$0.00	\$91.27
	06/01/2026	\$60.85	\$15.30	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.29	\$15.30	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$55.41	\$15.30	\$16.40	\$0.00	\$87.11
	12/01/2024	\$56.85	\$15.30	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.13	\$15.30	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.57	\$15.30	\$16.40	\$0.00	\$91.27
	06/01/2026	\$60.85	\$15.30	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.29	\$15.30	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 2) <i>MILLWRIGHTS LOCAL 1121 - Zone 2</i>	01/01/2024	\$42.76	\$10.08	\$21.47	\$0.00	\$74.31
	01/06/2025	\$45.09	\$10.08	\$21.47	\$0.00	\$76.64
	01/05/2026	\$47.42	\$10.08	\$21.47	\$0.00	\$78.97

**Apprentice - MILLWRIGHT - Local 1121 Zone 2**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$23.52	\$10.08	\$5.50	\$0.00	\$39.10
2	65	\$27.79	\$10.08	\$6.50	\$0.00	\$44.37
3	75	\$32.07	\$10.08	\$18.97	\$0.00	\$61.12
4	85	\$36.35	\$10.08	\$19.97	\$0.00	\$66.40

**Effective Date - 01/06/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$24.80	\$10.08	\$5.50	\$0.00	\$40.38
2	65	\$29.31	\$10.08	\$6.50	\$0.00	\$45.89
3	75	\$33.82	\$10.08	\$18.97	\$0.00	\$62.87
4	85	\$38.33	\$10.08	\$19.97	\$0.00	\$68.38

**Notes:** Step 1&2 Appr. indentured after 1/6/2020 receive no pension, but do receive annuity. (Step 1 \$5.72, Step 2 \$6.66)  
Steps are 2,000 hours

**Apprentice to Journeyworker Ratio:1:4**

<b>MORTAR MIXER</b> <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

<b>OILER (OTHER THAN TRUCK CRANES,GRADALLS)</b> <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$24.71	\$15.30	\$16.40	\$0.00	\$56.41
	12/01/2024	\$25.37	\$15.30	\$16.40	\$0.00	\$57.07
	06/01/2025	\$25.97	\$15.30	\$16.40	\$0.00	\$57.67
	12/01/2025	\$26.63	\$15.30	\$16.40	\$0.00	\$58.33
	06/01/2026	\$27.22	\$15.30	\$16.40	\$0.00	\$58.92
	12/01/2026	\$27.89	\$15.30	\$16.40	\$0.00	\$59.59

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>OILER (TRUCK CRANES, GRADALLS)</b> <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$30.28	\$15.30	\$16.40	\$0.00	\$61.98
	12/01/2024	\$31.08	\$15.30	\$16.40	\$0.00	\$62.78
	06/01/2025	\$31.80	\$15.30	\$16.40	\$0.00	\$63.50
	12/01/2025	\$32.60	\$15.30	\$16.40	\$0.00	\$64.30
	06/01/2026	\$33.32	\$15.30	\$16.40	\$0.00	\$65.02
	12/01/2026	\$34.12	\$15.30	\$16.40	\$0.00	\$65.82

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>OTHER POWER DRIVEN EQUIPMENT - CLASS II</b> <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$55.41	\$15.30	\$16.40	\$0.00	\$87.11
	12/01/2024	\$56.85	\$15.30	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.13	\$15.30	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.57	\$15.30	\$16.40	\$0.00	\$91.27
	06/01/2026	\$60.85	\$15.30	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.29	\$15.30	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>PAINTER (BRIDGES/TANKS)</b> <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2024	\$57.26	\$9.95	\$23.95	\$0.00	\$91.16
	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER Local 35 - BRIDGES/TANKS**

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.63	\$9.95	\$0.00	\$0.00	\$38.58
2	55	\$31.49	\$9.95	\$6.66	\$0.00	\$48.10
3	60	\$34.36	\$9.95	\$7.26	\$0.00	\$51.57
4	65	\$37.22	\$9.95	\$7.87	\$0.00	\$55.04
5	70	\$40.08	\$9.95	\$20.32	\$0.00	\$70.35
6	75	\$42.95	\$9.95	\$20.93	\$0.00	\$73.83
7	80	\$45.81	\$9.95	\$21.53	\$0.00	\$77.29
8	90	\$51.53	\$9.95	\$22.74	\$0.00	\$84.22

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER (SPRAY OR SANDBLAST, NEW) *	07/01/2024	\$48.16	\$9.95	\$23.95	\$0.00	\$82.06
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	01/01/2025	\$49.36	\$9.95	\$23.95	\$0.00	\$83.26

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New**

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.08	\$9.95	\$0.00	\$0.00	\$34.03
2	55	\$26.49	\$9.95	\$6.66	\$0.00	\$43.10
3	60	\$28.90	\$9.95	\$7.26	\$0.00	\$46.11
4	65	\$31.30	\$9.95	\$7.87	\$0.00	\$49.12
5	70	\$33.71	\$9.95	\$20.32	\$0.00	\$63.98
6	75	\$36.12	\$9.95	\$20.93	\$0.00	\$67.00
7	80	\$38.53	\$9.95	\$21.53	\$0.00	\$70.01
8	90	\$43.34	\$9.95	\$22.74	\$0.00	\$76.03

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.68	\$9.95	\$0.00	\$0.00	\$34.63
2	55	\$27.15	\$9.95	\$6.66	\$0.00	\$43.76
3	60	\$29.62	\$9.95	\$7.26	\$0.00	\$46.83
4	65	\$32.08	\$9.95	\$7.87	\$0.00	\$49.90
5	70	\$34.55	\$9.95	\$20.32	\$0.00	\$64.82
6	75	\$37.02	\$9.95	\$20.93	\$0.00	\$67.90
7	80	\$39.49	\$9.95	\$21.53	\$0.00	\$70.97
8	90	\$44.42	\$9.95	\$22.74	\$0.00	\$77.11

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER (SPRAY OR SANDBLAST, REPAINT)	07/01/2024	\$46.22	\$9.95	\$23.95	\$0.00	\$80.12
PAINTERS LOCAL 35 - ZONE 2	01/01/2025	\$47.42	\$9.95	\$23.95	\$0.00	\$81.32

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint**

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.11	\$9.95	\$0.00	\$0.00	\$33.06
2	55	\$25.42	\$9.95	\$6.66	\$0.00	\$42.03
3	60	\$27.73	\$9.95	\$7.26	\$0.00	\$44.94
4	65	\$30.04	\$9.95	\$7.87	\$0.00	\$47.86
5	70	\$32.35	\$9.95	\$20.32	\$0.00	\$62.62
6	75	\$34.67	\$9.95	\$20.93	\$0.00	\$65.55
7	80	\$36.98	\$9.95	\$21.53	\$0.00	\$68.46
8	90	\$41.60	\$9.95	\$22.74	\$0.00	\$74.29

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.71	\$9.95	\$0.00	\$0.00	\$33.66
2	55	\$26.08	\$9.95	\$6.66	\$0.00	\$42.69
3	60	\$28.45	\$9.95	\$7.26	\$0.00	\$45.66
4	65	\$30.82	\$9.95	\$7.87	\$0.00	\$48.64
5	70	\$33.19	\$9.95	\$20.32	\$0.00	\$63.46
6	75	\$35.57	\$9.95	\$20.93	\$0.00	\$66.45
7	80	\$37.94	\$9.95	\$21.53	\$0.00	\$69.42
8	90	\$42.68	\$9.95	\$22.74	\$0.00	\$75.37

**Notes:**  
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER / TAPER (BRUSH, NEW) *	07/01/2024	\$46.76	\$9.95	\$23.95	\$0.00	\$80.66
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW**

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.38	\$9.95	\$0.00	\$0.00	\$33.33
2	55	\$25.72	\$9.95	\$6.66	\$0.00	\$42.33
3	60	\$28.06	\$9.95	\$7.26	\$0.00	\$45.27
4	65	\$30.39	\$9.95	\$7.87	\$0.00	\$48.21
5	70	\$32.73	\$9.95	\$20.32	\$0.00	\$63.00
6	75	\$35.07	\$9.95	\$20.93	\$0.00	\$65.95
7	80	\$37.41	\$9.95	\$21.53	\$0.00	\$68.89
8	90	\$42.08	\$9.95	\$22.74	\$0.00	\$74.77

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.98	\$9.95	\$0.00	\$0.00	\$33.93
2	55	\$26.38	\$9.95	\$6.66	\$0.00	\$42.99
3	60	\$28.78	\$9.95	\$7.26	\$0.00	\$45.99
4	65	\$31.17	\$9.95	\$7.87	\$0.00	\$48.99
5	70	\$33.57	\$9.95	\$20.32	\$0.00	\$63.84
6	75	\$35.97	\$9.95	\$20.93	\$0.00	\$66.85
7	80	\$38.37	\$9.95	\$21.53	\$0.00	\$69.85
8	90	\$43.16	\$9.95	\$22.74	\$0.00	\$75.85

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER / TAPER (BRUSH, REPAINT)	07/01/2024	\$44.82	\$9.95	\$23.95	\$0.00	\$78.72
PAINTERS LOCAL 35 - ZONE 2	01/01/2025	\$46.02	\$9.95	\$23.95	\$0.00	\$79.92

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT**

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.41	\$9.95	\$0.00	\$0.00	\$32.36
2	55	\$24.65	\$9.95	\$6.66	\$0.00	\$41.26
3	60	\$26.89	\$9.95	\$7.26	\$0.00	\$44.10
4	65	\$29.13	\$9.95	\$7.87	\$0.00	\$46.95
5	70	\$31.37	\$9.95	\$20.32	\$0.00	\$61.64
6	75	\$33.62	\$9.95	\$20.93	\$0.00	\$64.50
7	80	\$35.86	\$9.95	\$21.53	\$0.00	\$67.34
8	90	\$40.34	\$9.95	\$22.74	\$0.00	\$73.03

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.01	\$9.95	\$0.00	\$0.00	\$32.96
2	55	\$25.31	\$9.95	\$6.66	\$0.00	\$41.92
3	60	\$27.61	\$9.95	\$7.26	\$0.00	\$44.82
4	65	\$29.91	\$9.95	\$7.87	\$0.00	\$47.73
5	70	\$32.21	\$9.95	\$20.32	\$0.00	\$62.48
6	75	\$34.52	\$9.95	\$20.93	\$0.00	\$65.40
7	80	\$36.82	\$9.95	\$21.53	\$0.00	\$68.30
8	90	\$41.42	\$9.95	\$22.74	\$0.00	\$74.11

**Notes:**  
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY)	06/01/2024	\$38.53	\$9.65	\$17.80	\$0.00	\$65.98
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2024	\$39.86	\$9.65	\$17.80	\$0.00	\$67.31
	06/01/2025	\$41.25	\$9.65	\$17.80	\$0.00	\$68.70
	12/01/2025	\$42.63	\$9.65	\$17.80	\$0.00	\$70.08
	06/01/2026	\$44.07	\$9.65	\$17.80	\$0.00	\$71.52
	12/01/2026	\$45.51	\$9.65	\$17.80	\$0.00	\$72.96

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)

PANEL & PICKUP TRUCKS DRIVER	06/01/2024	\$39.78	\$15.07	\$18.67	\$0.00	\$73.52
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2024	\$39.78	\$15.07	\$20.17	\$0.00	\$75.02
	01/01/2025	\$39.78	\$15.57	\$20.17	\$0.00	\$75.52
	06/01/2025	\$40.78	\$15.57	\$20.17	\$0.00	\$76.52
	12/01/2025	\$40.78	\$15.57	\$21.78	\$0.00	\$78.13
	01/01/2026	\$40.78	\$16.17	\$21.78	\$0.00	\$78.73
	06/01/2026	\$41.78	\$16.17	\$21.78	\$0.00	\$79.73
	12/01/2026	\$41.78	\$16.17	\$23.52	\$0.00	\$81.47
	01/01/2027	\$41.78	\$16.77	\$23.52	\$0.00	\$82.07



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i> For apprentice rates see "Apprentice- PILE DRIVER"	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59

**Apprentice - PILE DRIVER - Local 56 Zone 1**

**Effective Date - 08/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.54	\$9.40	\$23.12	\$0.00	\$57.06
2	60	\$29.44	\$9.40	\$23.12	\$0.00	\$61.96
3	70	\$34.35	\$9.40	\$23.12	\$0.00	\$66.87
4	75	\$36.80	\$9.40	\$23.12	\$0.00	\$69.32
5	80	\$39.26	\$9.40	\$23.12	\$0.00	\$71.78
6	80	\$39.26	\$9.40	\$23.12	\$0.00	\$71.78
7	90	\$44.16	\$9.40	\$23.12	\$0.00	\$76.68
8	90	\$44.16	\$9.40	\$23.12	\$0.00	\$76.68

**Notes:**

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80  
Step 1&2 \$34.01/ 3&4 \$41.46/ 5&6 \$62.80/ 7&8 \$69.25

**Apprentice to Journeyworker Ratio:1:5**

PIPEFITTER & STEAMFITTER <i>PIPEFITTERS LOCAL 537</i>	03/01/2024	\$65.28	\$12.70	\$21.80	\$0.00	\$99.78
	09/01/2024	\$67.08	\$12.70	\$21.80	\$0.00	\$101.58
	03/01/2025	\$68.88	\$12.70	\$21.80	\$0.00	\$103.38

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PIPEFITTER - Local 537**

**Effective Date - 03/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$26.11	\$12.70	\$9.05	\$0.00	\$47.86
2	45	\$29.38	\$12.70	\$21.80	\$0.00	\$63.88
3	60	\$39.17	\$12.70	\$21.80	\$0.00	\$73.67
4	70	\$45.70	\$12.70	\$21.80	\$0.00	\$80.20
5	80	\$52.22	\$12.70	\$21.80	\$0.00	\$86.72

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$26.83	\$12.70	\$9.05	\$0.00	\$48.58
2	45	\$30.19	\$12.70	\$21.80	\$0.00	\$64.69
3	60	\$40.25	\$12.70	\$21.80	\$0.00	\$74.75
4	70	\$46.96	\$12.70	\$21.80	\$0.00	\$81.46
5	80	\$53.66	\$12.70	\$21.80	\$0.00	\$88.16

**Notes:**

\*\* 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.  
 Refrig/AC Mechanic \*\*1:1;1:2;2:4;3:6;4:8;5:10;6:12;7:14;8:17;9:20;10:23(Max)

**Apprentice to Journeyworker Ratio:\*\***

PIPELAYER LABORERS - ZONE 2	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2024	\$38.78	\$9.65	\$17.80	\$0.00	\$66.23
	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

PLUMBERS & GASFITTERS PLUMBERS & GASFITTERS LOCAL 12	03/03/2024	\$67.74	\$14.32	\$19.11	\$0.00	\$101.17
	09/01/2024	\$69.54	\$14.32	\$19.11	\$0.00	\$102.97
	03/02/2025	\$71.34	\$14.32	\$19.11	\$0.00	\$104.77

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PLUMBER/GASFITTER - Local 12**

**Effective Date - 03/03/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$23.71	\$14.32	\$6.88	\$0.00	\$44.91
2	40	\$27.10	\$14.32	\$7.82	\$0.00	\$49.24
3	55	\$37.26	\$14.32	\$10.65	\$0.00	\$62.23
4	65	\$44.03	\$14.32	\$12.53	\$0.00	\$70.88
5	75	\$50.81	\$14.32	\$14.41	\$0.00	\$79.54

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$24.34	\$14.32	\$6.88	\$0.00	\$45.54
2	40	\$27.82	\$14.32	\$7.82	\$0.00	\$49.96
3	55	\$38.25	\$14.32	\$10.65	\$0.00	\$63.22
4	65	\$45.20	\$14.32	\$12.53	\$0.00	\$72.05
5	75	\$52.16	\$14.32	\$14.41	\$0.00	\$80.89

**Notes:**  
 \*\* 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr  
 Step4 with lic\$69.00, Step5 with lic\$76.87

**Apprentice to Journeyworker Ratio:\*\***

PNEUMATIC CONTROLS (TEMP.) <i>PIPEFITTERS LOCAL 537</i>	03/01/2024	\$65.28	\$12.70	\$21.80	\$0.00	\$99.78
	09/01/2024	\$67.08	\$12.70	\$21.80	\$0.00	\$101.58
	03/01/2025	\$68.88	\$12.70	\$21.80	\$0.00	\$103.38

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2024	\$38.78	\$9.65	\$17.80	\$0.00	\$66.23
	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.86	\$9.65	\$17.14	\$0.00	\$65.65
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2024	\$39.53	\$9.40	\$17.55	\$0.00	\$66.48
	12/01/2024	\$40.86	\$9.40	\$17.55	\$0.00	\$67.81
	06/01/2025	\$42.25	\$9.40	\$17.55	\$0.00	\$69.20
	12/01/2025	\$43.63	\$9.40	\$17.55	\$0.00	\$70.58
	06/01/2026	\$45.07	\$9.40	\$17.55	\$0.00	\$72.02
	12/01/2026	\$46.51	\$9.40	\$17.55	\$0.00	\$73.46

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$56.03	\$15.30	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.48	\$15.30	\$16.40	\$0.00	\$89.18
	06/01/2025	\$58.78	\$15.30	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.23	\$15.30	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.53	\$15.30	\$16.40	\$0.00	\$93.23
	12/01/2026	\$62.98	\$15.30	\$16.40	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$55.41	\$15.30	\$16.40	\$0.00	\$87.11
	12/01/2024	\$56.85	\$15.30	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.13	\$15.30	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.57	\$15.30	\$16.40	\$0.00	\$91.27
	06/01/2026	\$60.85	\$15.30	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.29	\$15.30	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$36.17	\$15.30	\$16.40	\$0.00	\$67.87
	12/01/2024	\$37.12	\$15.30	\$16.40	\$0.00	\$68.82
	06/01/2025	\$37.97	\$15.30	\$16.40	\$0.00	\$69.67
	12/01/2025	\$38.92	\$15.30	\$16.40	\$0.00	\$70.62
	06/01/2026	\$39.78	\$15.30	\$16.40	\$0.00	\$71.48
	12/01/2026	\$40.73	\$15.30	\$16.40	\$0.00	\$72.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 170 - Dauphinais (Bellingham)</i>	01/01/2024	\$27.00	\$10.76	\$5.45	\$0.00	\$43.21
	12/01/2024	\$27.60	\$11.26	\$6.15	\$0.00	\$45.01
	01/01/2025	\$27.60	\$11.26	\$6.15	\$0.00	\$45.01
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$55.41	\$15.30	\$16.40	\$0.00	\$87.11
	12/01/2024	\$56.85	\$15.30	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.13	\$15.30	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.57	\$15.30	\$16.40	\$0.00	\$91.27
	06/01/2026	\$60.85	\$15.30	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.29	\$15.30	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$55.41	\$15.30	\$16.40	\$0.00	\$87.11
	12/01/2024	\$56.85	\$15.30	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.13	\$15.30	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.57	\$15.30	\$16.40	\$0.00	\$91.27
	06/01/2026	\$60.85	\$15.30	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.29	\$15.30	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Inc.Roofer Waterproofing &Roofer Damproofg) <i>ROOFERS LOCAL 33</i>	02/01/2024	\$50.03	\$12.78	\$21.45	\$0.00	\$84.26
	08/01/2024	\$51.53	\$12.78	\$21.45	\$0.00	\$85.76
	02/01/2025	\$52.78	\$12.78	\$21.45	\$0.00	\$87.01
	08/01/2025	\$54.28	\$12.78	\$21.45	\$0.00	\$88.51
	02/01/2026	\$55.53	\$12.78	\$21.45	\$0.00	\$89.76

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - ROOFER - Local 33**

**Effective Date - 02/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.02	\$12.78	\$6.21	\$0.00	\$44.01
2	60	\$30.02	\$12.78	\$21.45	\$0.00	\$64.25
3	65	\$32.52	\$12.78	\$21.45	\$0.00	\$66.75
4	75	\$37.52	\$12.78	\$21.45	\$0.00	\$71.75
5	85	\$42.53	\$12.78	\$21.45	\$0.00	\$76.76

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.77	\$12.78	\$6.21	\$0.00	\$44.76
2	60	\$30.92	\$12.78	\$21.45	\$0.00	\$65.15
3	65	\$33.49	\$12.78	\$21.45	\$0.00	\$67.72
4	75	\$38.65	\$12.78	\$21.45	\$0.00	\$72.88
5	85	\$43.80	\$12.78	\$21.45	\$0.00	\$78.03

**Notes:** \*\* 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1  
 Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.  
 (Hot Pitch Mechanics' receive \$1.00 hr. above ROOFER)

**Apprentice to Journeyworker Ratio:\*\***

ROOFER SLATE / TILE / PRECAST CONCRETE	02/01/2024	\$50.28	\$12.78	\$21.45	\$0.00	\$84.51
ROOFERS LOCAL 33	08/01/2024	\$51.78	\$12.78	\$21.45	\$0.00	\$86.01
	02/01/2025	\$53.03	\$12.78	\$21.45	\$0.00	\$87.26
	08/01/2025	\$54.53	\$12.78	\$21.45	\$0.00	\$88.76
	02/01/2026	\$55.78	\$12.78	\$21.45	\$0.00	\$90.01

For apprentice rates see "Apprentice- ROOFER"

SHEETMETAL WORKER	02/01/2024	\$57.22	\$14.59	\$27.50	\$2.98	\$102.29
SHEETMETAL WORKERS LOCAL 17 - A	08/01/2024	\$58.97	\$14.59	\$27.50	\$2.98	\$104.04
	02/01/2025	\$60.72	\$14.59	\$27.50	\$2.98	\$105.79
	08/01/2025	\$62.57	\$14.59	\$27.50	\$2.98	\$107.64
	02/01/2026	\$64.52	\$14.59	\$27.50	\$2.98	\$109.59

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - SHEET METAL WORKER - Local 17-A**

**Effective Date - 02/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$24.03	\$14.59	\$6.13	\$0.00	\$44.75
2	42	\$24.03	\$14.59	\$6.13	\$0.00	\$44.75
3	47	\$26.89	\$14.59	\$12.11	\$1.61	\$55.20
4	47	\$26.89	\$14.59	\$12.11	\$1.61	\$55.20
5	52	\$29.75	\$14.59	\$13.09	\$1.72	\$59.15
6	52	\$29.75	\$14.59	\$13.34	\$1.73	\$59.41
7	60	\$34.33	\$14.59	\$14.75	\$1.91	\$65.58
8	65	\$37.19	\$14.59	\$15.73	\$2.03	\$69.54
9	75	\$42.92	\$14.59	\$17.69	\$2.26	\$77.46
10	85	\$48.64	\$14.59	\$19.15	\$2.47	\$84.85

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$24.77	\$14.59	\$6.13	\$0.00	\$45.49
2	42	\$24.77	\$14.59	\$6.13	\$0.00	\$45.49
3	47	\$27.72	\$14.59	\$12.11	\$1.63	\$56.05
4	47	\$27.72	\$14.59	\$12.11	\$1.63	\$56.05
5	52	\$30.66	\$14.59	\$13.09	\$1.75	\$60.09
6	52	\$30.66	\$14.59	\$13.34	\$1.76	\$60.35
7	60	\$35.38	\$14.59	\$14.75	\$1.94	\$66.66
8	65	\$38.33	\$14.59	\$15.73	\$2.06	\$70.71
9	75	\$44.23	\$14.59	\$17.69	\$2.30	\$78.81
10	85	\$50.12	\$14.59	\$19.15	\$2.52	\$86.38

**Notes:**  
Steps are 6 mos.

**Apprentice to Journeyworker Ratio:1:4**

SPECIALIZED EARTH MOVING EQUIP < 35 TONS	06/01/2024	\$40.24	\$15.07	\$18.67	\$0.00	\$73.98
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2024	\$40.24	\$15.07	\$20.17	\$0.00	\$75.48
	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
	01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2024	\$40.53	\$15.07	\$18.67	\$0.00	\$74.27
	12/01/2024	\$40.53	\$15.07	\$20.17	\$0.00	\$75.77
	01/01/2025	\$40.53	\$15.57	\$20.17	\$0.00	\$76.27
	06/01/2025	\$41.53	\$15.57	\$20.17	\$0.00	\$77.27
	12/01/2025	\$41.53	\$15.57	\$21.78	\$0.00	\$78.88
	01/01/2026	\$41.53	\$16.17	\$21.78	\$0.00	\$79.48
	06/01/2026	\$42.53	\$16.17	\$21.78	\$0.00	\$80.48
	12/01/2026	\$42.53	\$16.17	\$23.52	\$0.00	\$82.22
	01/01/2027	\$42.53	\$16.77	\$23.52	\$0.00	\$82.82
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1</i>	03/01/2024	\$69.04	\$11.51	\$23.30	\$0.00	\$103.85
	10/01/2024	\$70.84	\$11.51	\$23.30	\$0.00	\$105.65
	03/01/2025	\$72.64	\$11.51	\$23.30	\$0.00	\$107.45

**Apprentice - SPRINKLER FITTER - Local 550 (Section A) Zone 1**

**Effective Date - 03/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$24.16	\$11.51	\$12.90	\$0.00	\$48.57
2	40	\$27.62	\$11.51	\$13.70	\$0.00	\$52.83
3	45	\$31.07	\$11.51	\$14.50	\$0.00	\$57.08
4	50	\$34.52	\$11.51	\$15.30	\$0.00	\$61.33
5	55	\$37.97	\$11.51	\$16.10	\$0.00	\$65.58
6	60	\$41.42	\$11.51	\$16.90	\$0.00	\$69.83
7	65	\$44.88	\$11.51	\$17.70	\$0.00	\$74.09
8	70	\$48.33	\$11.51	\$18.50	\$0.00	\$78.34
9	75	\$51.78	\$11.51	\$19.30	\$0.00	\$82.59
10	80	\$55.23	\$11.51	\$20.10	\$0.00	\$86.84

**Effective Date - 10/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$24.79	\$11.51	\$12.90	\$0.00	\$49.20
2	40	\$28.34	\$11.51	\$13.70	\$0.00	\$53.55
3	45	\$31.88	\$11.51	\$14.50	\$0.00	\$57.89
4	50	\$35.42	\$11.51	\$15.30	\$0.00	\$62.23
5	55	\$38.96	\$11.51	\$16.10	\$0.00	\$66.57
6	60	\$42.50	\$11.51	\$16.90	\$0.00	\$70.91
7	65	\$46.05	\$11.51	\$17.70	\$0.00	\$75.26
8	70	\$49.59	\$11.51	\$18.50	\$0.00	\$79.60
9	75	\$53.13	\$11.51	\$19.30	\$0.00	\$83.94
10	80	\$56.67	\$11.51	\$20.10	\$0.00	\$88.28

**Notes:** Apprentice entered prior 9/30/10:  
40/45/50/55/60/65/70/75/80/85  
Steps are 850 hours

**Apprentice to Journeyworker Ratio:1:3**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$55.41	\$15.30	\$16.40	\$0.00	\$87.11
	12/01/2024	\$56.85	\$15.30	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.13	\$15.30	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.57	\$15.30	\$16.40	\$0.00	\$91.27
	06/01/2026	\$60.85	\$15.30	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.29	\$15.30	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$55.41	\$15.30	\$16.40	\$0.00	\$87.11
	12/01/2024	\$56.85	\$15.30	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.13	\$15.30	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.57	\$15.30	\$16.40	\$0.00	\$91.27
	06/01/2026	\$60.85	\$15.30	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.29	\$15.30	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	02/01/2024	\$61.34	\$11.49	\$23.59	\$0.00	\$96.42
	08/01/2024	\$63.44	\$11.49	\$23.59	\$0.00	\$98.52
	02/01/2025	\$64.74	\$11.49	\$23.59	\$0.00	\$99.82
	08/01/2025	\$66.89	\$11.49	\$23.59	\$0.00	\$101.97
	02/01/2026	\$68.24	\$11.49	\$23.59	\$0.00	\$103.32
	08/01/2026	\$70.44	\$11.49	\$23.59	\$0.00	\$105.52
	02/01/2027	\$71.84	\$11.49	\$23.59	\$0.00	\$106.92

**Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile**

**Effective Date - 02/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.67	\$11.49	\$23.59	\$0.00	\$65.75
2	60	\$36.80	\$11.49	\$23.59	\$0.00	\$71.88
3	70	\$42.94	\$11.49	\$23.59	\$0.00	\$78.02
4	80	\$49.07	\$11.49	\$23.59	\$0.00	\$84.15
5	90	\$55.21	\$11.49	\$23.59	\$0.00	\$90.29

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.72	\$11.49	\$23.59	\$0.00	\$66.80
2	60	\$38.06	\$11.49	\$23.59	\$0.00	\$73.14
3	70	\$44.41	\$11.49	\$23.59	\$0.00	\$79.49
4	80	\$50.75	\$11.49	\$23.59	\$0.00	\$85.83
5	90	\$57.10	\$11.49	\$23.59	\$0.00	\$92.18

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2024	\$49.81	\$9.65	\$18.22	\$0.00	\$77.68
	12/01/2024	\$51.28	\$9.65	\$18.22	\$0.00	\$79.15
	06/01/2025	\$52.78	\$9.65	\$18.22	\$0.00	\$80.65
	12/01/2025	\$54.28	\$9.65	\$18.22	\$0.00	\$82.15
	06/01/2026	\$55.83	\$9.65	\$18.22	\$0.00	\$83.70
	12/01/2026	\$57.33	\$9.65	\$18.22	\$0.00	\$85.20
	For apprentice rates see "Apprentice- LABORER"					
TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2024	\$45.60	\$9.65	\$18.22	\$0.00	\$73.47
	12/01/2024	\$47.07	\$9.65	\$18.22	\$0.00	\$74.94
	06/01/2025	\$48.57	\$9.65	\$18.22	\$0.00	\$76.44
	12/01/2025	\$50.07	\$9.65	\$18.22	\$0.00	\$77.94
	06/01/2026	\$51.62	\$9.65	\$18.22	\$0.00	\$79.49
	12/01/2026	\$53.12	\$9.65	\$18.22	\$0.00	\$80.99
	For apprentice rates see "Apprentice- LABORER"					
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2024	\$45.48	\$9.65	\$18.22	\$0.00	\$73.35
	12/01/2024	\$46.95	\$9.65	\$18.22	\$0.00	\$74.82
	06/01/2025	\$48.45	\$9.65	\$18.22	\$0.00	\$76.32
	12/01/2025	\$49.95	\$9.65	\$18.22	\$0.00	\$77.82
	06/01/2026	\$51.50	\$9.65	\$18.22	\$0.00	\$79.37
	12/01/2026	\$53.00	\$9.65	\$18.22	\$0.00	\$80.87
	For apprentice rates see "Apprentice- LABORER"					
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$55.41	\$15.30	\$16.40	\$0.00	\$87.11
	12/01/2024	\$56.85	\$15.30	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.13	\$15.30	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.57	\$15.30	\$16.40	\$0.00	\$91.27
	06/01/2026	\$60.85	\$15.30	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.29	\$15.30	\$16.40	\$0.00	\$93.99
	For apprentice rates see "Apprentice- OPERATING ENGINEERS"					
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2024	\$40.82	\$15.07	\$18.67	\$0.00	\$74.56
	12/01/2024	\$40.82	\$15.07	\$20.17	\$0.00	\$76.06
	01/01/2025	\$40.82	\$15.57	\$20.17	\$0.00	\$76.56
	06/01/2025	\$41.82	\$15.57	\$20.17	\$0.00	\$77.56
	12/01/2025	\$41.82	\$15.57	\$21.78	\$0.00	\$79.17
	01/01/2026	\$41.82	\$16.17	\$21.78	\$0.00	\$79.77
	06/01/2026	\$42.82	\$16.17	\$21.78	\$0.00	\$80.77
	12/01/2026	\$42.82	\$16.17	\$23.52	\$0.00	\$82.51
	01/01/2027	\$42.82	\$16.77	\$23.52	\$0.00	\$83.11
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	06/01/2024	\$57.71	\$9.65	\$19.00	\$0.00	\$86.36
	12/01/2024	\$59.18	\$9.65	\$19.00	\$0.00	\$87.83
	06/01/2025	\$60.68	\$9.65	\$19.00	\$0.00	\$89.33
	12/01/2025	\$62.18	\$9.65	\$19.00	\$0.00	\$90.83
	06/01/2026	\$63.73	\$9.65	\$19.00	\$0.00	\$92.38
	12/01/2026	\$65.23	\$9.65	\$19.00	\$0.00	\$93.88
	For apprentice rates see "Apprentice- LABORER"					

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	06/01/2024	\$59.71	\$9.65	\$19.00	\$0.00	\$88.36
	12/01/2024	\$61.18	\$9.65	\$19.00	\$0.00	\$89.83
	06/01/2025	\$62.68	\$9.65	\$19.00	\$0.00	\$91.33
	12/01/2025	\$64.18	\$9.65	\$19.00	\$0.00	\$92.83
	06/01/2026	\$65.73	\$9.65	\$19.00	\$0.00	\$94.38
	12/01/2026	\$67.23	\$9.65	\$19.00	\$0.00	\$95.88
	For apprentice rates see "Apprentice- LABORER"					
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2024	\$49.78	\$9.65	\$19.00	\$0.00	\$78.43
	12/01/2024	\$51.25	\$9.65	\$19.00	\$0.00	\$79.90
	06/01/2025	\$52.75	\$9.65	\$19.00	\$0.00	\$81.40
	12/01/2025	\$54.25	\$9.65	\$19.00	\$0.00	\$82.90
	06/01/2026	\$55.80	\$9.65	\$19.00	\$0.00	\$84.45
	12/01/2026	\$57.30	\$9.65	\$19.00	\$0.00	\$85.95
	For apprentice rates see "Apprentice- LABORER"					
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2024	\$51.78	\$9.65	\$19.00	\$0.00	\$80.43
	12/01/2024	\$53.25	\$9.65	\$19.00	\$0.00	\$81.90
	06/01/2025	\$54.75	\$9.65	\$19.00	\$0.00	\$83.40
	12/01/2025	\$56.25	\$9.65	\$19.00	\$0.00	\$84.90
	06/01/2026	\$57.80	\$9.65	\$19.00	\$0.00	\$86.45
	12/01/2026	\$59.30	\$9.65	\$19.00	\$0.00	\$87.95
	For apprentice rates see "Apprentice- LABORER"					
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2024	\$40.24	\$15.07	\$18.67	\$0.00	\$73.98
	12/01/2024	\$40.24	\$15.07	\$20.17	\$0.00	\$75.48
	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
	01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53
VOICE-DATA-VIDEO TECHNICIAN <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$34.49	\$13.00	\$17.22	\$0.00	\$64.71
	09/01/2024	\$35.29	\$13.99	\$17.57	\$0.00	\$66.85
	09/07/2025	\$36.12	\$14.98	\$17.91	\$0.00	\$69.01
	09/06/2026	\$37.04	\$15.96	\$18.27	\$0.00	\$71.27

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - VOICE-DATA-VIDEO TECHNICIAN - Local 96**

**Effective Date - 09/03/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.25	\$13.00	\$4.31	\$0.00	\$34.56
2	55	\$18.97	\$13.00	\$4.36	\$0.00	\$36.33
3	60	\$20.69	\$13.00	\$16.81	\$0.00	\$50.50
4	65	\$22.42	\$13.00	\$16.86	\$0.00	\$52.28
5	70	\$24.14	\$13.00	\$16.91	\$0.00	\$54.05
6	75	\$25.87	\$13.00	\$16.97	\$0.00	\$55.84
7	80	\$27.59	\$13.00	\$17.02	\$0.00	\$57.61
8	85	\$29.32	\$13.00	\$17.07	\$0.00	\$59.39

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.65	\$13.99	\$4.41	\$0.00	\$36.05
2	55	\$19.41	\$13.99	\$4.46	\$0.00	\$37.86
3	60	\$21.17	\$13.99	\$17.15	\$0.00	\$52.31
4	65	\$22.94	\$13.99	\$17.20	\$0.00	\$54.13
5	70	\$24.70	\$13.99	\$17.25	\$0.00	\$55.94
6	75	\$26.47	\$13.99	\$17.30	\$0.00	\$57.76
7	80	\$28.23	\$13.99	\$17.36	\$0.00	\$59.58
8	85	\$30.00	\$13.99	\$17.41	\$0.00	\$61.40

**Notes:**

**Apprentice to Journeyworker Ratio:1:1**

WAGON DRILL OPERATOR LABORERS - ZONE 2	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

WAGON DRILL OPERATOR (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2024	\$38.78	\$9.65	\$17.80	\$0.00	\$66.23
	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

WASTE WATER PUMP OPERATOR OPERATING ENGINEERS LOCAL 4	06/01/2024	\$56.03	\$15.30	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.48	\$15.30	\$16.40	\$0.00	\$89.18
	06/01/2025	\$58.78	\$15.30	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.23	\$15.30	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.53	\$15.30	\$16.40	\$0.00	\$93.23
	12/01/2026	\$62.98	\$15.30	\$16.40	\$0.00	\$94.68

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WATER METER INSTALLER <i>PLUMBERS &amp; GASFITTERS LOCAL 12</i>	03/03/2024	\$67.74	\$14.32	\$19.11	\$0.00	\$101.17
	09/01/2024	\$69.54	\$14.32	\$19.11	\$0.00	\$102.97
	03/02/2025	\$71.34	\$14.32	\$19.11	\$0.00	\$104.77

For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"

Additional Apprentices Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentices ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours.)

Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

\*\* Multiple ratios are listed in the comment field.

\*\*\* APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.

\*\*\*\* APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.

PART 1.00 DRAWINGS DEVELOPED SPECIFICALLY FOR THIS CONTRACT

- A. The Following Drawings accompany the Specifications and are a part thereof, and are referred to throughout the Contract Documents as "the Drawings". These drawings are the property of the Owner and shall not be used for any purpose other than that contemplated by this Contract.

<u>Sheet</u>	<u>Title</u>
0.0	Cover Sheet
1.0	Notes & Legend
2.0	Existing Site Plan
3.0	Proposed Site Access Plan
3.1	Proposed Site Plan
3.2	Proposed Planting Plan
4.0	Miscellaneous Details

PART 2.00 DRAWINGS AND SPECIFICATIONS

- A. The Contractor shall keep on the job site, a copy of the Drawings and Specifications and shall, at all times, give the Owner access thereto. Anything mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, shall be of like effect as if shown or mentioned in both.
- B. In cases of conflict between the Drawings and Specifications as to the type of material to be used, the Specifications shall govern. In case of discrepancy either in the figures in the Drawings or in the Specifications, the matter shall be promptly submitted to the Owner who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at his own risk and expense. The Owner may furnish from time-to-time such detailed Drawings and other information as he may consider necessary unless otherwise provided.
- C. In case of conflict between the Drawings and Specifications as to the extent or location of materials, the following order of precedence shall be used: Large scale drawings; Small scale drawings; Finish schedules; Specifications.

END OF SECTION

Lake Maspenock Dam  
Left Downstream Wall Repair Re-Bid  
Milford, MA

**DIVISION 1 - GENERAL**

18255.01  
07/24

**SECTION 01000**  
**SUMMARY OF WORK**

PART 1.00 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings, General Provisions of the Contract, and Division-1 Specification Sections apply to the work of this Section.

1.02 PROJECT IDENTIFICATION:

- A. General: Project name is the Lake Maspenock Dam Left Downstream Wall Repair Re-Bid.
- B. Contract Documents: The work to be performed under this Contract is shown in the Contract Documents prepared by Pare Corporation of Foxboro, Massachusetts.

1.03 SUMMARY OF WORK:

- A. The work required by these specifications shall include furnishing all labor, skill, supervision, tools, construction plant, equipment and materials, and performing all operations necessary to properly complete contract work as shown on the Drawings, as mentioned in these specifications, and as evidently required, to the complete satisfaction of the Owner and the Engineer.
- B. The work is generally to include:
  - 1. Mobilize to the site. Establish access and staging areas.
  - 2. Remove and dispose of hydric soil within the footprint of embankment wall construction excavations. Hydric soil on-site is anticipated to contain invasive species and is not suitable for reuse.
  - 3. Install erosion and sediment control devices as required.
  - 4. Removing and disposing of existing cracking asphalt pavement on the embankment crest
  - 5. Removing and disposing of the approximate 105-foot existing downstream masonry wall left of the spillway
  - 6. Installing of a new cast-in-place concrete wall
  - 7. Installation of riprap toe protection in front of the new concrete retaining wall
  - 8. Rebuilding of the earthen embankment with supplemented embankment fill as needed
  - 9. Repaving the earthen embankment impacted by construction
  - 10. Plant upland and wetland plantings with seeding mix as specified in specifications.
  - 11. Restore site upon project completion. The gravel pathway from the access road shall remain. Demobilize.
- C. The work is located at the Lake Maspenock Dam located off of Pine Island Road in Milford, Massachusetts. Proposed construction activities are within the limits of the Town of Milford, Massachusetts and the Town of Hopkinton, Massachusetts. Equipment and personnel access are via Pine Island Road thru public accessways that will be constructed by the contractor.
- D. During the construction, monitoring will be ongoing and the Contractor shall accommodate the Owner's representatives as necessary
- E. Coordinate all work with the Owner and Engineer and maintain the site in a clean, orderly condition during and upon completion of work.
- F. The Owner will be responsible for maintaining the level of the impoundment in accordance with the

18255.01  
07/24

**SECTION 01000**  
**SUMMARY OF WORK**

Contract Documents.

- G. In cases where the Specifications and Drawings include the provision for particular work, equipment or systems as part of the Contract, but do not completely specify all work incidental to such a provision, or do not provide complete detailed designs for all parts of the provision, then the Contractor will provide or perform such incidental work or necessary design services using generally accepted standards of engineering, material, and construction. All Contractor designs shall be approved in writing by the Engineer prior to proceeding with the work.

1.04 PERMITS

- A. Work should be performed in accordance with the following permits:

1. Wetlands Protection Act Authorization
  - a. Milford Conservation Commission
2. MADCR Office of Dam Safety Permit

PART 2.00 - PRODUCTS

Not Used

PART 3.00 - EXECUTION

Not Used

END OF SECTION



18255.01  
07/24

**SECTION 01019**  
**CONTRACT CONSIDERATIONS**

PART 1.00 - GENERAL

1.01 RELATED SECTIONS

- A. Owner-Contractor Agreement: Contract sum/price including allowances. Bonds and Insurance Requirements.
- B. Section 01700 - Contract Close Out.

1.02 INSPECTION AND TESTING

- A. The Contractor shall be responsible for engaging an inspection or testing firm, execution of inspection or tests, and reporting results.
- B. The Contractor will cooperate with the Owner and provide its agents with the facilities necessary to sample and inspect during each phase of construction at no cost to the Owner. The Contractor shall be responsible for all costs associated with retesting areas that have previously failed.

1.03 APPLICATIONS FOR PAYMENT

- A. Submit three (3) copies of each applications on EJCDC C-620 - Application for Payment Form or AIA Form G.703.
- B. For each item, provide a column for listing: Item Number; Description of Work; Scheduled Value, Previous Applications; Work in Place and Stored Materials under this Application; Authorized Change Orders; Total Completed and Stored to Date of Applications; Percentage of Completion; Balance to Finish; and Retainage.
- C. Present required information in typewritten form.
- D. Execute certification by signature of authorized officer.
- E. Use data from approved Schedule F Values. Provide dollar value in each column for each line item for portion of work performed and for stored Products.
- F. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.
- G. Prepare Application for Final Payment as specified in Section 01700 - Contract Closeout.

1.04 CHANGE PROCEDURES

- A. The Engineer/Owner will advise of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time as authorized by the Engineer/Owner, by issuing written supplemental instructions.
- B. The Engineer/Owner may issue a Notice of Change which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor will prepare and submit an estimate within 7 days.

18255.01  
07/24

**SECTION 01019**  
**CONTRACT CONSIDERATIONS**

- C. The Contractor may propose a change by submitting a request for change to the Engineer/Owner, describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, and the effect on the Contract Sum/Price and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01340. No change will be allowed except under written approval and Notice of Change from the Engineer/Owner, verbal orders are not binding.
- D. Stipulated Sum/Price Change Order: Based on Notice of Change and Contractor's estimated price quotation.
- E. Unit Price Change Order: For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under a Work Directive Change. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.
- F. Work Directive Change: The Engineer/Owner may issue a directive, on EJCDC C-940 Work Directive Change signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute the change.
- G. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract. The Engineer/Owner will determine the change allowable in Contract Sum/Price and Contract Time as provided in the Contract Documents.
- H. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
- I. Change Order Forms: EJCDC C-941 Change Order.
- J. Execution of Change Orders: The Engineer/Owner will issue Change Orders for signature of parties as provided in the Conditions of the Contract.

1.05 SUBSTANTIAL COMPLETION / MILESTONE DATES

- A. Refilling Milestone: Contractor shall sufficiently complete wall reconstruction such that the Town can implement impoundment refill as indicated herein. Sufficiently completing work shall mean completion of wall construction and backfill operations to the elevation of the target impoundment level or final grade, whichever is lower.
- B. Substantial completion shall be considered after a point when all site work is completed including backfill operations, paving, plantings, loam, and seeding. Work to be completed subsequent to substantial completion shall be limited to achieving satisfactory stands of grass in seeded areas, acceptance of wetland restoration plantings, and project closeout requirements.

PART 2.00 – PRODUCTS

Not Used

**18255.01**  
**07/24**

**SECTION 01019**  
**CONTRACT CONSIDERATIONS**

PART 3.00 – EXECUTION

Not Used

END OF SECTION

18255.01  
07/24

**SECTION 01025  
MEASUREMENT AND PAYMENT**

PART 1.00 - GENERAL

1.01 ADMINISTRATIVE SUBMITTALS

- A. Application for Payment: In accordance with the General Conditions and as specified herein.
- B. Final Application for Payment: As specified herein.

1.02 APPLICATION FOR PAYMENT

- A. Reference the General Conditions.
- B. Use separate, detailed Application for Payment Form suitable to Owner for each pay application.
- C. Preparation:
  - 1. List each Change Order and Written Amendment executed prior to date of submission as separate line item.
  - 2. Submit three (3) copies of Application for Payment Form, and such supporting data as may be requested by Owner.

1.03 MEASUREMENT - GENERAL

- A. Reference the General Conditions for additional requirements on Unit Price Work.
- B. All unit prices which are specified for measurement by the linear foot (LF) shall be measured from the beginning to the termination point of the unit being measured.
- C. Units of measure shown on the Bid Form shall be as follows unless specified otherwise.

Item	Method of Measurement
CY	Cubic Yard – Field Measure by Engineer using the Average-End-Area Method to Calculate Volume
LS	Lump Sum-Unit is one; no measurement will be made.
SF	Square Foot-Field Measured by Engineer
SY	Square Yard-Field Measured by Engineer
TON	Ton-Certified Truck Scale

- D. Measurement and payment for all bid items shall include furnishing all equipment, material, plant, and personnel required for completion the work in accordance with the contract documents unless otherwise provided for under a separate bid item.

1.04 PAYMENT

- A. General: Progress payment requests shall be submitted monthly as specified in the General Conditions.
- B. Payment for Lump Sum Work covers all personnel, equipment, materials, and incidentals required to furnish, install and/or complete the Work as specified, indicated, and directed as indicated in the Construction Documents for the following items.
- C. Payment for unit price items covers all personnel, equipment, materials, and incidentals required to furnish, install and/or complete the Work as specified, indicated, and directed as indicated in the

18255.01  
07/24

**SECTION 01025  
MEASUREMENT AND PAYMENT**

Construction Documents for the following items

Bid Item No.	Description
1	<b>Contract Bonds:</b> Furnish Performance, Labor, and Materials Bonds. <i>Measurement for this item shall be lump sum.</i>
2	<b>General Requirements:</b> Provide work plans, schedules, temporary construction facilities, temporary office trailers with amenities and equipment, temporary controls, permits, QC/QA, closeout, easements, As-built survey, Record Drawings, and any other general requirements. Provide project management and field supervisions; attend required project meetings. <i>Measurement for this item shall be lump sum.</i>
3A	<b>Mobilization &amp; Demobilization:</b> Move in personnel, equipment and materials, install necessary signs, and prepare the site for construction. Coordinate and establish staging areas. Protect existing structures, utilities, and site features to remain. Move out personnel, equipment and unused material, clean entire site and staging areas, remove and dispose of signs and remove all debris and rubbish. Restore disturbed areas of the site to their preconstruction condition. <i>Measurement for this item shall be lump sum.</i>
3B	<b>Site Access:</b> Clear trees and remove debris as required to establish proposed access path; protect trees and features to remain. Layout proposed accessway. Furnish and install timber mud mats and temporary access roadway materials. Maintain roadway as required for construction. Remove portions of roadway identified for removal at project completion; restore disturbed areas. Grade and leave portions of gravel roadway identified to remain in place. <i>Measurement for this item shall be lump sum.</i>
4A	<b>Erosion &amp; Sediment Control:</b> Furnish, install, and maintain filter socks, straw bales, silt fence, and any other erosion and sediment control devices as shown on the Drawings and as needed for erosion and sediment control. Remove erosion and sediment controls in their entirety at completion. <i>Measurement for this item shall be lump sum.</i>
4B	<b>Clearing of Vegetation and Stripping of Hydric Soil:</b> Furnish all material, labor, and equipment to clear all vegetation inclusive of woody and herbaceous vegetation, and debris to facilitate construction activities within the proposed area of work; remove and dispose off-site all cleared vegetation. Hydric soil removed for the wall footprint and scour protection shall be disposed of off-site. Remove and dispose of other deleterious material from areas to be restored. Hydric soil is anticipated to contain invasive species and is not anticipated to be suitable for reuse. <i>Measurement for this item shall be lump sum.</i>
5	<b>Demolish Stone Masonry Walls and Removal of Embankment Fill:</b> Furnish all material, labor, and equipment to remove existing pavement on the embankment, demolish downstream walls marked for demolition, removal of existing fill to subgrade soils, and segregation/stockpiling earthen material suitable for reuse to facilitate the installation of the new proposed concrete retaining wall. Stones removed from downstream wall and deemed suitable for reuse for the downstream scour apron shall be stored for reuse. Stone stockpiled as part of this item is not subject for payment under payment item 8B nor 8C. Soil removed and deemed suitable for re-use shall be stockpiled. The re-use of stockpiled soil is subject for payment under payment item 6C. <i>Measurement for this item shall be lump sum.</i>
6A	<b>Installation of Concrete Retaining Wall – Formwork and Reinforcement:</b> Furnish all materials, labor, and equipment to prepare subgrade, form, reinforce, prepare the left training wall, drill and grout anchors, associated with the left downstream retaining wall. Installation of control joints, construction joints, weep holes for drain systems, and waterstops is considered incidental to this bid item. <i>Measurement for this item shall be lump sum.</i>
6B	<b>Installation of Concrete Retaining Wall - Concrete:</b> Furnish all materials, labor, and equipment to place, finish, and cure concrete for the retaining wall sections. Labor, material, and equipment required to prepare surfaces, rebar, and/or formwork shall be paid under payment item 6A. <i>Measurement for this item shall be lump sum.</i>

18255.01  
07/24

SECTION 01025  
MEASUREMENT AND PAYMENT

Bid Item No.	Description
6C	<b>Backfilling of Earthen Embankment:</b> Furnish all materials, labor, and equipment to backfill, compact, and test compaction of the earthen embankment upstream of the left downstream retaining wall. Earthen materials suitable for reuse from this excavation shall be used prior to importing engineered fill material under Item 6D. <i>Measurement for this item shall be lump sum.</i>
6D	<b>Import Supplemental Fill:</b> Furnish supplemental fill materials. Payment for item 6D shall only be exercised once suitable fill under payment item 6C is fully utilized. <i>Measurement for this item shall be per ton of imported soil placed.</i>
7A	<b>Installation of Embankment Drain:</b> Furnish all materials, labor, equipment, to import and install the 3" slotted PVC drainage pipe, 3" PVC drainpipe for weep holes, pea stone, and geotextile for the embankment drain system as shown on the plans. This item is inclusive of the procurement of materials and connections/sealing of the various components, pipe fittings, and animal guards on exposed pipe openings. Removal, Recompacting, and segregating of embankment fill affected during installation of the toe drain is considered incidental to this bid item. <i>Measurement for this item shall be lump sum.</i>
7B	<b>Bituminous Pavement:</b> Furnish all material, labor, and equipment to install bituminous pavement. This item is inclusive of all grading, survey, pavement subbase, binder course, finish course, testing, signage, and all other material, equipment, labor, and incidental or appurtenant work required, as shown on the Drawings, as specified herein, and as approved by the Engineer. <i>Measurement for this item shall be per square yard of pavement placed.</i>
8A	<b>Install Downstream Scour Apron:</b> Furnish all labor and equipment to fill and level the downstream scour apron with geotextile fabric, bedding stone, and riprap. Furnish all labor, material, and equipment to infill bedding stone and riprap with composted mulch. Hydric soil above the riprap as indicated on the Contract Documents, is subject to payment under payment item 9C. <i>Measurement for this item shall be lump sum.</i>
8B	<b>Import Armor Stone:</b> Import and stockpile riprap in quantities sufficient to meet the dimensions and grades. Materials deemed suitable for reuse as armor stone that were stockpiled from stone masonry wall demolition shall be used prior to importing armor stone. <i>Measurement for this item shall be per ton of armor stone placed.</i>
8C	<b>Import Bedding Stone:</b> Import and stockpile bedding stone in quantities sufficient to meet the dimensions and grades. Materials deemed suitable for reuse as bedding stone that were stockpiled from stone masonry wall demolition shall be used prior to importing bedding stone. <i>Measurement for this item shall be per ton of bedding stone placed.</i>
9A	<b>Lawn Restoration:</b> Furnish additional imported Loam Borrow to supplement stockpiled material. Furnish all material, labor, and equipment to place and compact stockpiled and imported Loam Borrow, perform fine grading and raking. Source material testing, liming, and fertilizing is considered incidental to this bid item. Furnish all material, labor, and equipment to import and plant seed. Watering, establishing a healthy stand of grass, and grass maintenance during the growing season is considered incidental to this bid item. Furnish all material, labor, and equipment to grade and rake mulch. <i>Measurement for this item shall be cubic yard of loam imported and installed.</i>
9B	<b>Import Hydric Soil:</b> Import Hydric Soil in areas as denoted on the Contract Documents. Hydric Soil removed to facilitate construction activities is anticipated to contain invasive species and therefore shall not be placed once removed. <i>Measurement for this item shall be cubic yard of hydric soil imported and installed.</i>
9C	<b>Wetland/Upland Restoration:</b> Furnish all material, labor, and equipment to place (imported hydric soil), aerate, fine grading and raking of hydric soil. Source material testing, liming, and fertilizing is considered incidental to this bid item. Furnish all material, labor, and equipment to plant shrubs, wetland seed mixes, and conservation seed mixes as denoted on the Contract Documents. Watering, establishing healthy vegetation, and grass maintenance during the growing season is considered incidental to this bid item. Furnish all material, labor, and

18255.01  
07/24

**SECTION 01025  
MEASUREMENT AND PAYMENT**

Bid Item No.	Description
	equipment to plant wetland and upland plantings as denoted in the Contract Documents. Furnish all material, labor, and equipment to grade and rake mulch around the newly established plantings. <i>Measurement for this item shall be lump sum.</i>

- D. Payment for equipment, materials and labor for items not included on the Bid or described in Article PAYMENT, herein, shall be considered incidental and no separate payment will be made.

1.05 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

- A. Payment will not be made for following:

1. Loading, hauling, and disposing of rejected material.
2. Quantities of material wasted or disposed of in manner not called for under the Contract Documents.
3. Rejected loads of material, including material rejected after it has been placed by Contractor.
4. Material not unloaded from transporting vehicle.
5. Defective Work not accepted by the Engineer.
6. Material remaining on hand after completion of Work.

1.06 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

- A. Final Payment: Will be made only for materials incorporated into the Work in the Contract; no partial payments shall be made for equipment or materials delivered to the site but not used.

1.07 FINAL APPLICATION FOR PAYMENT

- A. Reference the General Conditions, and as may otherwise be required in the Contract Documents.
- B. Prior to submitting final application, make acceptable delivery of required documents.

PART 2.00 - PRODUCTS

Not Used

PART 3.00 - EXECUTION

Not Used

END OF SECTION

18255.01  
07/24

**SECTION 01070**  
**ABBREVIATIONS, SYMBOLS, AND DEFINITIONS**

PART 1.00 - GENERAL

1.01 STANDARD SPECIFICATIONS:

- A. Wherever a reference is made to any standard specifications, it shall mean the most recent specification, code, standard or tentative specification of the organization referred to, and these standard specifications shall be considered a part of these Contract Documents to the extent indicated. Abbreviations which may be used refer to the following organizations:

1. AA Aluminum Association
2. AAMA Architectural Aluminum Manufacturers Association
3. AASHTO American Association of State Highway and Transportation Officials
4. ACI American Concrete Institute
5. AISC American Institute of Steel Construction
6. AISI American Iron and Steel Institute
7. ANSI American National Standards Institute
8. ASTM American Society for Testing and Materials
9. AWS American Welding Society
10. MADEP Massachusetts Department of Environmental Protection
11. MADCR Massachusetts Department of Conservation and Recreation
12. MASSDOT Massachusetts Department of Transportation
13. MHD Massachusetts Highway Department (now MASSDOT)
14. MTA Massachusetts Turnpike Authority
15. NFPA National Fire Protection Association
16. OSHA Occupational Safety and Health Administration
17. PTI Post-tensioning Institute
18. UL Underwriter's Laboratory

1.02 DEFINITIONS

A. General:

A substantial amount of specification language consists of definitions of terms found in other Contract Documents, including the drawings. Certain terms used in Contract Documents are defined in this article. Definitions and explanations contained in this section are not necessarily either complete or exclusive, but are general for the Work to the extent that they are not stated more explicitly in another element of the Contract Documents.

1. Construction Documents: Refers to the contract documents inclusive of the Contractors Bid, the Contract, General Conditions, Supplementary Conditions, Technical Specifications, Permits, and Construction Drawings.
  2. Tree: Refers to woody growth with a trunk diameter equal to or greater than six (6) inches at a height of four (4) feet measured from the ground surface.
  3. Brush: Refers to woody and non-woody vegetation with diameter less than six (6) inches at a height of four (4) feet measurement from the ground surface.
- B. Owner of the Dam: The Town of Hopkinton is the current owner of the property and is referred to as the Owner in the Contract Documents.
- C. Engineer: Refers to the engineer of record, PARE CORPORATION of Foxboro, Massachusetts and its representatives.



18255.01  
07/24

**SECTION 01070**  
**ABBREVIATIONS, SYMBOLS, AND DEFINITIONS**

- D. Regulatory Agencies: Refers to the following agencies having jurisdiction over all or part of the work:
1. Massachusetts Department of Conservation and Recreation Office of Dam Safety
  2. Army Corps of Engineers
  3. MADEP
  4. Local Conservation Commissions
- E. Work: Refers to all construction activities associated with the repairs to the Lake Maspenock Dam as specified in the Contract Documents and specified herein.
- F. Components of the Dam:
1. Downstream: Refers to the area generally south of the dam and spillway.
  2. Upstream: Refers to the area generally north of the dam and the spillway including the impoundment.
  3. Left: In general, this is the area to the left when facing downstream.
  4. Right: In general, this is the area to the right when facing downstream.
  5. Normal Pool: Refers to the elevation of the impoundment during normal operating conditions. The normal pool at Lake Maspenock Dam is the crest of the primary spillway El. 348.0 (NGVD29).
  6. Winter Drawdown: Refers to the reduction in operational level of the Lake Maspenock Dam impoundment from El. 348.0 (NGVD29) to El. 343.0 (NGVD29).

PART 2.00 - PRODUCTS

Not Used

PART 3.00 – EXECUTION

Not Used

END OF SECTION

**SECTION 01200**  
**PROJECT MEETINGS**

PART 1.00 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Owner or Owner's Representative shall schedule and administer the preconstruction conference. The Owner or Owner's Representative shall:
  - 1. Prepare the agenda for the meeting.
  - 2. Notify all parties required to attend meeting.
  - 3. Make physical arrangements for meeting.
  - 4. Preside at meeting.
  - 5. Record the minutes, including significant proceedings and decisions.
  - 6. Reproduce and distribute copies of minutes within seven (7) calendar days after the meeting to participants in the meeting and other parties affected by decisions made at the meeting.
  
- B. The Engineer shall schedule and administer a construction kick off meeting. The Engineer shall:
  - 1. Prepare agenda for meetings.
  - 2. Make physical arrangements for meetings.
  - 3. Preside at meetings.
  - 4. Record the minutes, including significant proceedings and decisions.
  - 5. Reproduce and distribute copies of minutes within seven (7) calendar days after each meeting to participants in the meeting and other parties affected by decisions made at the meeting.
  
- C. Representatives of Contractors, Subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.02 PRE-CONSTRUCTION CONFERENCE

- A. Attendance:
  - 1. Owner and/or representative.
  - 2. Resident project representative.
  - 3. Contractor's superintendent.
  - 4. Major Subcontractors.
  - 5. Major suppliers.
  - 6. Others as appropriate.
  
- B. Suggested Agenda:
  - 1. Distribution and discussion of
    - a. List of major Subcontractors and suppliers.
    - b. Projected construction schedules.
  - 2. Critical work sequencing.
  - 3. Major equipment deliveries and priorities.
  - 4. Project coordination.
    - a. Designation of responsible personnel.
  - 5. Procedures and processing of:
    - a. Field decisions.

18255.01  
07/24

**SECTION 01200  
PROJECT MEETINGS**

- b. Proposal requests.
- c. Submittals.
- d. Change orders.
- e. Applications for payment.
6. Adequacy of distribution of Contract Documents.
7. Procedures for maintaining record documents.
8. Use of premises:
  - a. Office, work and storage areas.
  - b. Owner's requirements.
9. Construction facilities, controls and construction aids.
10. Traffic Maintenance Plan.
11. Temporary utilities.
12. Safety and first-aid procedures.
13. Security procedures.
14. Housekeeping procedures.
15. Place, date and time for regular progress meetings.

1.03 PROGRESS MEETINGS

- A. Conduct scheduled progress meetings at place, dates and times agreed upon at Pre-Construction Conference.
- B. Conduct additional meetings as progress of the Work dictates.
- C. Attendance:
  1. Engineer and his/her professional consultants as needed.
  2. Owner or Representative, when required.
  3. Contractor's superintendent.
  4. Subcontractors as appropriate to the agenda.
  5. Suppliers as appropriate to the agenda.
  6. Others.
- D. Suggested Agenda:
  1. Review approval of minutes of previous meeting.
  2. Review of work progress since previous meeting.
  3. Field observations, problems, and conflicts.
  4. Problems which impede construction schedule.
  5. Review of off-site fabrication, delivery schedules.
  6. Corrective measures and procedures to regain projected schedule.
  7. Revisions to construction schedule.
  8. Progress schedule during succeeding work period.
  9. Maintenance of quality standards.
  10. Pending changes and substitutions.
  11. Coordination of schedules.
  12. Review submittal schedules; expedite as required.
  13. Review proposed changes for:
    - a. Effect on construction schedule and on completion date.
    - b. Effect on subcontracts of the project.
  14. Other business.

**18255.01**  
**07/24**

**SECTION 01200**  
**PROJECT MEETINGS**

PART 2.00 - PRODUCTS

Not Used

PART 3.00 - EXECUTION

Not Used

END OF SECTION

PART 1.00 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, and Division-1 Specification Sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS

- A. General: This section specifies procedural requirements for non-administrative submittals including shop drawings, product data, samples and other miscellaneous work-related submittals. Shop drawings, product data, samples and other work-related submittals are required to amplify, expand and coordinate the information contained in the Contract Documents.

1. Refer to other Division-1 sections and other Contract Documents for specifications on administrative, non-work-related submittals. Such submittals include, but are not limited to the following items:
  - a. Permits.
  - b. Written consents.
  - c. Manifests
  - d. Payment applications.
  - e. Performance and payment bonds.
  - f. Insurance certificates.
  - g. Inspection and test reports.
  - h. Progress reports.
  - i. Listing of Subcontractors.
  - j. Construction schedules.

- B. Shop drawings are technical drawings and data that have been specially prepared for this project, including but not limited to the following items:

1. Fabrication and installation drawings.
2. Coordination drawings (for use on-site).
3. Schedules.
4. Design mix formulas.

- C. Product data includes standard printed information on manufactured products that has not been specially-prepared for this project, including but not limited to the following items:

1. Manufacturer's product specifications and installation instructions.
2. Catalog cuts.
3. Roughing-in diagram and templates.
4. Standard wiring diagrams.
5. Printed performance curves.
6. Operational range diagrams.

- D. Samples are physical examples of work, including but not limited to the following items:

1. Partial sections of manufactured or fabricated work.
2. Small cuts or containers of materials.
3. Complete units of repetitively-used materials.

- E. Miscellaneous submittals are work-related, non-administrative submittals that do not fit in the three previous categories, including, but not limited to the following:
1. Specially-prepared and standard printed warranties.
  2. Project photographs.
  3. Testing and certification reports.
  4. Record drawings.
  5. Field measurement data.
  6. Keys and other security protection devices.

1.03 SUBMITTAL PROCEDURES

- A. General: Refer to the General Conditions for basic procedures for submittal handling.
- B. Coordination: Coordinate the preparation and processing of submittals with the performance of the work. Coordinate each separate submittal with other submittals and related activities such as testing, purchasing, fabrication, delivery and similar activities that require sequential activity.
1. Coordinate the submittal of different units of interrelated work so that one submittal will not be delayed by the Engineer/Owner/Owner's Representative need to review a related submittal. The Engineer/Owner/Owner's Representative reserves the right to withhold action on any submittal requiring coordination with other submittals until related submittals are forthcoming.
- C. Scheduling: In each appropriate administrative submittal, such as the progress schedule, show the principal work-related submittals and time requirements for coordination of submittal activity with related work.
- D. Coordination of Submittal Times: Prepare and transmit each submittal to the Engineer/Owner sufficiently in advance of the scheduled performance of related work and other applicable activities. Transmit different kinds of submittals for the same unit of work so that processing will not be delayed by the Engineer/Owner's need to review submittals concurrently for coordination.
- E. Review Time: Allow sufficient time so that the installation will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary. Advise the Engineer/Owner on each submittal, as to whether processing time is critical to the progress of the work, and if the work would be expedited if processing time could be shortened.
1. Allow seven (7) calendar days for the Engineer/Owner's initial processing of each submittal. Allow a longer time period where processing must be delayed for coordination with subsequent submittals. The Engineer/Owner will advise the Contractor promptly when it is determined that a submittal being processed must be delayed for coordination.
  2. Allow five (5) calendar days for reprocessing each submittal.
  3. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Engineer/Owner sufficiently in advance of the work.
- F. Submittal Preparation: Mark each submittal with a permanent label for identification. Provide the following information on the label for proper processing and recording of action taken.
1. Project name.

**SECTION 01340**  
**SUBMITTALS**

2. Date.
  3. Name and address of Owner.
  4. Name and address of Contractor.
  5. Name and address of supplier.
  6. Name of manufacturer.
  7. Number and title of appropriate specification section.
  8. Drawing number and detail references, as appropriate.
  9. Similar definitive information as necessary.
  10. Provide a space on the label for the Contractor's review and approval markings, and a space for the Engineer/Owner's "Action" marking.
  11. All submittals shall be labeled: Submittal Number (Alpha Revision as required) – Submittal Name – Specification Section Number.
- G. Hardcopy Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit three (3) copies, plus the number of copies the Contractor wants returned to him, after review of each submittal from the Contractor to the Engineer/Owner, and to other destinations as required, by use of a transmittal form. Prepare a separate transmittal form for each division of work and identify each submittal by specification section number on the transmittal form. Submittals received from sources other than the Contractor will be returned to the sender "without action".
1. Record relevant information and requests for data on the transmittal form. On the transmittal form, or on a separate sheet attached to the form, record deviations from the requirements of the Contract Documents, if any, including minor variations and limitations.
  2. No submittals will be accepted by the Engineer/Owner if transmitted via FAX machine.
  3. Include the Contractor's signed certification stating that information submitted complies with requirements of the Contract Documents.
  4. Sequentially number the transmittal forms; resubmittals to have original number with an alphabetic suffix.
- H. Electronic Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit one (1) copy, including a transmittal form to the Contractor's Folder on the project SharePoint site (to be established by Engineer). Emailed submittals shall be sent to the Engineer in the same format. Prepare a separate transmittal form for each division of work and identify each submittal by specification section number on the transmittal form.
1. Record relevant information and requests for data on the transmittal form. On the transmittal form, or on a separate sheet attached to the form, record deviations from the requirements of the Contract Documents, if any, including minor variations and limitations.
  2. Include the Contractor's signed certification stating that information submitted complies with requirements of the Contract Documents.
  3. Sequentially number the transmittal forms; resubmittals to have original number with an alphabetic suffix.
  4. Where appropriate, submittals shall be in Adobe PDF format. Where appropriate, File formats shall be compatible with Microsoft Office 2010.
  5. In the event of a discrepancy between the electronically transmitted submittal and the hardcopy, the hardcopy shall prevail.
  6. Contractor shall be responsible for notifying Engineer in writing when new submittals are posted to the FTP site.

**SECTION 01340**  
**SUBMITTALS**

7. All submittals shall be numbered:  
18255.01\_LakeMaspenockDamLeftDownstreamWallRepair\_SubmittalNo. XX-  
xxxxxxxxxxxxxx".
  - a. Where "XX" is the designated submittal Number.
  - b. Where "xxxxxxxxxxxxxx" is a short description of the submittal content.
- I. Contractor Review: Stamp of approval indicates to Owner and Engineer/Owner that all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data have been determined and verified, and that each submittal has been reviewed or coordinated with requirements of work and Contract Documents.
- J. No portion of Work requiring shop drawings shall be started or any materials be fabricated, delivered to site, or installed prior to approval of such items. Fabrication performed, materials purchased or on-site construction accomplished which does not conform to approved shop drawings and data shall be at Contractor's risk. Owner will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.
- K. Project work, materials, fabrications, and installation shall conform to approved shop drawings.

1.04 SPECIFIC SUBMITTAL REQUIREMENTS

- A. Miscellaneous Submittals:
  1. Inspection and Test Reports: Classify each inspection and test report as being either "shop drawings" or "product data" depending on whether the report is specially prepared for the project, or a standard publication of workmanship control testing at the point of production. Process inspection and test reports accordingly.
  2. Survey Data: Provide copies of all survey data collected for property surveys, field measurements, quantitative records of actual work, damage surveys and similar data required by the individual sections of these specifications. None of the specified copies will be returned.
  3. Standards: Where submittal of a copy of standards is indicated, and except where copies of standards are specified as an integral part of a "Product Data" submittal, submit a single copy of standards for the Engineer/Owner's use. Where workmanship, whether at the project site or elsewhere, is governed by a standard, furnish additional copies of the standard to installers, Owner's field representative, and others involved in the performance of the work.
  4. Closeout Submittals: Refer to section "Project Closeout" and to individual sections of these specifications for specific submittal requirements of project closeout information, materials, tools, and similar items.
    - a. Record Documents: Furnish set of original documents as maintained on the project site.
  5. General Distribution: Provide additional distribution of submittals to Subcontractors, suppliers, fabricators, installers, governing authorities and others as necessary for the proper performance of the work. Include such additional copies of submittals in the transmittal to the Engineer/Owner where the submittals are required to receive "Action" marking before final distribution. Record distributions on transmittal forms.



1.05 ENGINEER/OWNER'S ACTION

- A. General: Except for submittals for the record and similar purposes, where action and return on submittals is required or requested, the Engineer/Owner will review each submittal, mark with appropriate "Action", and where possible return within seven (7) calendar days of receipt. Where the submittal must be held for coordination the Engineer/Owner will so advise the Contractor without delay.
- B. Action Stamp: The Engineer/Owner will stamp, sign and date each submittal copy to be returned to Contractor and indicate disposition of each submittal in accordance with the following grading requirements:
1. "No Exceptions Taken" indicates that Engineer/Owner notes no exception to the intent of the Contract Documents. Fabrication of item may commence.
  2. "Furnish as Corrected" indicates that with minor corrections or additions, Engineer/Owner notes no exception to the intent of the Contract Documents. Item may be fabricated on basis of corrections noted. No further checking will be required.
  3. "Revise and Resubmit". No fabrication may commence.
  4. "Rejected" indicates nonconformance with the contract requirements, or that too many corrections would be necessary. The Engineer/Owner will state the reasons for rejections.
  5. "Submit Specified Item" indicates missing portions of the submissions. Fabrication may commence upon submission and approval of specified item.
  6. "Reviewed" indicates that the Engineer/Owner has received and processed the submittal. No determination of conformance was completed/necessary.
- C. Engineer/Owner Review:
1. Engineer/Owner's review of submitted drawings and data will cover only general conformity to drawings and specification, external connections, and dimensions which affect layout.
  2. Engineer/Owner's review does not indicate thorough review of all dimensions.
  3. Engineer/Owner's review of submittals does not relieve Contractor's responsibility for errors, omissions, or deviations, nor responsibility for compliance with Contract Documents.

1.06 RESUBMISSION REQUIREMENTS

- A. Make any corrections or changes in the submittals required by the Engineer/Owner and resubmit until they are denoted "No Exceptions Taken" or "Furnish as Corrected" by the Engineer/Owner. Resubmission requirements specified in individual specification sections, which differ from these requirements, will take precedence over these requirements.
- B. Shop Drawings and Product Data:
1. Revise initial drawings or data, and resubmit as specified for the initial submittal.
  2. Indicate any changes which have been made other than those requested by the Engineer/Owner.
- C. Samples: Submit new samples as required for initial submittal.

**18255.01**  
**07/24**

**SECTION 01340**  
**SUBMITTALS**

1.07 DISTRIBUTION

- A. Distribute reproductions of shop drawings and copies of product data which carry the Engineer's stamp denoting "No Exceptions Taken" or "Furnish as Corrected" to:
  - 1. Job site file.
  - 2. Record documents file.
  - 3. Subcontractors.
  - 4. Supplier or fabricator.
  
- B. Distribute samples which carry the Engineer/Owner's stamp denoting "No Exceptions Taken" or "Furnish as Corrected" as directed by the Engineer/Owner.

PART 2.00 - PRODUCTS

Not Used

PART 3.00 - EXECUTION

Not Used

END OF SECTION

18255.01  
07/24

**SECTION 01400**  
**QUALITY CONTROL/QUALITY ASSURANCE**

PART 1.00 - GENERAL

1.01 SECTION INCLUDES

- A. Quality Control that the Contractor will perform during the performance of this work.
- B. Quality Assurance that the Owner will perform during the performance of this work.

1.02 SUBMITTALS

- A. Submit Quality Control Plan to the Owner/Owner's Representative at least three (3) calendar days before starting work which includes the following information:
  - 1. Statement and description of Contractor's overall Quality Control (QC) program as described below. Each Sub-contractor shall submit a separate QC program applicable to their scope of work to the Contractor.
  - 2. Procedures to be used in obtaining field samples of materials except where required for submittal under other sections.
  - 3. Name, qualifications, and prior experience of inspection and testing laboratories that Contractor proposes for Owner/Owner's Representative's consideration.

1.03 QUALITY CONTROL (QC) PROGRAM

- A. Formulation, Submission, Details and Acceptance of Plan:
  - 1. Contractor shall develop a QC program appropriate to the scale of the project.
  - 2. The plan shall identify personnel, and establish procedures, instructions, records, and forms to be used.
  - 3. The Contractor's QC Plan shall include as a minimum, the following:
    - a. A description of the Contractor's QC organization, including a chart showing lines of authority, and acknowledgement that the Contractor's QC staff shall conduct inspections for all aspects of the work specified.
    - b. The name, qualifications, responsibilities, and authority of each person assigned to the Contractor's QC function.
    - c. Procedures for scheduling and managing submittals, including those of Subcontractor, fabricators, suppliers, and purchasing agents.
    - d. Control procedures to be promulgated.
    - e. Control testing procedures for each specific test, including field sampling.
    - f. Reporting procedures including proposed reporting formats.
  - 3. Acceptance of Plan: Acceptance of the Contractor's plan by the Owner/Owner's Representative is required prior to the start of construction. Acceptance is conditional, and its continuation will depend on satisfactory performance by the Contractor during construction. The Owner/Owner's Representative reserves the right to require the Contractor to make changes in the Contractor's QC Plan and operations as necessary to obtain the quality specified at no additional cost to the Owner.
  - 4. Notification of Changes: After acceptance of the Contractor's QC Plan, the Contractor shall notify the Owner/Owner's Representative in writing of any proposed change. The proposed changes will be subject to acceptance by the Owner/Owner's Representative.

**SECTION 01400**  
**QUALITY CONTROL/QUALITY ASSURANCE**

B. Implementation of QC Plan:

1. General:
  - a. Comply with the highest industry standards except when specified requirements indicate more rigid standards, or more precise workmanship is required.
  - b. Provide personnel to produce work of specified quality.
  - c. Secure, protect, and maintain products and Work completed or in progress from damage during the progress of remaining Work.
2. Preparatory Inspection: This shall be performed prior to beginning any segment of Work. It shall include a review of Contract requirements; a check to assure that all materials and or equipment are on hand, and have been tested, samples submitted and approved; a check to assure that provisions have been made to do required control testing; examination of the work that has been completed; and a physical examination of materials, equipment and sample work to assure that they conform to approved shop drawings or submittal data. Contractor shall instruct each Subcontractor contributing work as to the acceptable level of workmanship required in the Contractor's QC Plan in order to meet Specifications.
3. Initial Inspection: This shall be performed as soon as a representative portion of a particular segment of Work has been accomplished, and shall include examination of the quality of workmanship and materials, a review of control testing for compliance with Contract requirements, and inspection for omissions and dimensional requirements.
4. Follow-up Inspections: These shall be performed regularly to assure continuing compliance with Contract requirements, including control testing, until Completion. Final follow-up inspections shall be conducted and deficiencies corrected prior to final acceptance of segments of Work.
5. Tests: A list of QC tests, and the frequency of their performance, which the Contractor understands he is to perform, and on which he is to submit reports shall satisfy the requirements described under 3.03(B) of this section.
6. Prompt turn-around is required for all analyses, so as not to jeopardize the project schedule. Verbal turn-around time on soil samples is not to exceed 48 hours and written turn-around time is not to exceed 72 hours.
7. The Contractor shall submit the list of tests, and the frequency of their performance, as a part of the Contractor's QC Plan, to the Owner/Owner's Representative. The list shall give the test name, Specification Paragraph containing the test requirements, and the personnel and laboratory responsible for each type of test. The Contractor shall perform the following activities:
  - a. Verify that testing procedures comply with Contract requirements.
  - b. Verify that facilities and testing equipment are available and comply with testing standards.
  - c. Check test instrument calibration data against certified standards.
  - d. Verify that recording forms, including all of the test documentation requirements, have been prepared.
8. Testing for Laboratory Capability:
  - a. Capability Check: Owner/Owner's Representative shall have the right to check laboratory equipment in proposed laboratories for compliance with testing procedures.
  - b. Capability Rechecks: If the selected laboratory(ies) fails the capability check the Contractor shall be assessed actual costs to reimburse the Owner/Owner's Representative for each succeeding recheck of the laboratory or the checking of a subsequently-selected laboratory.

**SECTION 01400**  
**QUALITY CONTROL/QUALITY ASSURANCE**

9. Documentation:
  - a. The Contractor shall maintain records of QC operations, activities and tests performed including the work of suppliers and Subcontractors. These records shall be on an acceptable form and shall include a description of the trades working on the project, the number of personnel working, weather conditions encountered, and delays encountered, and acknowledgement of deficiencies noted along with corrective actions taken on current or previous deficiencies. Additionally these records shall include evidence that required activities or tests have been performed, including but not limited to the following:
    - i. Type and number of control activities and tests performed.
    - ii. Results of control activities or tests, including nature of any defects, causes for rejection, and other information related to deficient features.
    - iii. Proposed remedies and accomplished corrections.
  - b. These records shall cover both conforming and defective features, and shall include a statement that supplies and materials incorporated in the Work comply with the Contract requirements. Legible copies of these records shall be submitted to the Owner/Owner's Representative.
  - c. Notification of Noncompliance: Owner/Owner's Representative will notify the Contractor or his designated representative of any observed noncompliance with requirements of this Section. If the Contractor fails or refuses to comply promptly, the Owner/Owner's Representative may issue an order stopping all or part of the Work until satisfactory corrective action has been taken.

1.04 QUALITY ASSURANCE (QA) PROGRAM

- A. The Contractor shall provide for all costs associated with implementing a QA testing program within the bid price for General Requirements.
- B. In general, QA testing will be performed at a frequency equal to about 10 percent of the QC testing frequency or as directed by the Owner/Owner's Representative.

1.05 WEIGHTS AND MEASURES

- A. The Contractor shall weigh and measure its own materials.
- B. Give one copy of each delivery's weight or measurement to Owner/Owner's Representative prior to stockpiling or storage.

1.06 REFERENCE STANDARDS

- A. Where reference to an industry standard does not include a date of issue, conform to issue current as of date of Contract Documents.
- B. Where reference to an industry standard includes a date of issue, conform to issue current as of the date specified.

1.07 INSPECTION AND TESTING LABORATORIES

- A. Independent testing laboratories shall perform inspections, tests, and other services specified in individual specification sections, the Contractor's Quality Control Plan, and as required for QA by the Owner/Owner's Representative.

18255.01  
07/24

**SECTION 01400**  
**QUALITY CONTROL/QUALITY ASSURANCE**

- B. Reports and test results shall be submitted by the independent testing laboratory directly to the Owner, indicating observations and results of tests and indicating compliance or noncompliance with the requirements of the specifications.
- C. Contractor shall provide access to the work and fully cooperate with laboratory firms. Notify Owner at least 48 hours prior to expected time when work is ready for inspection, sampling, or testing, if not otherwise specified for the particular work to be tested.
- D. Retesting required due to nonconformance to specified requirements shall be performed by the same independent testing laboratories on instructions from the Owner/Owner's Representative. Retesting costs shall be borne by the Contractor and will not be applied to any unit price items.

**PART 2.00 – PRODUCTS**

**2.01 MATERIALS**

- A. See applicable Specification Sections for types of material and equipment used on this project.

**PART 3.00 – EXECUTION**

**3.01 PRECONSTRUCTION TESTING**

- A. Prior to construction, identify sources for soil, rock, and bituminous materials and test samples of each material from each source to determine whether they meet the required material specifications.
- B. Document all tests. Materials shall be accepted or rejected according to the test results.
- C. All material evaluation tests shall be performed by the independent testing laboratory retained by the Contractor and approved for use by the Owner/Owner's Representative.

**3.02 CONSTRUCTION TESTING**

- A. Document all tests. Some or all of the following tests shall be performed in the evaluation of the in place properties of soil and rock materials.
  - 1. ASTM C31 – Making and Curing Test Specimens in the Field
  - 2. ASTM C39 – Compressive Strength of Cylindrical Concrete Specimens
  - 3. ASTM C143 – Concrete Slump Test
  - 4. ASTM D422 – Particle Size Analysis
  - 5. ASTM D1557 – Moisture/Density Relationship
  - 6. ASTM D2216 – Moisture Content
  - 7. ASTM D1556 – Density of Soil in Place by Sand-Cone Method
  - 8. ASTM D2216 – Laboratory Determination of Water Content
  - 9. ASTM D2922 – Density of Soil in Place by Nuclear Methods
  - 10. ASTM D3017 – Water Content of Soil in Place by Nuclear Methods
- B. Further material testing may be necessary if alternative sources of material are required during construction or, if based on visual inspection during delivery to the site, it appears that a material

**SECTION 01400**  
**QUALITY CONTROL/QUALITY ASSURANCE**

change (color, grain size, plasticity) has occurred. Additional source testing due to change of material shall be borne by the Contractor and will not be applied to any unit price items.

- C. Questions concerning the accuracy of any single test shall be addressed by retesting.

3.03 QC TESTING FREQUENCY

- A. All QC testing shall be conducted in accordance with the Contractor’s QC Plan. Documentation and reporting of test results shall be the responsibility of the Contractor.
- B. Testing frequencies for material evaluation and construction quality evaluation are presented in the following table.

Material	Responsible Party	Situation	Test	Minimum Frequency
Earthwork Materials	Contractor	Source Investigation	Grain Size through 0.002 mm Moisture Density Relationship	1 per source 1 per source
	Contractor	During Placement	Grain Size through 0.002 mm Moisture Density Relationship	1 per 200 tons 1 per 200 tons
	Contractor	As-Placed	Dry Density and As-Placed Moisture	2 per lift per location or activity and no less than 1 every 500 sf
Loam Borrow	Contractor	During Placement	PH, Nitrogen, Phosphorous, Potassium, and USDA Classification	2 per Acre
Riprap	Contractor	Source Investigation	Source Material Certification Specific Gravity	1 per source 1 per source
	Contractor	During Placement	Source Material Certification Specific Gravity	1 per 500 tons 1 per 500 tons
Mortar	Contractor	Source Investigation	property specification of ASTM C 270.	1 per source
	Contractor	During Placement	Per ASTM C 780 for compressive strength, consistency, mortar aggregate ratio, water content, air content, and splitting tensile strength.	1 per batch
Grout	Contractor	During Placement	Per ASTM C 1019 for compressive strength and slump	1 per batch
Concrete	Contractor	During Placement	Strength, slump, Air Entrainment, Temperature	See Section 03300
Bituminous Pavement	Contractor	Arrival on-site During Placement After Placement	Temperature	See ASTM D3666

- C. Sampling locations shall be approved by the Owner/Owner’s Representative.
- D. A special testing frequency shall be used at the discretion of the Owner when visual observations of construction performance indicate a potential problem. Additional testing for suspected areas shall be considered when:
1. Rollers slip during rolling operations
  2. Lift thickness appears greater than specified
  3. Fill appears to be at improper and/or variable moisture content
  4. Dirt-clogged rollers are used to compact the material
  5. Rollers may not have used optimum ballast
  6. Materials appear substantially different from those specified
  7. The degree of compaction is doubtful
  8. Directed by the Owner

18255.01  
07/24

**SECTION 01400**  
**QUALITY CONTROL/QUALITY ASSURANCE**

E. During construction, the frequency of testing may also be increased in the following situations:

1. Adverse weather conditions
2. Breakdown of equipment
3. At the start and finish of grading
4. Material fails to meet specification
5. The work area is reduced

3.04 QA TESTING FREQUENCY

A. In general, QA testing will be performed at a frequency equal to about 10 percent of the QC testing frequency or as directed by the Owner/Owner's Representative.

3.05 DEFICIENCIES

- A. If a defect is discovered, the Contractor shall immediately determine the extent and nature of the defect.
1. If the defect is indicated by unsatisfactory test results, the Contractor shall determine the extent of the deficient area by additional tests, observations, a review of records, or other means that the Contractor deems appropriate. Costs for additional testing shall be borne by the Contractor and not applied to any unit price items.
  2. If the defect is related to adverse site conditions, such as overly wet soils or surface desiccation, the Contractor shall define the limits and nature of the defect.
- B. After determining the extent and nature of a defect, the Contractor shall notify the Owner/Owner's Representative and schedule for defect repair and retesting.
- C. The Contractor shall correct the deficiency to the satisfaction of the Owner/Owner's Representative. If the project specification criteria cannot be met, or if unusual weather conditions hinder work, then the Contractor shall develop and present to the Owner/Owner's Representative suggested solutions for his approval.
- D. All retests by the Contractor must verify that the defect has been corrected before any additional work is performed by the Contractor in the area of the deficiency. The Contractor shall also verify that all installation requirements are met and that all required submittals are provided.

END OF SECTION



18255.01  
07/24

**SECTION 01500  
TEMPORARY CONSTRUCTION FACILITIES**

PART 1.00 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, and Division-1 Specification Sections, apply to work of this section.

1.02 REQUIREMENTS INCLUDED

- A. Furnish, install and maintain temporary construction facilities required for construction, **as required by the Contractor's means and methods**, and remove at completion of work. This specification does not require that such facilities be provided; however, any facilities installed shall meet the minimum requirements specified herein.
- B. Section includes but is not limited to requirements for:
  - 1. Field offices.
  - 2. Miscellaneous construction facilities.
  - 3. Temporary utility connections.

1.03 REQUIREMENTS OF REGULATORY AGENCIES

- A. Comply with National Electric Code.
- B. Comply with Federal, State and Local Codes, Laws, Ordinances, and Regulations and with utility company requirements.

1.04 SUBMITTALS

- A. Submit drawings within ten (10) calendar days of starting work to Engineer for approval, showing layout, furnishings, and facilities of field office trailer and information concerning how Contractor proposes to furnish utilities.

1.05 JOB CONDITIONS

- A. Scheduled Uses: Provide temporary construction facilities at time first needed at the site; and maintain, expand and modify facilities as needed throughout construction period.
- B. Conditions of Use: Operate, maintain, control and protect support facilities in a manner which will prevent fire, hazardous exposures, health problems, unsanitary conditions, pollution, contamination, discomfort to users, flooding, freeze-up, interference with construction work, public nuisances and similar deleterious effects.
- C. The Owner is not responsible for damage to any or all facilities due to severe natural occurrences, vandalism, or negligence on the part of the Contractor. The Contractor shall take all necessary precautions to protect and deter potential theft and vandalism within the construction site.

18255.01  
07/24

**SECTION 01500  
TEMPORARY CONSTRUCTION FACILITIES**

1.06 COSTS

- A. Include all costs associated with furnishing, installing and removing Engineer's and Contractor's field offices, and providing all utilities, equipment, furnishings, services, maintenance, and removal.
- B. Include all costs for providing continuous electric, water, sewer, heating/air conditioning, and telephone services to offices throughout construction period.

PART 2.00 - PRODUCTS

2.01 MATERIALS, GENERAL

- A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.
- B. Coordinate interruptions of permanent utilities with utility companies and affected users.
- C. Contractor's Office:
  - 1. The Contractor shall provide its own field offices and such other temporary housing as it may need for storage or fabrication purposes and completely remove at the completion of the work.
  - 2. Provide storage space for all shop drawing submittals, project samples, field laboratory test data and analyses, and other project related information.
  - 3. Store all documents in fire-proof, lockable cabinets.
  - 4. The Contractor and Subcontractors shall arrange for and have installed a telephone or provide phone(s) for the use of their own field offices and personnel.

2.02 MISCELLANEOUS CONSTRUCTION FACILITIES

- A. Storage Sheds:
  - 1. General: Install individual storage sheds as required by the contractor to accommodate the work; sized, furnished and equipped properly. Sheds are defined to include both open shelters and fully enclosed spaces.
  - 2. Chain link fence be installed around all construction facilities and staging areas as required to prevent damage and loss of construction equipment and materials due to vandalism and trespassing.
- B. Sign Materials:
  - 1. Except as otherwise indicated, provide exterior type plywood of sizes and thickness indicated. Provide exterior-grade acrylic-latex-base enamel for painting sign panels and applying required graphics.
  - 2. Provide necessary signage in accordance with all applicable standards and regulations. Signage shall include but is not limited to:
    - a) DEP Permit File sign(s)
    - b) Traffic Control Signage

18255.01  
07/24

**SECTION 01500  
TEMPORARY CONSTRUCTION FACILITIES**

C. Temporary Site Access

1. Temporary access ways shall be established by the Contractor as required to facilitate access to the low level outlet.

PART 3.00 - EXECUTION

3.01 INSTALLATION OF SUPPORT FACILITIES

- A. General: Use qualified tradesmen for installation of support facilities. Locate facilities where they will serve the total project construction work adequately, and result in minimum interference with performance of the work. Relocate, modify and extend facilities as required during course of the work, to properly accommodate entire work of project. Locate field offices for easy access to construction work, and positioned so that windows give best possible view of construction activities. Provide a reasonably neat and uniform appearance in support facilities, acceptable to Engineer, and to Owner.
- B. Maintain and operate temporary utility systems to assure continuous service.
- C. Modify and extend temporary utility systems as work progress requires.

3.02 INSTALLATION

- A. Contractor's Office (if installed):
  1. Install office at or near site of work. Office to be headquarters of authorized representative to receive drawings, instruction or other communication or articles.
  2. Contractor to keep copies of drawings, specifications and other Contract Documents at office at site of work and make readily available for Owner or Owner's representative's use at all times.
- B. Connect field offices to temporary utilities as required. Include backfill to connect telephone, electric, water and sewer utility lines; if applicable, insulate and heat the water and sewer lines to the extent necessary to prevent freezing. All sewer, water, electric, and telephone services shall be continuously connected and in proper working order.

3.03 MAINTENANCE

- A. Field offices to be maintained in a clean condition.
- B. Maintain adequate supply of paper towels, paper cups, toilet paper, soap and other supplies as required by the Engineer.
- C. Janitorial Services:
  1. Toilet facilities to be cleaned and disinfected weekly.
  2. Provide clean parking area and walkway therefrom with snow removal as required by Engineer.
  3. Replenish all supplies as required by Engineer.

**18255.01**  
**07/24**

**SECTION 01500**  
**TEMPORARY CONSTRUCTION FACILITIES**

3.04 REMOVAL OF TEMPORARY CONSTRUCTION FACILITIES

- A. Completely remove temporary materials and equipment when their use is no longer required.
- B. Upon completion of work of all trades and before final acceptance of entire project, each trade shall remove, at its own expense, all wiring, appurtenances and accessories used in performance of its respective work.
- C. Temporary sheds, utilities, barricades, signs, and other appurtenances related to prosecution of the work and not incorporated in the permanent construction shall be completely removed from the site prior to acceptance of work by Owner.

END OF SECTION

18255.01  
07/24

**SECTION 01510  
TEMPORARY UTILITIES**

PART 1.00 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, and Division 1 Specification Sections, apply to work of this section.

1.02 REQUIREMENTS INCLUDED

- A. Furnishing, installing, and maintaining temporary utilities to support construction including **as required by the Contractor's means and methods**, and remove at completion of work. This specification does not require that such facilities be provided; however, any facilities installed shall meet the minimum requirements specified herein.

- 1. Electricity and Lighting
- 2. Heating and Ventilation
- 3. Water
- 4. Sanitary Facilities

- B. Furnishing, installing, and maintaining sanitary facilities to support construction.

1.03 TEMPORARY ELECTRICITY AND LIGHTING

- A. Arrange with utility company to provide all power for heating, lighting, operation of equipment, or for any other required use.
  - 1. Pay costs for service and for power used.
- B. Install circuit and branch wiring, with area distribution boxes located so that power and lighting is available throughout construction by use of construction-type power cords.
- C. Provide artificial lighting for areas of work when natural light is not adequate for work, and for areas accessible to public.
- D. Furnish all extension cords, sockets, lamps, motors and accessories for work. Ground all outlets.
- E. All temporary wiring, service equipment and accessories thereto installed shall be removed at expense of Contractor after serving its purpose.

1.04 TEMPORARY HEATING AND VENTILATION

- A. Provide temporary heating when temperature falls below 50 deg. F and as otherwise required to:
  - 1. Maintain working conditions acceptable to Engineer.
  - 2. Protect all work, materials, and equipment against damage from dampness or cold.
  - 3. Dry out structures.
  - 4. Maintain proper conditions for installation and curing of materials.
- B. Heating equipment and fuels shall be compatible for their particular purpose and shall include safety devices in accordance with industry standards.

18255.01  
07/24

**SECTION 01510  
TEMPORARY UTILITIES**

- C. Do not use combustion type heaters without proper venting nor in areas where such equipment might introduce a hazard.
- D. Ensure that all enclosed areas are ventilated (using forced-draft equipment when necessary) as required to maintain proper conditions for personnel and work, and to avoid any accumulation of hazardous dust or fumes.
- E. Pay costs associated with furnishing, installing, maintaining, operating, and removing of heating and ventilation equipment.

1.05 TEMPORARY WATER

- A. Furnish all water required for and in connection with work to be done under this Contract.
- B. Pay costs associated with furnishing, installing, maintaining, operating, and removing of water-related equipment.

1.06 TEMPORARY SANITARY FACILITIES

- A. Furnish temporary sanitary facilities at site for needs of all construction workers and others performing work or furnishing services on project.
- B. Ensure that sanitary facilities are:
  - 1. Of a capacity acceptable to Engineer.
  - 2. Maintained throughout construction period.
  - 3. Obscured from public view to greatest extent possible and secured to prevent vandalism.
- C. Furnish at least one toilet for each 10 workers if toilets of chemically treated type are used.
- D. Service, clean, and maintain facilities and enclosures.
- E. Enforce use of such sanitary facilities by all personnel at site.
- F. Pay costs associated with furnishing, installing, maintaining, operating and removing sanitary facilities.

PART 2.00 - PRODUCTS

Not Used

PART 3.00 - EXECUTION

Not Used

END OF SECTION

18255.01  
07/24

**SECTION 01560  
TEMPORARY CONTROLS**

PART 1.00 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings, General Provisions of contract, and Division 1 Specification Sections, apply to work of this section.

1.02 REQUIREMENTS INCLUDED

- A. Controlling and protecting the Contractor's operations and work.
- B. Furnishing, installing and operating temporary controls during construction for:
  - 1. Dewatering
  - 2. Noise
  - 3. Dust
  - 4. Surface Water
  - 5. Pollution
  - 6. Debris and Clean Up
  - 7. Air Pollution
  - 8. Public Safety
  - 9. Weather

1.03 SITE ACCESS

- A. The Contractor shall protect the public during all phases of the work inclusive of deliveries and construction phases.
- B. The Contractor shall erect construction fencing and post adequate signage to alert the public that the area is closed during construction.
- C. Site access shall be limited to construction personnel only.

1.04 WEATHER PROTECTION

- A. It is the intent of these Specifications to require that the Contractor shall provide temporary enclosures and heat to permit construction work to be carried on during the months of November through March. Under no circumstances shall the Contractor suspend any work during the months of November through March because of their reluctance to provide and pay for temporary weather protection. These Specifications are not to be construed as requiring enclosures or heat for operations that are not economically feasible to protect in the judgment of the Engineer.
- B. "WEATHER PROTECTION" shall mean the temporary protection of that work adversely affected by moisture, wind, and cold, by covering, enclosing and/or heating. This protection shall provide adequate working areas during the months of November through March as determined by the Engineer and consistent with the approved construction schedule to permit the continuous progress of all work necessary to maintain an orderly and efficient sequence of construction operations. The Contractor shall furnish and install all "weather protection" material and be responsible for all costs, including heating required to maintain a minimum temperature of 50 degrees F at the working surface. This provision does not supersede any

18255.01  
07/24

**SECTION 01560  
TEMPORARY CONTROLS**

specific requirements for methods of construction, curing of materials or the applicable general conditions set forth in the Contract Articles with added regard to performance obligations of the Contractor.

- C. The cost of providing and installing weather protection is the responsibility of the Contractor. Additional work or time spent installing the weather protection shall not be eligible for additional payment
- D. Installation of weather protection and heating devices shall comply with all safety regulations including provisions for adequate ventilation and fire protection devices. Heating devices which may cause damage to finish surfaces shall not be used.

1.05 PRIVATE LAND

- A. The Contractor shall not enter or occupy private land outside of easements, except by written permission of the property owner. Furnish Owner copies of all agreements the Contractor has with property owners to enter or occupy private lands.

1.06 CARE AND PROTECTION OF PROPERTY

- A. The Contractor shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in other manner acceptable to the Engineer.
- B. Along the location of this work, all fences, walks, bushes, trees, shrubbery and other physical features shall be protected and restored in a thoroughly workmanlike manner. All grass areas beyond the limits of construction which have been damaged by the Contractor shall be regraded and seeded as necessary, subject to the approval of the Engineer.
- C. Trees close to the work shall be boxed or otherwise protected against injury. The Contractor shall trim all branches that are likely to be damaged because of his operations, but in no case shall any tree be cut or removed without prior notification of the Engineer. All injuries to bark, trunk, limbs, and roots of trees shall be repaired by dressing, cutting and painting according to approved methods, using only approved tools and materials, subject to the approval of the Owner.
- D. The protection, removal, and replacement of existing physical features along the line of work shall be a part of the work under the Contract, and all costs in connection therewith shall be included in the unit and/or lump sum prices established under the items in the proposal.

1.07 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. The Contractor shall assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains, electric and telephone cables, and cesspools adjacent to trench excavations, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from injury of any kind. Any



18255.01  
07/24

**SECTION 01560  
TEMPORARY CONTROLS**

damage resulting from the Contractor's operations shall be repaired by him at his expense, to the damaged items original condition.

- B. The Contractor shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water, gas, electric and telephone services, drain lines, and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by the Contractor.
- C. Protection and temporary removal and replacement of existing utilities and structures as described in this section shall be a part of the work under the contract and all costs in connection therewith shall be included in the unit prices established in the proposal.
- D. Contractor shall note and protect buried utilities and pipes with the limits of work and anticipated staging areas.

1.08 MAINTENANCE OF FLOW

- A. The Contractor shall, at his own cost, maintain the flow of water courses during the progress of the work.

1.09 PROTECTION OF WORK

- A. The Contractor shall at all times protect excavations, trenches, new construction, old construction, all job materials, apparatus and fixtures from rain, wind, snow, ice, dust, dirt, mud, groundwater, back-up or leakage of sewers, drains, or other piping, and from water of any other origin, and shall remove promptly any accumulation of the above. He shall provide and operate all pumps, piping and other equipment necessary to this end at no additional cost to Owner.
- B. Thoroughly protect all completed work and all stored materials.
- C. Provide boards, cloths, planks, waterproof paper, canvas or other approved protection and use as necessary to prevent any damage.
- D. Provide protective measures to prevent damage to lawns, trees and shrubs to remain after project is complete.
- E. Protect, at end of each day's work, such work that may be liable to damage by the elements.
- F. Replace or rectify work or materials damaged by workmen, by the elements or by any other cause, to the satisfaction of the Engineer and at no additional expense to the Owner.
- G. Repair streets, curbs, sidewalks, poles, grass, shrubs, trees, or other existing site features, if disturbed by building operations, in a manner satisfactory to the Owner/Engineer at no additional cost to the Owner. Structures disturbed as part of construction activity shall be restored, at a minimum, to their preconstruction condition.
- H. Do not allow workers, including those of any Subcontractor or supplier, to mark finish surfaces with marking pens or other such devices which are not readily erasable.

18255.01  
07/24

**SECTION 01560  
TEMPORARY CONTROLS**

- I. Contractor shall be responsible for any and all damage to the Owner provided materials once delivered to the site. All materials shall be handled, stored, and installed in accordance with the manufacturers recommendations.

1.10 TRAFFIC CONTROLS

- A. The Contractor shall be responsible for setting up and maintaining signage altering the public and residents of any closures of parking spaces, driveways, roadways, or sidewalks within the area because of work associated with this project.
- B. Provide proper detour signage if main thoroughfares on are to be closed down.
- C. Provide barricades at either end of closed roadway, sidewalks, or driveway sections.

1.11 SECURITY

- A. The Contractor shall take all precautions necessary to prevent loss or damage caused by vandalism, theft, burglary, pilferage, or unexplained disappearance of property of the Owner or Contractor, whether or not forming part of the work, located within the limits of work. The Contractor shall have full responsibility for the security of such property located in such areas and shall reimburse the Owner for any such loss, damage, or injury, except such as may be directly caused by agents or employees of the Owner.

1.12 SUBMITTALS

- A. Seven (7) calendar days prior to closing any access roads, the Contractor shall submit to the Engineer a Traffic Management Plan indicating the following:
  - 1. Roadway or parking lot scheduled for closure.
  - 2. Signage type and locations to be installed by the Contractor to alert the public of the closures and detour around the closure.

The plan does not need to be stamped; however, the plan shall provide a sensible path for the public to detour around the work area.

PART 2.00 – MATERIALS

Not Used

PART 3.00 - EXECUTION

3.01 INTERFERENCE WITH EXISTING STRUCTURES

- A. Whenever it may be necessary to cross or interfere with existing culverts, drains, water pipes, water fixtures, guardrails, fences, overhead wires, or other structures needing special care, due notice shall be given to the Owner and to the various public and private agencies or individuals responsible for the utility or structure that is interfered with. Whenever required, all objects shall be strengthened to meet any additional stress that the work herein specified may impose upon it, and any damage caused shall be thoroughly repaired. The entire work shall be the responsibility

18255.01  
07/24

**SECTION 01560  
TEMPORARY CONTROLS**

of the Contractor and the work shall be performed at no additional expense to the Owner. All damaged items of work or items required to be removed and replaced due to construction shall be replaced or repaired by the Contractor to the complete satisfaction of the property Owners and/or the Engineer at no additional expense to the Owner.

3.02 REMOVAL OF WATER AND PROTECTION FROM FLOODING

- A. The Contractor shall construct and maintain, at no additional expense to the Owner, all pumps, drains, well points or any other facility for the control and collection of groundwater and/or surface water and provide all pumps and piping for the removal of water from the trenches and excavations so that all trenches and excavations may be kept at all times free from water and so that all construction work may be performed in the dry. Any damage resulting from the failure of the dewatering operations of the Contractor and any damage resulting from the failure of the Contractor to maintain the areas of all work in a suitable dry condition shall be repaired by the Contractor as directed by the Engineer at no additional expense to the Owner. The Contractor's pumping and dewatering operations shall be carried out in accordance with MADEP regulations and in such a manner as to prevent damage to existing structures and utilities and the contract work and so that no loss of ground will result from these operations. Precautions shall be taken to protect new and existing work from flooding during storms or from other causes. Pumping shall be continuous where directed by the Engineer to protect the work and/or to maintain satisfactory progress. All pipelines or structures not stable against uplift during construction or prior to completion shall be thoroughly braced or otherwise protected. Water from the trenches, excavations and drainage operations shall be pumped to a dewatering bag within the downstream channel in such a manner as will neither cause release of sediment, public nuisance, nor cause injury to public health nor to public or private property nor to the work completed nor to the work in progress. No extra payment will be made for the removal of water, protection from flooding, drainage work, diversion of existing water courses and such other work, but compensation therefore shall be considered as having been included in the prices stipulated for the appropriate items of work as listed in the bid.

3.03 NOISE CONTROL

- A. The Contractor shall employ all reasonable measures to avoid unnecessary noise and ensure that noise is appropriate for normal ambient sound levels in the work area during working hours. Where required by agencies having jurisdiction, certain noise - producing work may have to be performed during specified periods only. Noise control measures during normal work hours shall include but not be limited to:
1. Operate machinery in a manner to cause least noise consistent with efficient performance of work.
  2. Equip all construction machinery and vehicles with sound-muffling devices.
  3. During construction adjacent to occupied buildings, erect screens or barriers to reduce noise in building to limits in accordance with applicable codes. Conduct operations in such a manner as to avoid unnecessary noise, which might interfere with activities of building occupants.
- A. Any work beyond normal working hours required approval by the Owner. When the Contractor's work extends beyond normal working hours the Contractor shall incorporate to the complete satisfaction of the Owner and Engineer, adequate noise prevention measures to insure minimum noise impact on the surrounding areas. Noise prevention measures shall include, but not be limited to:

18255.01  
07/24

**SECTION 01560  
TEMPORARY CONTROLS**

1. Insulated enclosures.
  2. Hospital grade silencers or mufflers.
  3. Equipment modification.
  4. Special equipment, as necessary to meet Town noise guidelines.
  5. Any other noise prevention measures.
- B. Should at any time the Owner and/or Engineer determine that noise prevention measures are inadequate, the Contractor shall suspend all such work in question until acceptable measures are incorporated. Suspension of work due to inadequate noise prevention shall not be a cause for additional cost to the Owner.
- C. Prior to the start of any work outside normal work hours, the Contractor shall submit a Noise Control plan to the Owner and Engineer for review. Noise Control plans shall be submitted for:
1. Night work.
  2. All Pumping operations and work which extend beyond normal work day.
  3. Any other work as determined by the Engineer which warrants special noise prevention measures.
- E. All costs associated with noise control measures shall be considered part of the bid price for appropriate work being completed.

3.04 DUST CONTROL

- A. At no additional cost to the Owner take measures to prevent unnecessary dust.
1. Keep all earth, concrete, and all other surfaces that are subject to dusting moist with water only.
  2. Cover dusty materials in piles or in transit to prevent blowing.
  3. Maintain a moist surface when saw-cutting or hammering concrete.
- B. Protect buildings or operating facilities which may be affected adversely by dust.
- C. Protect existing or new machinery, motors, instrument panels, or similar equipment with dust screens.
1. Include proper ventilation with dust screens.

3.05 SURFACE WATER CONTROL

- A. Provide for drainage of storm water and such water as may be applied or discharged on site in performance of work.
- B. Ensure that drainage facilities are adequate to prevent damage to work, site, and adjacent property.
1. Clean, enlarge, or supplement existing drainage channels to carry all increased runoff attributable to operation.
  2. Construct dikes to:
    - a. Divert increased runoff from entering adjacent property (except in natural channels).
    - b. Protect the work.

**SECTION 01560  
TEMPORARY CONTROLS**

- c. Direct water to drainage channels or conduits.

3.06 POLLUTION CONTROL

- A. Prevent pollution of drains and watercourses by sanitary wastes, sediment, debris, and other substances resulting from construction activities.
  - 1. In order to protect waterbodies from hazardous materials releases by the construction equipment involved in this project, fueling and greasing of equipment shall take place off-site or within the limits of the proposed access roads; equipment must be in good condition and inspected for leaks; spill control and cleanup equipment shall be stored on site; and the Contractor shall be responsible for all cleanup and remediation of hazardous materials releases.
  - 2. Do not allow sanitary wastes to enter any drain or watercourse other than sanitary sewers.
  - 3. Do not allow sediment, debris, or other substance to enter sanitary sewers and take measures to prevent such materials from entering any drain or watercourse.
  - 4. All earthwork, grading, moving of equipment, water control and other operations likely to create silting, shall be planned and conducted so as to avoid pollution of the water body and its tributaries. Water used for any purpose which has become contaminated with oil, bitumen, salt, or other pollutions shall be discharged so as to avoid affecting nearby waters. Under no circumstances shall pollutants be discharged directly into the water body or and its tributaries.
  - 5. All concrete repair work requiring cleaning and removal of debris is to be contained as not to contaminate the surrounding environment.

3.07 DEBRIS AND CLEANUP

- A. Keep all premises free at all times from accumulation of waste materials and rubbish.
  - 1. Immediately after unpacking, remove and dispose of all packing materials, case lumber, excelsior, wrapping, or other rubbish from site.
- B. Provide trash receptacles about site, and empty containers daily.
- C. Neatly stack construction materials, such as concrete forms and scaffolding, when not in use.
- D. Promptly remove splattered concrete, asphalt, oil, paint, corrosive liquids, and cleaning solution from surfaces to prevent marring or other damage to satisfaction of Engineer.
- E. Ensure that wastes are not buried or burned on site or disposed into storm drains, sanitary sewers, steams, or waterways.
  - 1. Remove all wastes from site and dispose in a manner complying with local ordinances and antipollution laws.
  - 2. Store volatile wastes in covered metal containers and remove daily.
- F. Cleanup as determined by the Engineer will be a condition for recommendation of progress payment application.
  - 1. Contractor shall have full responsibility for cleaning up during and immediately upon completion of work. Remove all rubbish, waste, tools, equipment, and appurtenances caused

18255.01  
07/24

**SECTION 01560  
TEMPORARY CONTROLS**

by and used in execution of work, leaving site clean, free of debris and in condition acceptable to Engineer.

2. Equipment or material shall not be left within any work area after acceptance of Contract without written permission of Engineer. Do not abandon any material at or near site regardless of its value.

3.08 PUBLIC SAFETY

- A. At all times until final acceptance of Work by Owner, the Contractor shall protect Work and shall take all precautions of preventing injuries to persons or damage to property on or about site.
- B. Contractor shall comply with all applicable laws, ordinances, rules, and regulations regarding safety of persons or property or with regard to protecting them from damage, injury, or loss and shall not load or permit any part of work to be placed so as to endanger safety of work.
- C. If Contractor constructs temporary bridges or provides temporary crossing of streams, Contractor's responsibility for accidents shall include roadway and sidewalk approaches as well as structure of such crossings.
- D. Conduct work such that abutters shall have reasonable access to their property. Contractor shall be responsible for providing such reasonable safe means of access to public way as Engineer deems essential. When it is necessary to leave materials and equipment upon highway or Town or town way, place them so as to cause least possible obstruction to drainage, pedestrian, and other travel.

3.09 WEATHER PROTECTION

- A. See Section 1.03 of this Specification.

3.10 REMOVAL OF TEMPORARY CONTROLS

- A. Completely remove temporary materials and equipment when their use is no longer required.
- B. Upon completion of work of all trades and before final acceptance of entire project, each trade shall remove, at it's own expense, all wiring, appurtenances and accessories used in performance of its respective work
- C. Temporary sheds, utilities, barricades, signs, and other appurtenances related to prosecution of the work and not incorporated in the permanent construction shall be completely removed from the site prior to acceptance of work by Owner.

END OF SECTION

18255.01  
07/24

**SECTION 01600**  
**MATERIAL AND EQUIPMENT**

PART 1.00 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Material and Equipment Incorporated into the Work:
  - 1. Conform to applicable specifications and standards.
  - 2. Comply with size, make, type and quality specified, or as specifically reviewed by the Engineer.
- B. Manufactured and Fabricated Products:
  - 1. Design, fabricate and assemble in accordance with the best engineering and shop practices.
  - 2. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
  - 3. Two or more items of the same kind shall be identical, by the same manufacturer.
  - 4. Products shall be suitable for service conditions.
- C. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically reviewed by the Engineer.
- D. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.02 MANUFACTURER'S INSTRUCTIONS

- A. When the Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, as specified in Section 01340, SUBMITTALS.
- B. Maintain one set of complete instructions at the job site during installation and until completion.
- C. Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions and in conformity with specified requirements.
- D. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.
- E. Do not proceed with work without clear instructions.
- F. Perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by the Contract Documents.

1.03 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site and also when two or more trades, Contractors, or suppliers are involved.

18255.01  
07/24

**SECTION 01600**  
**MATERIAL AND EQUIPMENT**

- B. Transport all materials and equipment on legally approved conveyances as required or recommended by the respective manufacturer or supplier.
- C. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
- D. Receive and handle all materials and equipment, at the project site, by conveyances or methods as recommended by the respective manufacturer or supplier to prevent damage to products.
- E. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and reviewed submittals, and that products are properly protected and undamaged.
- F. Remove from the site any material or item of equipment damaged during the transportation or handling process, and immediately replace at no additional cost to the Owner.

1.04 STORAGE AND PROTECTION

- A. Store products in accordance with the manufacturer's instructions, with seals and labels intact and legible.
- B. Store products subject to damage by the elements in weather tight enclosures.
- C. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
- D. Maintain all storage areas in a clean and orderly condition at all times.

1.05 EXTERIOR STORAGE

- A. Store fabricated products above the ground, on blocking or skids, prevent soiling or staining. Cover products, which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
- B. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.
- D. Replace any material or item of equipment damaged, due to inadequate storage protection, and immediately replace at no additional cost to the Owner.

1.06 PROTECTION AFTER INSTALLATION

- A. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.



18255.01  
07/24

**SECTION 01600**  
**MATERIAL AND EQUIPMENT**

1.07 CERTIFICATES OF CONFORMANCE AND MANUFACTURE

- A. In addition to other requirements specified herein, the Contractor shall furnish to the Engineer, as specified in Section 01340, SUBMITTALS, notarized certificates of conformance and manufacture that all materials and/or equipment to be furnished under this contract meet the specification requirements. When directed, each shipment of material shall be accompanied by the manufacturer's notarized certificates of conformance and manufacture. Unless otherwise specifically specified, all testing of materials shall be provided by the Contractor at no additional expense to the Owner.
  
- B. Each manufacturer's certificate shall be endorsed or accompanied by the Contractor's certificate that the material certified by the manufacturer will be the material incorporated in the work.

PART 2.00 - PRODUCTS

Not Used

PART 3.00 - EXECUTION

Not Used

END OF SECTION

18255.01  
07/24

**SECTION 01700**  
**CONTRACT CLOSEOUT**

PART 1.00 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Comply with requirements stated in conditions of the contract and in specifications for administrative procedure in closing out the work.

1.02 SUBSTANTIAL COMPLETION

- A. When Contractor considers the work is substantially complete, he shall submit to Owner.
  - 1. A written notice that the work, or designated portion thereof, is substantially complete.
  - 2. A list of items to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, Owner will review the work to determine the status of completion.
- C. Should Owner determine that the work is not substantially complete:
  - 1. Owner will promptly notify the Contractor in writing, giving the reasons therefore.
  - 2. Contractor shall remedy the deficiencies in the work, and send out another written notice of substantial completion to the Owner.
  - 3. Owner will again review the work.
- D. When Owner concurs that the work is substantially complete, he will:
  - 1. Prepare a certificate of substantial completion, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by the Owner.
  - 2. Submit the certificate to Contractor and manufacturer for their written acceptance of the responsibilities assigned to them in the certificate.

1.03 FINAL REVIEW

- A. When Contractor considers the work is complete, he shall submit written certification that:
  - 1. Contract documents have been reviewed.
  - 2. Work has been inspected for compliance with Contract Documents.
  - 3. Work has been completed in accordance with Contract Documents.
  - 4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
  - 5. Work is completed and ready for final review.
- B. Owner will make final review to verify the status of completion with reasonable promptness after receipt of such certification. Final review shall include operation of the gate.
- C. Should Owner consider that the work is incomplete or defective:
  - 1. Owner will promptly notify the Contractor in writing, listing the incomplete or defective work.
  - 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send out another written certification to Owner that the Work is complete.

18255.01  
07/24

**SECTION 01700  
CONTRACT CLOSEOUT**

3. Owner will again review the Work.
  - D. When the Owner finds that the Work is acceptable under the Contract Documents and that all punch list items have been accomplished to his satisfaction, he shall request the Contractor to make closeout submittals.
- 1.04 FEES FOR ADDITIONAL REVIEWS
- A. Should Owner perform additional reviews due to failure of the Work to comply with the claims of status of completion made by the Contractor:
    1. Owner will be compensated for such additional services.
    2. Owner will deduct the amount of such compensation from the final payment to the Contractor.
- 1.05 CONTRACTOR'S CLOSEOUT SUBMITTALS TO OWNER
- A. Operating and Maintenance Data:
    1. Instruct the Owner's personnel with regard to equipment, systems and operating specialties which are installed as part of this project.
    2. Submit brochures indicating operating instructions and maintenance schedules for all equipment, systems, operating devices and specialties, as specified in Section 01340, SUBMITTALS.
    3. Submit detailed maintenance methods and schedules for all materials and equipment provided in this project, as specified in Section 01340, SUBMITTALS.
  - B. Warranties, Guarantees, and Bonds:
    1. In addition to the Warranty and Guarantee Requirements of the General Conditions, provide all other guarantees, bonds, affidavits and certifications required throughout the specifications.
  - C. Spare parts and maintenance materials for Owner.
  - D. Contractor's affidavit of payment of debts and claims.
  - E. Contractor's affidavit of release of liens.
  - F. Consent of surety to final payment.
  - G. Certificate of insurance for products and completed operations.
  - H. Project Record Drawings
- 1.06 FINAL ADJUSTMENT OF ACCOUNTS
- A. Submit a final statement of accounting to Owner.
  - B. Statement shall reflect all adjustments to the contract sum:

18255.01  
07/24

**SECTION 01700**  
**CONTRACT CLOSEOUT**

1. The original contract sum.
  2. Additions and deductions resulting from:
    - a. Previous change orders.
    - b. Allowances.
    - c. Unit prices.
    - d. Deductions for uncorrected work.
    - e. Deductions for liquidated damages.
    - f. Deductions for re-inspection payments.
    - g. Other adjustments.
  3. Total contract sum, as adjusted.
  4. Previous payments.
  5. Sum remaining due.
- C. Owner will prepare a final change order reflecting approved adjustments to the contract sum which were not previously made by change orders.

1.07 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit the final application for payment in accordance with procedures and requirements stated in the General Conditions.

PART 2.00 - PRODUCTS

Not Used

PART 3.00 - EXECUTION

Not Used

END OF SECTION

18255.01  
07/24

**SECTION 01720**  
**PROJECT RECORD DOCUMENTS**

PART 1.00 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Maintain at the site, for the Owner, one record copy of
  - 1. Drawings
  - 2. Specifications
  - 3. Addenda
  - 4. Change orders and other modifications to the contract
  - 5. Engineer field orders or written instructions
  - 6. Reviewed shop drawings, product data and samples
  - 7. Field test records
- B. The Contractor will be required to furnish, at no additional expense to the Owner, the services of a surveyor and/or Engineer registered in the state where the project is located and under whose direction shall be obtained and recorded all surveys, measurements and such other data required for the determination of the as-built records of the construction of all site work.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Store documents and samples in Contractor's field office apart from documents used for construction.
- B. Provide locked file cabinet for storage of documents.
- C. Provide locked cabinet space for storage of samples.
- D. File documents and samples in accordance with CSI/CSC format.
- E. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- F. Make documents and samples available at all times for inspection by the Engineer and Owner.

1.03 MARKING DEVICES

- A. Provide felt tip marking pens for recording information in the color code designated by Owner/Owner's Representative.

1.04 RECORDING

- A. Label each document "Project Record" in neat large printed letters.
- B. Record information concurrently with construction progress.
- C. Do not conceal any work until required information is recorded.
- D. Drawings: Principal dimensions, elevations and other data, as required, shall be recorded for all work, such as:

18255.01  
07/24

**SECTION 01720**  
**PROJECT RECORD DOCUMENTS**

1. Deviations of any nature made during construction.
  2. Location of underground utilities.
  3. Field changes of dimension and detail.
  4. Changes made by field order or by change order.
  5. Details not on original contract drawings.
- E. The marked-up prints shall be inspected weekly by the Owner/Owner's Representative and shall be corrected immediately if found either inaccurate or incomplete.
- F. Specifications and Addenda: Legibly mark each section to record:
1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
  2. Changes made by field order or by change order.

1.05 FINAL MEASUREMENTS

- A. The Contractor shall provide qualified personnel and equipment for taking final measurements for quantities and record documents.
- B. Final measurements shall include topographic survey of sufficient detail to provide 1-foot contours within the limits of work and the alignment of the channel and water body resulting from the dam removal.

1.06 RECORD DRAWINGS

- A. At the completion of the project, the record prints shall be submitted to the Owner for final review and comment. The record drawings shall include, at a minimum:
1. As-built topographic survey of the dam left of the spillway, extending approximately 75-feet in all directions beyond the limits of the upstream, left training, and downstream wall.
  2. Property line survey for all parcels within the limits of survey.

Survey shall collect sufficient data to develop 1-foot contours referenced to NAVD88 and NAD83 state plane horizontal control. Conversion factors to the datum on the construction drawings shall be provided.

Deliverable shall include a stamped hard copy of the plan plus AutoCAD Civil 3D format electronic files.

- B. The Contractor shall correct, amplify and do all other work as may be required by the Engineer to complete the drawings in a manner satisfactory to the Engineer and at no additional cost to the Owner.
- C. Upon approval, the Contractor shall provide a full size final record drawing set in PDF format to the Engineer.

1.07 SUBMITTAL

- A. At contract close-out, deliver record documents to the Owner.

**18255.01**  
**07/24**

**SECTION 01720**  
**PROJECT RECORD DOCUMENTS**

- B. Accompany submittal with transmittal letter in duplicate, containing:
1. Date
  2. Project title and number
  3. Contractor's name and address
  4. Title and number of each record document
  5. Signature of Contractor or his authorized representative

**PART 2.00 - PRODUCTS**

Not Used

**PART 3.00 - EXECUTION**

Not Used

END OF SECTION

Lake Maspenock Dam  
Left Downstream Wall Repair Re-Bid  
Milford, MA

**DIVISION 2 – SITE WORK**



**18255.01**  
**07/24**

**SECTION 02005**  
**MOBILIZATION/DEMobilIZATION**

PART 1.00 - GENERAL

1.01 WORK INCLUDED

- A. This section covers the work necessary to move in personnel and equipment, set up Contractor's temporary offices, buildings, facilities, utilities, prepare the site for construction, establish access ways, and demobilize.
- B. Work associated with temporary offices, buildings, facilities, and utilities shall be provided only as required by the Contractor's means and methods. The contract does not require the provision of temporary offices, building, facilities, or utilities.

1.02 GENERAL

- A. The limits of the site and areas designated for Contractor staging are shown on the Drawings.
- B. The extent of the limits of work are shown on the drawings. Any activities by the Contractor beyond the limits of work shall be the responsibility of the contractor to coordinate as necessary with the property owner.
- C. In the event additional space is required for the Contractor's operations, the Contractor shall make its own arrangements and pay for such additional space.

PART 2.00 PRODUCTS

2.01 TEMPORARY FACILITIES

- A. The Contractor shall obtain necessary permits, coordinate, and provide all temporary facilities as required for performing the work, including any facilities specified for the Owner's or the Engineer's use.
- B. The Contractor shall design, furnish, and install all temporary foundations, utility connections, and access points as necessary to meet the contractor's means and methods for completing the work. All temporary structures and utility connections shall be installed in accordance with environmental and municipal permits and be removed in their entirety and restored to their pre-construction conditions at the completion of the work.

2.02 TEMPORARY UTILITIES

- A. The Contractor shall coordinate for and obtain the necessary permits for provision of or connection to these services.

2.03 SECURITY FENCE

- A. Construct temporary security fence as required for the protection of the Contractor's materials, tools, and equipment. Maintain fence during construction.

18255.01  
07/24

**SECTION 02005  
MOBILIZATION/DEMobilIZATION**

PART 3.00 EXECUTION

3.01 LAYOUT

- A. Set up construction facilities in a neat and orderly manner within the Contractor's staging area and at a location acceptable to the Owner. Accomplish all required work in accordance with applicable portions of these Specifications. Confine operations within the general work limits shown.

3.02 DEMOBILIZATION

- A. At the completion of the work and immediately prior to final inspection, clean the entire project area removing all debris, soil, and rubbish.
  - 1. Should the Contractor not remove rubbish, debris, or not clean the facilities and site as specified above, the Owner reserves the right to have final cleaning done by others at the sole expense of the Contractor.
- B. The Contractor shall:
  - 1. Employ experienced workers or professional cleaners for final cleaning.
  - 2. Conduct final inspection of concealed spaces in preparation for Contract completion.
  - 3. Remove from the property temporary structures and materials, equipment, and appurtenances not required as part of, or appurtenant to, the completed work.
  - 4. Restore the site to preconstruction conditions using imported hydric soils for the reestablishment of wetlands as required per permits.
  - 5. Leave watercourse, gutters, and ditches open and in condition satisfactory to Owner and/or Engineer.
- C. At the completion of the work, the Contractor shall:
  - 1. Restore all fencing, driveways, signs, roadway shoulders, walkways, trees, curbing, catch basins, and manhole covers that have been removed, disturbed or damaged.
  - 2. Restore all roadways, parking areas, and disturbed areas to preconstruction condition.
  - 3. Clean all roadways and parking areas of accumulated sediment.

PART 4.00 PAYMENT

4.01 MEASUREMENT

- A. Measurement for mobilization and demobilization shall be lump sum.

4.02 PAYMENT

- A. Payment for mobilization and demobilization shall be lump sum.
- B. The lump sum payment for mobilization and demobilization cannot exceed 10% of the total base bid.
- C. Up to Sixty (60) percent of the lump sum is payable upon completion of mobilization activity and

18255.01  
07/24

**SECTION 02005  
MOBILIZATION/DEMobilIZATION**

start of the work in earnest.

- D. The balance of the lump sum is payable upon completion of site restoration and demobilization of materials and equipment from the project site.

4.03 PAYMENT ITEMS

<u>Item No.</u>	<u>Payment Item</u>	<u>Unit</u>
3	Mobilization and Demobilization	Lump Sum

END OF SECTION

**18255.01**  
**07/24**

**SECTION 02050**  
**DEMOLITION AND REMOVAL**

PART 1.00 - GENERAL

1.01 WORK INCLUDED

- A. This section covers the work associated with but not limited to:
  - 1. The removal and offsite disposal of the existing left downstream masonry wall.
  - 2. The removal and offsite disposal of existing asphalt pavement.
  - 3. The removal and offsite disposal of existing embankment observation well material.
- B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.02 SUBMITTALS

- A. The Contractor shall submit to the Owner and Engineer a schedule of removal and disposal.
- B. Contractor shall submit a plan showing location of materials to be stockpiled and stored for resetting.
- C. Contractor shall submit disposal site certification and haul roads for all disposal.
- D. Permits for transport and disposal of debris.
- E. Permits and notices authorizing demolition.
- F. Certificates of utility services severances.

1.03 PERMITS AND CODES

- A. All work shall comply with all codes, rules, regulations, laws and ordinances for the local municipality, the Commonwealth of Massachusetts, and all other authorities having jurisdiction. All work necessary to make site demolition comply with such requirements shall be provided without additional cost to the Owner.
- B. The Contractor shall procure and pay for all permits and licenses required for work under this Section.
- C. The Contractor shall not close or obstruct any streets or passageways, unless and until the Contractor shall have first secured all necessary municipal, state, or other permits thereof. No material whatsoever shall be placed or stored nor shall parking be permitted in streets or passageways. No material whatsoever shall be stored in areas denoted as wetlands. The Contractor shall conduct operations to interfere as little as possible with the use ordinarily made of both on-site and off-site roads, driveways, sidewalks, and other facilities near enough to the work to be affected thereby.

1.04 DISPOSITION OF EXISTING UTILITIES

- A. Active utilities existing on the site shall be carefully protected from damage and relocated or removed within limits of the work. The Contractor shall verify that loads from construction equipment will not adversely affect known utilities.
- B. If an active utility line is exposed during construction, its location and elevation shall be recorded and

18255.01  
07/24

**SECTION 02050  
DEMOLITION AND REMOVAL**

both the Contractor and Engineer, the Owner and property Owner shall be notified in writing.

1.05 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining driveways, parking lots, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the Engineer or Owner and authorities having jurisdiction.
  - 2. Provide alternate routes and signage around closed or obstructed traffic ways.
- B. Utility Locator Service: Notify a utility locator service for area where the project is located before commencing any site work.
- C. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place and all permits are obtained.
- D. The Contractor is responsible for all construction phase permits including but not limited to: NPDES Construction General Permit, Construction Phase Storm Water Pollution Prevention Plan, and all other applicable permits, registrations, notifications, and applications.

PART 2.00 - PRODUCTS

2.01 GENERAL

- A. The Contractor shall provide all materials and equipment in suitable and adequate quantity as required to accomplish the work shown and specified.
- B. The Contractor shall not use any explosives for demolition.

PART 3.00 - EXECUTION

3.01 WORKMANSHIP

- A. Prior to demolition or removing any materials from the site coordinate with Owner to confirm all items the Owner would like to salvage have been marked or removed from the site.
  - 1. The Owner reserves the right to designate the placement of removed stone masonry blocks elsewhere on the site.
  - 2. The Contractor may elect, with the approval of the Owner/Engineer, to process the removed stone masonry blocks for the use of riprap stone protection.
- B. Take all possible precautions to avoid damaging those materials which are to be salvaged or reused on the site.
- C. Demolition work shall be carried out in a careful and orderly manner. Provide adequate protection to persons and property on the site.
- D. Do not commence work until trees and other items to be saved have been protected as directed by the Engineer and as shown on the site plan in the field. Protection shall remain and be maintained

18255.01  
07/24

**SECTION 02050  
DEMOLITION AND REMOVAL**

for the duration of the work.

- E. Do not burn any material or debris on the site.
- G. Take all possible precautions to avoid damaging those materials which are to be salvaged or reused on the site.

3.02 EARTHEN EMBANKMENT

- A. Prior to commencing removal of the embankment, review the layout of the proposed downstream wall with the Owner to determine potential interferences and temporary grades for working space and formwork installation. Complete removal and stockpile of materials indicated by the Owner and Engineer.
- B. Remove and dispose of existing asphalt pavement on the left earthen embankment.
- C. Remove and dispose of existing observation well material of the previously installed observation well. Material included, but not limited to: PVC pipe, metal road box, j plug, etc.
- D. Remove and stockpile necessary embankment fill to allow for the form work and working space associated with the downstream masonry wall to be installed.
- E. Remove and dispose accumulated sediment and debris resulting from the embankment removal not specified above but is considered incidental to the work.

3.03 DOWNSTREAM WALL

- A. Prior to commencing wall demolition, the contractor shall layout the limits of selective demolition at the left training wall for review and approval by the Engineer. Partial demolition of stone facing may be required to support determining limits of selective demolition.
- B. Remove and dispose off-site of stone masonry blocks, should stone masonry blocks be not deemed as re-usable for the downstream wall riprap toe protection by the Owner.
- C. Remove and dispose of off-site all concrete and cementitious materials.

3.04 TITLE, SALVAGE, AND REUSE

- A. Property belonging to public bodies or public service companies shall not become the property of the Contractor, unless written authorization is given by the Engineer.
- B. The Owner has first privilege to the suitable excess earthwork material excavated from the site and not reused on the site. Material shall be stockpiled and the Owner notified in writing. If the Owner declines the material, the Contractor shall remove and properly dispose of the material at no additional cost to the Owner.
- C. All other salvage and materials resulting from the Demolition work shall become the property of the Contractor unless otherwise directed by the Engineer or specified herein or on the Contract Drawings to be stockpiled and shall be removed from the site.
- D. The existing condition of all materials specified to be: Removed and Reset, Removed and

18255.01  
07/24

**SECTION 02050  
DEMOLITION AND REMOVAL**

Stockpiled, or Removed and Stockpiled for the Owner; shall be recorded in a video provided in electronic format to the Engineer for approval. Any damage or condition not noted in the recorded video approved by the Engineer will be deemed damage caused by the Contractor and the Contractor shall replace the feature at no additional cost to the Owner.

3.05 REMOVAL

- A. Remove and legally dispose of, at no cost to the Owner, all materials and debris scheduled for disposal resulting from the Demolition work except those specified herein to be stockpiled. Leave the site in safe and clean condition.

3.06 RESTORATION OF SITE ITEMS

- A. Wherever streets, lawns or other items outside the Contract Limit Lines have been disturbed in fulfilling the work required under this Contract, the Contractor shall furnish and install all material at no cost to the Owner to bring finish surfaces level with the existing adjacent conditions. All work shall be installed to match the existing conditions. Notify the proper authorities prior to restoring surfaces outside the Limit of Work to assure conformance to existing requirements.

3.07 GENERAL

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Conduct demolition operations in a manner that will prevent damage to adjacent structures, utilities, pavements and other facilities to remain.
- C. Cease operations immediately if any damage, settlement or other adverse effect on adjacent structures occurs. Immediately notify the Engineer and regulatory authorities. Do not resume operations until conditions are corrected, damage repaired, and approval received from the Engineer.
- D. Protect existing site improvements to remain from damage during construction.
  - 1. Restore damaged improvements to their original condition, as acceptable to Engineer.

3.08 SITE IMPROVEMENTS

- A. Remove and reinstall/replace existing above- and below-grade features as necessary to facilitate new construction.
- B. Remove and reset objects at the site access points as required to access the site.
- C. Replace/Reset driving surfaces damaged by equipment access.

3.09 DISPOSAL

- A. No burning of combustible materials will be permitted. Remove all demolition materials from the work site and dispose of in accordance with all federal, state, and local codes, regulations, and ordinances.

END OF SECTION

18255.01  
07/24

**SECTION 02110  
TREE REMOVAL, CLEARING, GRUBBING, AND STRIPPING**

PART 1.00 - GENERAL

1.01 WORK INCLUDED

- A. This section covers the work necessary to cut and remove (stump removal not required) all trees as required for establishing access and staging areas.
- B. This work shall also include the stripping of hydric soil within the footprint of the excavations for the downstream masonry wall.
- C. This work shall also include the preservation from injury or defacement of all vegetation, and existing objects designated to remain, as shown or as specified herein.
- D. The Contractor shall stake the limits of clearing, grubbing, and stripping. The Owner shall review the location, limits, and methods to be used prior to commencing the work under this section.

PART 2.00 - PRODUCTS

2.01 GENERAL

- A. The Contractor shall provide all materials and equipment in suitable and adequate quantity as required to accomplish the work shown, specified herein, and as required to complete the project.

PART 3.00 - EXECUTION

3.01 CLEARING

- A. Definition: Clearing shall consist of cutting, removing, and disposing of trees, snags, stumps, shrubs, brush, limbs, and other vegetative growth, and shall be performed in such a manner as to remove all evidence of their presence from the surface and shall be inclusive of sticks and branches greater than 1 inch in diameter or thickness. Clearing shall also include the removal and disposal of trash piles and rubbish; and the preservation of trees, shrubs, and vegetative growth, which are designated to remain.
- B. Cutting Timber: In the cutting of timber growth, cuts shall be made such that all trees are felled into the area to be cleared. Remove all trees and root systems on the dam slopes and within 10 feet of the downstream toe of the dam. Exercise care when clearing near the clearing limits so as not to damage existing trees, vegetation, structures, or utilities which are outside of the clearing limits. All stumps not designated for grubbing to be ground to 6 inches below the ground surface.

3.02 PRESERVATION OF TREES, SHRUBS, AND OTHER VEGETATION

- A. Protect trees, shrubbery, and other vegetation not designated for removal from damage resulting from the work. Cut and remove tree branches only where such cutting is necessary to effect construction operation as approved by the Engineer and/or Owner. Remove branches other than those required to effect the work to provide a balanced appearance of any tree, as approved prior to removal. All pruning performed shall be in accordance with the latest version of the International Society of Arboriculture standards.



18255.01  
07/24

**SECTION 02110  
TREE REMOVAL, CLEARING, GRUBBING, AND STRIPPING**

3.03 GRUBBING

- A. Definition: Grubbing shall consist of the removal and disposal of wood or root matter below the ground surface remaining after clearing and shall include stumps, trunks, roots, crest, or root systems greater than 1/2 inch in diameter or thickness. Grubbing shall be performed on the crest, dam slopes, and within 10 feet of the downstream toe of the dam. All resulting voids, depressions and excavations shall be filled with granular fill (MassDOT M1.03.0 Type B modified to have 12 to 20 percent passing the No. 200 Sieve).
- B. Grubbing is not anticipated to be required as part of the scope of work.

3.04 DISPOSAL OF CLEARING DEBRIS

- A. Material shall be promptly removed from the site and disposed of in accordance with all local laws, codes, and ordinances. The Contractor shall bear full responsibility for lawful and safe disposal of all cleared and grubbed material.

3.05 STRIPPING

- A. Definition: Stripping shall include the removal of all organic sod, Loam Borrow, hydric soil, grass and grass roots, remaining after clearing and grubbing.

END OF SECTION

PART 1.00 - GENERAL

1.01 WORK INCLUDED

- A. This section covers the work necessary for:
1. Excavation to subgrade, preparation of the subgrade, and backfilling for embankment improvements.
  2. Compaction requirements for backfilling.
  3. Material requirements for soils and geotextiles.
  4. All ancillary activities requiring excavation and backfilling.
- B. All Earth excavation is unclassified and shall include the excavation, removal and satisfactory disposal or reuse of all materials of whatever nature encountered from within the limits indicated or specified (other than rock ledge) or as directed in writing. It shall include, but not be limited to, earth materials such as peats, organic or inorganic silts, clay, sand and gravel, cobbles and boulders less than 3 cubic yards in volume, soft or disintegrated rock which, in the opinion of the Engineer, can be removed without blasting or drilling, pavement, and all obstructions not specifically included in another section.

1.02 DEFINITIONS

- A. Relative Compaction: The ratio, in percent, of the as-compacted field dry density to the laboratory maximum dry density as determined by ASTM D1557. Corrections for oversize material shall be applied to either the as-compacted field dry density or the maximum dry density, as determined by the Engineer.
- B. Optimum Moisture Content: Determined by the ASTM standard specified to determine the maximum dry density for relative compaction.
- C. Relative Density: As defined by ASTM D4253 or D4254.
- D. Prepared Ground Surface: The ground surface after clearing, grubbing, stripping, excavation, scarification, and/or compaction.
- E. Completed Course: A course or layer that is ready for the next layer or next phase of the work.
- F. Well-Graded: A mixture of particle sizes that has no specific concentration or lack thereof of one or more sizes. Well-graded does not define any numerical value that must be placed on the coefficient of uniformity, coefficient of curvature, or other specific grain size distribution parameters. Well-graded is used to define a material type that, when compacted, produces a strong and relatively incompressible soil mass free from detrimental voids.
- G. Influence Area: The area within planes sloped downward and outward at an angle of 60 degrees from the horizontal from (a) 1 foot outside the outermost edge at the base of foundations or slabs; or (b) 1 foot outside the outermost edge at the surface of roadways or shoulder; or (c) 0.5 foot outside the exterior edge at the spring line of pipes and culverts.
- H. Unclassified Excavation: The nature of materials to be encountered has not been identified or described herein.
- I. Imported Material: Material obtained by the Contractor from sources off the site.

1.03 SITE INFORMATION

- A. Test borings and other explorations may be made by the Contractor at no cost to the Owner.

1.04 EXISTING UTILITIES

- A. Call Dig Safe **1-888-DIG-SAFE (1-888-344-7233)** 72 hours before commencing with any excavation, in order that all pertinent utility companies become informed of such work.
- B. If active utilities existing on the site are encountered, they shall be carefully protected from damage. When an active utility line is exposed during construction, its location and elevation shall be documented, and both the Engineer and the utility Owner notified in writing.
- C. Active utility lines damaged in the course of construction operations shall be repaired or replaced as determined by the Engineer, without additional cost to the Owner.

1.05 USE OF EXPLOSIVES

- A. Use of explosives is prohibited.

1.06 SUBMITTALS

- A. Provide the following submittals:
  - 1. Certification, test results, source, and samples for all imported earth materials. Submit bag samples (40lbs minimum) of each type of fill material to be used for backfilling to the Engineer at least 10 working days in advance of its required use. All material samples shall be furnished by the Contractor at the Contractor's sole expense. Samples shall be representative and be clearly marked to show the source of the material and the intended use on the project. Representative samples of excavated fill material which will be used for backfilling shall also be submitted for testing.
  - 2. Geotextiles
    - a. Technical properties but not limited to tensile strength, puncture strength, Mullen Burst, elongation, equivalent opening, permittivity, and water flow rate.
    - b. Provide a 12-by-12-inch sample of geotextiles
  - 3. Catalog and manufacturer's data sheets for compaction equipment.
  - 4. Copies of permits obtained for excavation that are required by state and local governing authorities.
  - 5. Manufacturer's certificate of compliance attesting that geotextile meet the requirements of these specifications. Provide mill certificates stating the length and width of fabric contained on each roll.

1.07 IMPORTED MATERIAL ACCEPTANCE

- A. All imported earth materials specified in this section are subject to the following requirements:
  - 1. All tests necessary for the Contractor to locate acceptable sources of imported material shall be made by the Contractor. Certification that the material conforms to the Specification requirements along with copies of the test results from a qualified commercial testing laboratory shall be submitted to the Engineer for approval at least 21 calendar days before the material is required for use. Sampling of the material source shall be done by the Contractor in accordance with ASTM D75. Tentative acceptance of the material shall be based on an inspection of the source by the Engineer and/or the certified test results submitted by the Contractor to the Engineer at the Engineer's discretion. No imported materials shall be delivered to the site until the proposed source and materials tests have

been tentatively accepted in writing by the Engineer. Final acceptance will be based on Quality Control and Quality Assurance tests made on samples of material taken from the completed and compacted course.

2. Gradation tests by the Contractor shall be made on samples taken at the place of production prior to shipment. Samples of the finished product for gradation testing shall be taken as specified in Section 01400, QUALITY CONTROL/QUALITY ASSURANCE, or more often as directed by the Engineer if variation in gradation is occurring, or if the material appears to depart from the Specifications.
3. If tests conducted by the Contractor or the Engineer indicate that the material does not meet Specification requirements, material placement will be terminated until corrective measures are taken. Material that does not conform to the Specification requirements and is placed in the work shall be removed and replaced at the Contractor's sole expense. Retesting of material that does not meet specification requirements shall be performed at the Contractor's sole expense.

1.08 SHORING, SHEETING, BRACING, AND SLOPING

- A. The Contractor shall design, furnish, install, and maintain shoring, sheeting, bracing, and sloping necessary to support the sides of excavations, maintain a stable excavation bottom, control groundwater, and to keep and to prevent any movement which may damage adjacent pavements, utilities, or structures, damage or delay the work, or endanger life and health. Furnish, install, and maintain shoring, sheeting, bracing, and sloping as required by OSHA and other applicable governmental regulations and agencies.

1.09 EXCAVATION SAFETY

- A. The Contractor shall be solely responsible for making all excavations in a safe manner. Provide appropriate measures to attain a stable base, retain excavation sideslopes and prevent earth slides to ensure that persons working in or near the excavation are protected.

1.10 CODES, ORDINANCES, AND STATUS

- A. The Contractor shall familiarize itself with, and comply with, all applicable codes, ordinances, statutes, and bear sole responsibility for the penalties imposed for noncompliance.

1.11 TOLERANCES

- A. All material limits shall be constructed within a vertical tolerance of 0.1 foot and a horizontal tolerance of 1 foot except where dimensions or grades are shown or specified as a minimum. All grading shall be performed to maintain slopes and drainage as shown. No reverse slopes will be permitted.

1.12 LAYOUTS AND GRADES

- A. All line and grade work not presently established at the site shall be laid out by a survey team under the supervision of a Registered Land Surveyor or Professional Engineer employed by the Contractor in accordance with the Contract Documents. The Contractor shall supply all additional layout and grade control as necessary to properly implement and construct the work. The Contractor shall establish permanent benchmarks and replace, as directed, any which are destroyed or disturbed.
- B. The words "finished grades" as used herein shall mean final grade elevations indicated on the Drawings. Spot elevations shall govern over proposed contours. Where not otherwise indicated, project site areas outside of the construction limits shall be given uniform slopes between points for which finished grades are indicated or between such points and existing established grades.

1.13 DRAINAGE

- A. The Contractor shall control the grading in areas under construction on the site so that the surface of the ground will properly slope to prevent accumulation of water in excavated areas and adjacent properties.
- B. The Contractor shall excavate interceptor swales and ditches where necessary prior to the start of major earthmoving operations to ensure minimal erosion and to keep areas as free from surface water as possible.
- C. Should surface, rain, or groundwater be encountered during the operations, the Contractor shall furnish and operate pumps or other equipment, and provide all necessary piping to keep all excavations clear of water at all times and shall be responsible for any damage to work or adjacent properties for such water. All piping exposed above ground surface for this use, shall be properly covered to allow foot traffic and vehicles to pass without obstruction.
- D. Presence of groundwater in soil will not constitute a condition for which an increase in the contract price may be made. Under no circumstances place concrete fill, lay piping, or install appurtenances in excavation containing free water. Keep utility trenches free of water until pipe joint material has hardened and backfilled to prevent flotation.

PART 2.00 - PRODUCTS

2.01 MATERIALS

- A. Fill materials shall consist of hard, durable, sand and gravel and shall be free from ice and snow, roots, sod, rubbish, surface coating, and other deleterious or organic matter.
  - 1. Engineered Fill shall be imported or reused material conforming to the following gradation and the coarse aggregate shall have a percentage of wear, by the Los Angeles Abrasion Test of not more than 50. Engineered Fill shall be utilized to complete all backfilling work, unless otherwise specified.

<b>Engineered Fill Material</b>	
<b>Sieve Size</b>	<b>Percent Passing</b>
3 inch	100
2 inch	90-95
3/4 inch	65-90
No. 4	50-75
No. 40	25-40
No. 60	20-35
No. 200	15-20

- 2. Gravel Borrow material shall be imported or reused material conforming to Item M1.03.0 of the MASSDOT Standard Specifications. Gravel Borrow shall be utilized as specified and shall conform to Item M1.03.0 type b of the MASSDOT Standard Specifications.
- 3. Sand Gravel Fill Base for the asphalt pavement shall be imported or reused material conforming to Item M1.03.1 or M1.03.0 type b of the MASSDOT Standard Specifications. Gravel Borrow shall be utilized as specified and shall conform to Item M1.03.0 type b of the MASSDOT Standard Specifications.

**SECTION 02200  
EARTHWORK**

4. Common Borrow shall be excavated onsite material conforming to Item M1.03.0 Type a of the MASSDOT Standard Specifications. The Owner/Owner's representative reserves the right to require additional testing of common borrows prior to determination of suitability for reuse. Common Borrow shall be utilized as specified.
  5. Pea Stone shall be imported or reused material conforming to Item M2.01.4 of the MASSDOT Standard Specifications and shall be utilized as specified.
- B. Water for compaction shall be furnished by the Contractor. Water for compaction from sources other than potable sources shall be as approved by the Engineer.
- C. Type 1 and Type 2 geotextiles shall be nonwoven, needle punched pervious sheets of polyester, polyethylene, nylon, or polypropylene filaments formed into a uniform pattern. The geotextiles shall have the following minimum properties when measured in accordance with the referenced standards.

<b>Test</b>	<b>Method</b>	<b>Type I</b>	<b>Type II</b>
Grab Tensile Strength (lbs)	ASTM D4632	250	160
Elongation at Required Strength (%)	ASTM D4632	50	50
Trapezoidal Tear Strength (lbs)	ASTM D4533	90	60
CBR Puncture Strength (lbs)	ASTM D6241	600	410
UV Resistance (after 500hrs)	ASTM D4355	70%	70%
Apparent Opening Size (US Standard Sieve)	ASTM D4751	70	60 - 80
Permittivity (sec-1)	ASTM D4491	0.7	1.5
Flow Rate (2) (gal/min/sf)	ASTM D4491	65	110

**PART 3.00 EXECUTION**

**3.01 GENERAL**

- A. All Loam Borrow and unsuitable or excess materials shall be stripped from areas of new construction or regrading. Materials suitable for reuse shall be stored in approved locations that will not interfere with construction operations. Loam Borrow shall be stripped and stored before any underlying excavating is begun. Stripped Loam Borrow to be reused shall be free from clay, large stones, and debris. All excess and unsuitable materials shall be legally disposed of off-site by the Contractor.
- B. Earth excavation is unclassified and shall include the excavation, removal and satisfactory disposal or reuse of all materials of whatever nature encountered from within the limits indicated or specified (other than rock ledge) or as directed in writing. It shall include, but not be limited to, earth materials such as peats, organic or inorganic silts, clay, sand and gravel, cobbles, and boulders less than 3 cubic yards in volume, soft or disintegrated rock which, in the opinion of the Engineer, can be removed without blasting or drilling, pavement, and all obstructions not specifically included in another section.

- C. All excavations shall be backfilled as specified. All compacted fill shall be placed in layers. Each layer shall be systematically compacted by approved compaction equipment to the density specified herein.
- D. Compaction equipment in open areas shall consist of a vibratory drum roller with a minimum static weight of 10,000 lbs.
- E. Compaction equipment in confined area (in trenches and adjacent to walls) shall be accomplished by hand-operated vibratory compactors.
- F. Material that is allowed to become saturated may be difficult to traverse, place, and compact. Care shall be taken to maintain the appropriate moisture content and prevent ground water, surface water, or precipitation from saturating stockpiled or placed material.
- G. Elastic-type deformation (pumping or weaving) may indicate there is excess moisture in the soil without adequate drainage time as the load is applied. Notify the Engineer of this condition. The Contractor, at no cost to the owner, may decide to stay off the area until the excess pore water pressure is dissipated naturally, or the material can be removed and replaced with dryer approved material.
- H. During construction activities, existing historic structures (such as stone walls, etc.) may be encountered within the limits of work that need to be removed in order to complete the required work. If such structures are encountered, the Contractor shall carefully remove the portion of the structure within the limits of work in such a manner as to not damage the sections of the structure that are to remain. The Contractor shall notify the Engineer and coordinate to have the Engineer on-site during removal.

3.02 WORK IN FREEZING WEATHER

- A. Protect excavation bottoms and sides against freezing when atmospheric temperature is less than 35 degrees Fahrenheit.
- B. In freezing weather, a layer of fill shall not be left in an uncompacted state at the close of a day's operation. Prior to terminating operations for the day, the final layer of fill, after compaction, shall be rolled with a smooth-wheeled roller to eliminate ridges of soil left by tractors, trucks, and compaction equipment.
- C. The Contractor shall not place a layer of fill on snow, ice or soil that was permitted to freeze prior to compaction. Removal of these unsatisfactory materials will be required as directed by the Owner.
- D. Fill to be incorporated into the work shall not be permitted to freeze. "Breaking up" frozen soil will not be considered suitable for making frozen soils suitable for reuse.

3.03 REMOVAL OF WATER

- A. Refer to Section 02400, DEWATERING, CONTROL, AND DIVERSION OF WATER.
- B. The existing materials found within most dam structures typically have significant fines content, which can trap groundwater within the existing soil even after a pond has been drawn down. This trapped water often leaches into an open excavation, which if not controlled, could adversely affect subgrade preparation and backfilling operations. The Contractor should anticipate and provide means for controlling this issue during all earthwork operations.

3.04 STOCKPILE OPERATION

- A. Keep stockpiles and areas around them graded to drain and take all necessary precautions to minimize erosion including but not limited to the installation of baled hay. Maintain access roads as necessary at the Contractor's expense. Excavation at the stockpiles shall be limited to that depth which will permit the completed area to slope to drain to the surrounding area after completion of all work.
- B. The Contractor shall be responsible for protecting stockpiles of suitable material. Protect the stockpile so that the stockpiled material remains in a condition suitable for use in the project. Cover or otherwise protect the stockpiles to prevent saturation of the material from precipitation and to protect the material from the development of frost.
- C. Remove all stockpiles at the completion of the project. Grade the surrounding area at completion and finish the area as specified in Section 02900, LANDSCAPING.

3.05 BACKFILL

- A. The Contractor shall inform the Engineer in writing a minimum of 48 hours prior to starting any backfill operation. The information shall include the location to be filled, the amount of fill to be placed, and the material to be placed.
- B. Prior to placing any backfill, remove all trash, debris, and/or any other unsuitable material from areas where backfill is to be placed. Do not place frozen backfill. Do not place backfill on frozen ground or in areas where standing water is present.
- C. Do not operate earth-moving or other heavy equipment within a distance that will cause damage to new or existing structures and utilities. Compact embankment fill backfill to the lines and limits indicated on the Contract Drawings with hand-operated vibratory compactors or other acceptable equipment in 12-inch maximum loose lifts. Every lift shall be compacted to not less than 98 percent relative compaction. Compaction shall be performed in a manner, which will not damage new or existing structures and utilities.
- D. All lifts of backfill shall be keyed into the side slopes of the existing material in accordance with the placement of fill materials detail provided within the Contract Drawings.

3.06 ENGINEERED FILL

- A. Place and Grade to the limits indicated on the Drawings, using imported Engineered Fill or salvaged material meeting the specification requirements of Engineered Fill. Place material in 12-inch maximum loose lifts and compact each lift to not less than 98 percent relative compaction. Make proper allowances for Bedding for Riprap, Riprap, Loam Borrow, or any other surficial materials specified. Engineered Fill contains higher silt content than typical gravel and may be easily disturbed after placement especially if placed at high moisture contents. It is the Contractor's responsibility, at no additional cost to the Owner, to provide the means and methods to maintain a stable subgrade prior to the placement of subsequent materials.
- B. Place Engineered Fill under structures. Compact each lift to not less than 98 percent relative compaction as specified herein.

3.07 PEA STONE FOR TOE DRAIN SYSTEMS

- A. Place Drainage Stone wrapped in Type II geotextile fabric as specified for the toe drain and blanket drain



systems. Compact drainage stone in 12-inch maximum loose lifts with hand-operated vibratory compactors or other acceptable equipment. Compaction shall be performed in a manner, which will not damage new or existing structures and utilities.

3.09 EXCAVATION

- A. All excavations shall progress under good practice and shall abide to all State and Federal regulations.
- B. The Contractor shall provide the means and methods necessary to properly drain excess water from the section during the excavation so as to achieve a firm and stable subgrade upon reaching the bottom of the excavation.
- C. Should unsuitable bearing material be encountered at the subgrade for the low-level outlet replacement or spillway improvements work, the Contractor shall over excavate to a suitable bearing material and replace the unsuitable material with compacted Engineered Fill or mass concrete. The Contractor shall notify the Engineer and Owner prior to completing any over excavation and replacement work.

3.10 TRENCH EXCAVATION

- A. Excavation: All obstructions, such as tree roots, stumps, and other material of any type shall be removed.
- B. Trench Width: Minimum width of unsheeted trenches or the minimum clear width of sheeted trenches in which pipe is to be laid shall be 24 inches. Sheeting requirements shall be independent of trench width. The maximum clear width at the top of the pipe or above the pipe will not be limited, except in cases where excess width of excavation would cause damage to adjacent structures.
- C. After completion of excavation, and prior to backfill placement, compact the subgrade with a heavy vibratory roller or other suitable equipment to detect soft or loose zones. Notify the Engineer prior to commencement of compacting. If soft or loose zones are found, excavate the soft or loose material to a depth accepted by the Engineer, then fill with Engineered Fill or Gravel Borrow as specified for such fill. The cost of such excavation shall be paid for under the appropriate unit price bid item.
- D. Trench excavations shall be backfilled utilizing material specified.

3.11 MOISTURE CONTROL

- A. During the compacting operations, the moisture content of the material shall be within the range necessary to obtain the specified compaction, as determined by laboratory testing.
- B. Maintain moisture content throughout the lift. Insofar as practicable, add water to the material at the site of excavation. Supplement, if required, by sprinkling the material.
- C. Do not compact material that contains excessive moisture. Aerate material by blading, discing, harrowing, or as approved, to hasten the drying process.
- D. Stockpiled soils which are left uncovered on the site may become saturated due to rainfall or other precipitation events. The Contractor shall protect stockpiled material from becoming too wet to achieve adequate compaction. Any soil which becomes too wet shall be replaced by the Contractor at no additional cost to the Owner.

3.12 COMPACTION

- A. Place material in 12-inch maximum loose lifts and compact each lift to not less than 98 percent of the maximum dry density as determined by the Modified Proctor Test. Make proper allowances for Bedding for Riprap, Riprap, Loam Borrow, or any other surficial materials specified.
- B. In addition to the Contractor's Quality Control testing, Quality Assurance testing laboratory will randomly test the backfill as specified in Section 01400, QUALITY CONTROL/QUALITY ASSURANCE. The Contractor shall make all necessary excavations and preparations for testing. Excavations for density tests shall be backfilled with material similar to that excavated and compacted to the specified density by the Contractor. Failure of the backfill material to achieve the specified density will be just cause for rejection of any or all portions of the excavation section tested. The Contractor will not be granted an extension of time or additional compensation for testing or repair of backfill ordered by the Engineer.

END OF SECTION

18255.01  
07/24

**SECTION 02270**  
**EROSION AND SEDIMENT CONTROL**

PART 1.00 - GENERAL

1.01 WORK INCLUDED

- A. Work covered under this Section shall include all work for erosion and sediment control.
- B. All work shall conform to the requirements stated herein and to the requirements of the regulatory agencies having jurisdiction over the areas of work.

1.02 SUBMITTALS

- A. Provide the following submittals:
  - 1. Manufacturer's certificate of compliance for geotextiles.

1.03 COMPLIANCE

- A. All work shall be done in compliance with the provisions of all local, state and federal regulatory agencies. Failure to comply with these provisions shall constitute grounds for the Owner ordering work to cease until such provisions are met.
- B. If required, the Contractor shall meet with the Conservation Commission and other regulatory agencies for clarification regarding requirements of the execution of, and compliance with, environmental protection programs. The Contractor shall familiarize itself with the nature of the work to be performed. The Contractor shall be responsible for scheduling its submittals and/or meetings, if required, with the Conservation Commission

PART 2.00 - PRODUCTS

2.01 STRAW BALES

- A. Bales of straw fastened with wire and have a minimum size of 1 foot by 1.5 feet by 2 feet and conform to the applicable portions of Section 767 of The Commonwealth of Massachusetts, MassHighway Standard Specifications for Highways and Bridges, latest edition. Bales shall be made of straw with forty pounds minimum weight and one hundred and twenty pounds maximum weight. They should be either wire or nylon bound.

2.02 SILTATION FENCE

- A. Filter fabric siltation fencing shall be a woven filter fabric having a permittivity of not less than  $0.05 \text{ sec}^{-1}$ , a water flow rate of a minimum 12 gallons per minute per square foot, and a grab tensile strength of a minimum of 100 lbs. The material shall have a high sediment filtration capacity, high slurry flow and minimum clogging characteristics.
- B. Silt fences or sedimentation barriers shall consist of wood posts with industrial support netting and sediment control filter fabric attached.
- C. Wood post shall be standard 2"x2"x4.5' long hardwood stakes commonly used to support filter

18255.01  
07/24

**SECTION 02270  
EROSION AND SEDIMENT CONTROL**

fabric. Silt fence shall be furnished standard with filter fabric attached to hardwood posts and spaced at a maximum distance of 8 feet.

- D. Provide suitable heavy nylon cord for securing abutting silt fence posts.
- E. The filter fabric material shall be needle punched non-woven polypropylene geotextile conforming to the following criteria:

<b>Fabric Properties</b>	<b>Minimum Acceptance Value</b>	<b>Test Method</b>
Grab Tensile Strength (lbs)	124	ASTM D4632
Elongation of Failure (%)	15	ASTM D4632
Mullen Burst Strength (PSI)	300	ASTM D3786
Puncture Strength (lbs)	100	ASTM D4833
Flow Rate (gal/min/sf)	10	ASTM D4491
Apparent Opening Size (sieve)	30	ASTM D4751
Ultraviolet Radiation (% strength retained)	70	ASTM D4355
Unit Weight	5	ASTM D3776
Thickness	80	ASTM D1777
Trapezoidal Tear Strength	50	ASTM D4533
Permittivity	.01	ASTM D4491

- F. Acceptable filter fabric materials include “Mirafi Envirofence”, “Propex Silt Stop” by Amoco Fabrics Co or equal approved by the Designer.
- G. Control fabric shall be at least 3 feet wide.

2.03 EROSION CONTROL MATS

- A. Erosion control mats shall consist of temporary degradable rolled erosion control product composed of processed natural or polymer fibers mechanically, structurally or chemically bound together to form a continuous matrix to provide erosion control and facilitate vegetation establishment

2.04 FILTER SOCKS/SILT SOCKS

- A. Filter Socks are biodegradable sediment-trapping devices. Manufacturers include SiltSoxx, Corr Logs, Straw Wattles, or equal approved by the Engineer.

2.05 WOODEN STAKES

- A. Stakes: Oak wood, minimum 2-inch by 2-inch, by minimum 54 inches long.

2.07 WATER

- A. Water used for dust control and equipment washes shall be clean and free of salt, oil, and other injurious materials. Water is not available on site. The Contractor shall provide all necessary water.

18255.01  
07/24

**SECTION 02270**  
**EROSION AND SEDIMENT CONTROL**

2.07 CONSTRUCTION ENTRANCE/EXIT MATS

- A. Mud Mats: Construction mats shall be capable of supporting the anticipated loads on the types of soil that will be encountered.
  - 1. Construction mats shall be free of leachable preservatives or other constituents harmful to aquatic environments.
- B. Portable Mats: Portable mats shall be prefabricated mats specifically designed to reduce off-site transport of site materials.
- C. Stone Pad: Stones pads shall consists of suitable aggregate with separation medium to allow for complete removal post construction.
  - 1. Geotextile: A non-woven geotextile fabric that meets the requirements of Section 804.11 of the *Standard Specifications for Highway Construction* "Geotextile Fabric for Slope Protection". Fabric shall be Mirafi 500x or approved equal.
  - 2. Aggregate: Aggregate shall consist of drainage stone.

PART 3.00 - EXECUTION

- A. If necessary, the Contractor shall furnish, install, maintain, and remove dewatering basins. Dewatering basins shall be as detailed on the Contract Drawings or as approved by the Owner and Engineer. Maintain dewatering basins throughout their use as required to provide adequate treatment of dewatering waste waters.
- B. The Contractor shall maintain siltation fencing in good condition, removing accumulated sediment periodically as directed by the Engineer. Remove siltation fencing in its entirety upon completion of the Work.
- C. The Contractor is advised that stream flows and water levels of resource areas may vary substantially due to climatic and seasonal conditions and Contractor shall be responsible for controlling and handling ground and or surface water regardless of the volume of water and regardless of whether this flow is due to flood waters from storms.
- D. The Contractor shall take every precaution to minimize and control erosion and turbidity within the contract area. These precautions shall be subject to approval by the Engineer and shall include, but not necessarily be limited to, the following:
  - 1. Siltation fencing shall be staked in place down gradient from all exposed materials storage areas in order to reduce the amount of suspended solids in runoff water. The Contractor shall promptly remove any sedimentation buildup over 6 inches in depth that accumulates behind the erosion barriers. Barriers shall be checked after every storm and at regular weekly intervals.
  - 2. The Contractor shall furnish, install, and maintain the turbidity barrier with anchorage to fixed structures to prevent loss of sediment. At the completion of the project, the barrier shall be removed such that the release of accumulated sediment is prevented.

**18255.01**  
**07/24**

**SECTION 02270**  
**EROSION AND SEDIMENT CONTROL**

- E. Construction Entrance Mats: The Contractor shall provide construction entrance mats to prevent the transport of excess soils and other materials onto public ways. The entrance mat shall consist of temporary facilities to remove sediment from the tires of vehicles leaving the construction site.
- F. Removal and clean up: All temporary erosion control facilities and accumulated sediments shall be removed and legally disposed in a neat and workmanlike manner when all disturbed areas have been satisfactorily stabilized.

END OF SECTION

**18255.01**  
**07/24**

**SECTION 02300**  
**RIPRAP**

**PART 1.00 - GENERAL**

**1.01 SCOPE OF WORK:**

- A. Work covered by this specification includes; all material, labor, plant and equipment required to construct the downstream scour apron. The work includes; excavation, grading, handling, and placing rip rap stone.

**1.02 QUALITY ASSURANCE:**

- A. The work shall be performed by a qualified contractor having experience in constructing stone slope protection of similar type.

**1.03 REFERENCES:**

- A. American Society of Testing and Materials Publications:
  - 1. C33: Concrete Aggregates
  - 2. C88: Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
  - 3. C127: Specific Gravity and Absorption of Coarse Aggregate.
  - 4. C131: Resistance of Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

**1.04 SUBMITTALS:**

- A. Submit the following in accordance with Section 01340:
  - 1. Independent laboratory test results for unit weight and for gradation specified in subparts 2.01 and 2.02 and conforming to all requirements in subpart 1.03. Submit before delivery and within one week after subsequent tests.
  - 2. Submit independent testing laboratory's qualifications as specified in paragraph 1.3 C. Include with all references the names, current addresses, and telephone numbers of persons in charge of representing the Owner or Owners at the time of previous work.

**PART 2.00 - MATERIALS**

**2.01 QUALITY OF STONE**

- A. All stone shall consist of sound, hard, dense, durable rock which has been separated from bedrock in place by quarrying. Unit weight of stone shall not be less than 165 pounds per cubic foot, dry in air. The stone shall be free from open or incipient cracks, seams and fissures, and from porous structure, solution cavities, planes of weakness, and from component minerals and cementing or bonding materials that may contribute to spalling or breakdown during handling and placing and from wave action and chemical action from air and water. No stone shall be used in which the least principal dimension is less than one third of the greatest dimension. Slabs, boulders and round stones will be rejected. Stone shall, in general, be of irregular and angular shape; however, not more than 25% may be roughly rectangular, provided such stone is placed with its long axis perpendicular to the length of the structure.

18255.01  
07/24

**SECTION 02300  
RIPRAP**

- B. Gradation of imported stone shall meet the requirements as specified in the following sections. The contractor shall coordinate with his supplier as necessary to provide material in accordance with these specifications.
- C. Stone used for infilled riprap shall be hard, durable, angular in shape, resistant to weathering and shall meet the gradation requirement specified. Neither breadth nor thickness of a single stone should be less than one-third its length. Rounded stone or boulders will not be accepted unless authorized by special provisions.
- D. Stone shall be free from overburden, spoil, shale, and organic material
- E. Each load of riprap shall be reasonably well graded from the smallest to the maximum size specified. Stones smaller than the specified 10% size and spalls will not be permitted in an amount exceeding 10% by weight of each load.
- F. Control of gradation will be by visual inspection. The Contractor shall provide at the locations specified a mass of rock of at least five tons meeting the gradation for the class specified. The sample at the construction site may be a part of the finished riprap covering. At the quarry, an additional sample shall be provided. These samples shall be used as a frequent reference for judging the gradation of the riprap supplied. Any difference of opinion between the Engineer and the Contractor shall be resolved by dumping and checking the gradation of two random truckloads of stone. Mechanical equipment, a sorting site and labor needed to assist in checking gradation shall be provided by the Contractor at no additional cost to the Owner.

2.02 ARMOR STONE

- A. Armor Stone shall be utilized to construct the downstream scour apron. Armor Stone shall be imported material conforming M2.02.2-1 MassDOT Standard Specifications with the following gradations:

<b>Approximate Riprap Diameter (in.)*</b>	<b>Size of Stone (lb)</b>	<b>Maximum % of Total Weight Smaller Than Given Size</b>
20	400	100
16	300	80
13	200	50
8	25	10

\*Approximate size equivalent based upon weight

- B. Stone stockpiled from downstream wall demolition smaller than 2-feet in diameter is suitable for reuse as downstream armor stone. Suitable salvaged riprap from the demolished downstream wall shall be used prior to importing of riprap material.
- C. Riprap Appearance: The riprap shall be clean and have a uniform appearance. The visual appearance of the proposed stone must be approved by the Engineer.

2.03 BEDDING STONE

- A. Bedding stone for riprap, top course of drainage swales, and along the primary spillway approach shall be imported material conforming to "Modified Rockfill" MassDOT Standard Specification M2.02.4-1 with the following gradations:



18255.01  
07/24

**SECTION 02300  
RIPRAP**

<b>Bedding Stone Size (in.)</b>	<b>Maximum % of Total Weight Smaller than Given Size</b>
8	95-100
4	0-25
2 1/2	0-5

- B. Bedding Stone Appearance: Bedding stone used beneath the infilled riprap shall be clean and have a uniform appearance. The visual appearance of the proposed stone must be approved by the Engineer.

2.06 GEOTEXTILE FABRIC

- A. Refer to Section 02200; EARTHWORK, for material specifications.

2.07 REJECTED STONE

- A. Any stone not meeting the requirements of these specifications will be rejected and shall be removed from the site and replaced with suitable stone at the sole expense of the Contractor.

2.08 COMPOSTED MULCH FOR INFILLING RIPRAP

1. Composted mulch shall be an aged organic substance, consisting of a mixture of bark, wood shavings, wood chips, wood scraps and mineral grit that is approved by-product of the lumber, paper, or landscaping industries. No manure, bio-solids, kiln dried wood, or construction debris shall be allowed.
2. Organic matter content shall be between 20-100% (dry weight basis) as determined by ASTM D2974 (method A) Standard Test Methods for Moisture, Ash and Organic Matter of Peat and Other Organic Soils.
3. Moisture content shall be <15% by dry weight (<60% by wet weight) as measured by ASTM D2216 Standard Test Method for Laboratory Determination of Water Content of Soil and Rock and ASTM D2974 (cited above).
4. Particle size as measured by sieving shall be as follows

<u>Sieve Size</u>	<u>%Passing</u>
2 in	100%
¾ in	70-100%
#4	30-75%
#20	20-40%

5. Soluble salts shall be <5.0 mmhos/cm (dS/m), the pH shall be between 5.5 and 8.0, and the seed mix shall be as specified under the Seeding item

PART 3.00 - EXECUTION

3.01 GENERAL

- A. Prior to commencing work, the Contractor shall establish limits of disturbance and place construction control markers clearly visible and understandable to workers in the field. The contractor shall exercise due care so as not to disturb adjacent structures and shall leave the site in clean and orderly condition upon completion of the work.

18255.01  
07/24

**SECTION 02300**  
**RIPRAP**

- B. Placement of Riprap shall be from the base of the repair area upward. Height of freefall of riprap shall be determined by the Engineer, but in no case shall this height exceed one foot.

3.02 LAYING GEOTEXTILE FOR RIPRAP PLACEMENT

- A. Prior to placement, the area shall be graded smooth and all stones, roots, sticks, or other foreign material which would interfere with the fabric being completely in contact with the soil shall be removed prior to placing the fabric. The fabric shall be placed loosely and the machine direction of the fabric laid perpendicular to the alignment of the dam and/or berm. Pinning or stapling may be required to hold the geotextile in place. Separate pieces of fabric shall be joined by overlapping or sewing. The fabric in the overlapped joints shall be placed with a minimum overlap of 24 inches. After placement, the fabric shall be exposed no longer than 48 hours prior to covering.
- B. Damaged areas shall be covered with a patch of fabric using a three-foot overlap in all directions.

3.03 BEDDING STONE PLACEMENT

- A. Bedding stone shall be placed under riprap.
- B. Stone shall be carefully placed to obtain firm contact with the maximum number of adjacent stones in order to obtain the best possible interlocking.

3.04 ARMOR STONE PLACEMENT

- A. Armor stone shall be placed on bedding stone. Stones shall be dumped into place by suitably sized equipment; however, stones shall be carefully selected as to size and shape and placed to obtain firm contact with the maximum number of adjacent stones in order to obtain the best possible interlocking. Obtaining a perfectly smooth slope face is not desirable, however, no individual stone shall project more than 12 inches outside of the theoretical slope line nor less than 12 inches inside the design slope line. Rectangular pieces shall be placed with their long axis perpendicular to structures length.
- B. Armor stone shall be placed on the prepared subgrade in a manner which will produce a reasonably well-graded mass of stone with the minimum practicable percentage of voids. The entire mass of stone shall be placed so as to be in conformance with the existing lines and grades shown on the plans. Armor stone shall be placed to its full course thickness at one operation and in such a manner as to avoid displacing the underlying material. Placing of armor stone in layers, or by dumping into chutes, or by similar methods likely to cause segregation will not be permitted.
- C. It is the intent of these specifications to produce a fairly compact riprap protection in which all sizes of material are placed in their proper proportions. Hand placing or rearranging of individual stones by mechanical equipment may be required to the extent necessary to secure the results specified.
- D. Riprap shall be placed in a manner to prevent damage to the geotextile fabric.

3.03 INFILLING CONSTRUCTION METHODS

- A. Placement of Composted Mulch shall be as shown on the plans and as directed by the Engineer. Composted Mulch material may be placed within voids hydraulically, utilizing washing and rodding techniques. Material shall be placed at approximately 12 inch depth (0.35 cy/sy).
- B. Voids shall be filled utilizing washing and rodding after the following layers are furnished:

**18255.01**  
**07/24**

**SECTION 02300**  
**RIPRAP**

1. After installation of bedding stone
  2. After installation of armor stone
- C. The in-filled riprap shall be consolidated by large vibratory equipment or backhoe bucket to create a tight, dense interlocking mass before subsequent layers are placed. Repeat washing and rodding as necessary to create a smooth plane finished surface.
- D. Methods of installation shall be reviewed and approved by the Engineer prior to placement of material.

END OF SECTION

18255.01  
07/24

**SECTION 02400  
DEWATERING, CONTROL, AND DIVERSION OF WATER**

PART 1.00 - GENERAL

1.01 WORK INCLUDED

- A. Work covered under this section consists of the Dewatering, Control, and Diversion of Water as required to perform the work.

1.02 WATER LEVELS

- A. The impoundment is normally operated at El. 348 feet (NGVD29) as indicated on the drawings
- B. Prior to the planned start of work, the Town of Hopkinton will open the gate to implement an approximate 5-foot winter drawdown winter drawdown to El. 343± (NGVD29).
- C. The Town of Hopkinton will operate the low level outlet gate as required to maintain the drawdown. The Contractor shall be prepared to protect the work area in the event of storm events that exceed the capacity of the low level outlet.
- D. On March 15, the Town will commence adjustments to the gate to begin impounding to El. 348 with a target refill date by March 31, 2023. Gate will be adjusted by the Town to implement the refill in a gradual manner.
- E. The Contractor shall develop and implement (as necessary) a flood contingency plan. The intent of this plan is to have procedures in place to protect the work area and dam in the event of significant rainfall events exceeding the capacity of the low level outlet to maintain the drawdown level and refill schedule.
- F. The Contractor shall phase the work and design control of water systems such that the Owner can commence refill of the impoundment on or before March 15.

1.03 SUBMITTALS

- A. Flood Contingency Plan:
  - 1. A detailed plan with applicable drawings/sketches, material lists, installation/removal work plans that identifies and details the Contractor's flood contingency plan.

PART 2.00 - PRODUCTS

NOT USED

PART 3.00 - EXECUTION

3.01 SURFACE DRAINAGE

- A. The Contractor shall intercept and divert surface drainage away from the work sites by the use of dikes, curb walls, ditches, sumps or other means. The Contractor shall design surface drainage systems so that they do not cause erosion on or off the site. Surface runoff shall be controlled to prevent entry of

18255.01  
07/24

**SECTION 02400  
DEWATERING, CONTROL, AND DIVERSION OF WATER**

water into excavations. The Contractor shall remove drainage systems when no longer needed.

3.02 CONTROL OF THE IMPOUNDMENT LEVEL

- A. Control of the level of the impoundment is regulated to maintain impoundment level between the operable elevations stated in Section 1.02.

3.03 WATER CONTROL IN EXCAVATIONS

- A. The Contractor shall use water control methods, which are appropriate to the ground conditions, the construction operations, and the requirements of these Contract Documents. The methods will involve removal of water within the excavation / work area and may involve removal of water outside the excavation / work area or construction of facilities to control water movement into the excavation. Water control measures shall minimize adverse effects of elevated or reduced water pressure on the work, the surrounding ground and adjacent facilities and structures. The water control measures shall be designed and operated so as to prevent removal of in-situ materials, or loosening or softening of in-situ materials within the excavation / work area. The Contractor shall control groundwater and surface water such that the construction of open cut pipelines, and other structures will be performed without adverse effects of water, and to prevent hydrostatic uplift pressures until construction has been completed. Water shall be controlled during periods when concrete (except tremie concrete) is being placed, when pipe is being laid, and at such other times as is necessary for the safe execution of the work.
- B. If the Contractor encounters large amounts of water entering the excavation / work area, immediate action shall be taken to control the water inflow. A large amount of inflow requiring control shall be defined as that which adversely affects the performance of the work or has the potential of causing loss or damage to adjacent property or structures.

3.04 PROPERTY LOSSES FROM REMOVAL OR DISTURBANCE OF GROUNDWATER

- A. Any structure, including but not limited to buildings, bridges, streets, and utilities that become unstable or vulnerable to settlement due to removal or disturbance of groundwater will be supported immediately by the Contractor. Support shall include but not be limited to bracing, underpinning, or compaction grouting.
- B. All loss or damage arising from removal or disturbance of groundwater, including but not limited to claims for subsidence and the loss of structure support, that may occur in the progression of the Work shall be sustained and borne by the Contractor. If the Contractor needs to correct the damage resulting from his operations, the Owner may, 30 days after notifying the Contractor in writing, proceed to repair, rebuild or otherwise restore such damaged property as may be deemed necessary, and the cost thereof shall be deducted from compensation which may be or become due to the Contractor under this Contract.

END OF SECTION

18255.01  
07/24

**SECTION 02621**  
**POLYVINYL CHLORIDE (PVC) TOE DRAIN PIPE**

PART 1.00 - GENERAL

1.01 SCOPE

- A. This Section specifies requirements in the Contract for the Contractor to furnish all plant, labor, equipment, appliances and materials, and perform all operations in connection with the construction of the embankment drain system. The work includes but is not limited to the following:
1. Toe drain pipe, fittings, clean-outs, and appurtenances.
  2. Joining and jointing materials.
  3. All testing.
  4. All other related and appurtenant work.

1.02 REFERENCES

- A. The following standards and specifications listed below form a part of this specification where applicable.
1. American Society for Testing and Materials Standards
    - a. ASTM D 1784 Rigid Vinyl Compounds
    - b. ASTM D 1785 PVC Plastic Pipe, Schedule 40
    - c. ASTM D 2466 PVC Plastic Fittings, Schedule 40
    - d. ASTM D 2564 Solvent Cements for PVC Pipe and Fittings
    - e. NSF Standard 14 Plastic Piping Components and Related Materials

1.03 SUBMITTALS

- A. Submittals for the following items shall be made in accordance with the requirements as specified in Section 01340, SUBMITTALS.
1. Shop Drawings: Showing lengths of pipe, fittings and joint details, construction details, tolerance and other information, as required.
  2. Conformance Certificates: Each shipment of pipe, pipe fittings, and appurtenances, shall be accompanied by the manufacturer's notarized certificate certifying conformance with all requirements of these specifications.
  3. Guarantee: The Contractor shall furnish to the Owner a written guarantee signed by the manufacturer of the pipe and pipe fittings which he proposes to furnish, which shall warrant and guarantee that the pipe and pipe fittings meet all requirements of the specifications. The form of guarantee shall be satisfactory to the Owner.

1.04 QUALITY CONTROL

- A. Provide Quality Assurance/Quality Control in accordance with the requirements specified in Section 01400, QUALITY CONTROL.
- B. Pipe and Fittings Marking: Mark pipe with the following information applied at intervals of not more than 5 feet.

18255.01  
07/24

**SECTION 02621**  
**POLYVINYL CHLORIDE (PVC) TOE DRAIN PIPE**

1. Manufacturer's name or trademark:
2. Nominal pipe size.
3. PVC cell classification.
4. Applicable dimension ratio.
5. Date and location of manufacturer.
6. Applicable standard designation number.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. GENERAL

1. The Contractor shall arrange for the delivery of the products at approved locations in the vicinity of that portion of the project in which the products are to be installed. To this end, he shall do such work as is necessary for access and for delivery of the products.
2. All products shall be stored in an approved, orderly manner so that there will be a minimum of re-handling from the storage area to the final position in the trench.
3. Deliveries shall be scheduled so that the progress of the work is at no time delayed.
4. Storage products will be restricted to approved or permitted areas.
5. Products shall not be stored on areas over the newly laid pipe.
6. Products may not be stored on private property unless permission to do so has been granted by the property owner.
7. Avoid damage to pipe from impact, bending, compression or abrasion during handling and storage.
8. Store pipe on flat surface, which provides even support for the pipe barrel with bell ends overhanging. Do not stack pipe higher than 5 feet. Do not store pipe and fittings in direct sunlight.
9. Ship rubber gaskets in cartons and store in a clean area away from grease, oil, ozone producing electric motors, heat, and the direct rays of the sun.
10. Use only nylon-protected slings to handle pipe. The use of hooks or bare cables will not be permitted.

PART 2.00 - PRODUCTS

2.01 BURIED POLYVINYL CHLORIDE TOE DRAIN PIPE

- A. Buried polyvinyl chloride (PVC) pipe shall conform to ASTM D 1785 Schedule 40 Pipe, and shall meet the following specific requirements and exceptions:
1. The pipe shall be of a bell and spigot connection design.
  2. The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusion, or other injurious defects. The pipe shall be as uniform as commercially practical in color, capacity, density, and other physical properties.
  3. All fittings and accessories shall have dimensions as recommended by the manufacturer.
  4. Pipe shall pass impact resistance test in accordance with ASTM D 2444 and minimum pipe stiffness test at 5% deflection in accordance with ASTM D 2412.
  5. The normal length of pipe shall be 20 feet.
  6. Manning's "n" value for the pipe shall be 0.015 or less.

18255.01  
07/24

**SECTION 02621  
POLYVINYL CHLORIDE (PVC) TOE DRAIN PIPE**

2.02 OTHER MATERIALS

- A. All other materials not specifically described but required for proper and complete installation of the pipe shall be as selected by the Contractor, subject to the approval of the Engineer.

2.03 SLOTS

- A. All perforated pipes shall be perforated by the manufacturer. On-site perforating shall not be permitted unless procedures for providing consistent and accurate perforation patterns are submitted and accepted by the Owner's representative prior to completion of the work.
- B. Perforated pipes shall be provided with slot perforations:
  - 1. Slot: Slot perforations shall be of the well screen configuration. For 6- inch PVC pipe, slots shall have a maximum spacing of ¼ inch and a slot width of 1/8 inch (32 perforations per foot).
  - 2. Each foot of pipe shall be capable of a 14.88 gpm flow rate.
  - 3. Slots after fabrication shall be smooth and free from frayed or jagged edges.
- C. Other perforation types will not be permitted unless the Contractor can provide an acceptable graded filter drain design free of geotextile filter fabrics. The design shall follow Chapter 26 of Part 633 National Engineering Handbook (NRCS) and be stamped by a Professional Engineer licensed in the State of Rhode Island.

PART 3.00 - EXECUTION

3.01 PROJECT CONDITIONS

- A. Call Dig Safe: All Contractors or Subcontractors performing drilling, boring, auguring, jetting, sheeting or pile installation, demolition, excavation or like work shall, prior to commencement of these activities, contact utility companies having responsibility for underground transmission systems for information relative to locations of existing underground utilities and/or an appropriate dig safe damage prevention and notification agency.

3.02 INSPECTION

- A. All water distribution system products shall be subject to inspection and approval by Owner at the place of manufacture and/or at the site after delivery. The products shall be subject to rejection at any time due to failure to conform to the specifications. Rejected products shall be removed from the site immediately. All the products shall be carefully examined for defects, and if any are found to be broken or defective, prior to or after being placed, they shall be removed and replaced by the Contractor without any further compensation.

3.03 PRODUCT HANDLING

- A. Each product shall be handled into its position in the trench in such a manner and by such means as the manufacturer recommends as satisfactory, and these operations will be restricted to those considered safe for the workmen and such as to cause no injury to the product or any property.



18255.01  
07/24

**SECTION 02621  
POLYVINYL CHLORIDE (PVC) TOE DRAIN PIPE**

- B. The Contractor will be required to furnish slings, straps and/or other devices to provide satisfactory support of the pipe when it is lifted. Transportation from delivery areas to the trench shall be restricted to operations, which can cause no injury to the product. The products shall not be dropped from trucks or into the trench.
  
- C. The Contractor shall have on the job site with each crew, all the proper tools to handle the products being installed. The use of hammer and chisel, or any other method, which results in rough edges, chips, and other damage, shall be prohibited.

3.04 INSTALLATION OF PIPE

- A. Installation of pipe shall be performed in accordance with AWWA C605-94. The following requirements shall be met:
  - 1. All pipe shall be laid in accordance with the recommendations or specifications of the manufacturer insofar as they do not conflict with these specifications.
  - 2. Pipe and appurtenances shall be examined carefully for cracks or other defects.
  - 3. Pipe shall be laid to lines and depths shown on the drawings or approved by the Owner and the Work done with suitable tools and appliances. An even alignment of the pipes shall be maintained.
  - 4. Blocking will not be permitted.
  - 5. Each length of pipe shall be laid to form a tight joint, as hereinafter specified, and to bring the inverts into a continuous line.
  - 6. All pipes shall be clean and free of dirt before laying and open ends shall be kept covered and free of dirt during construction.
  - 7. The work shall be conducted in such a manner that no loose excavation or other foreign material can enter the pipes.
  
- B. All toe drain lines shall be kept clean of debris and soil accumulation as a result of construction activities. Drain lines that become clogged or partially filled with sediment or debris as a result of construction activities shall be cleaned at no additional cost to the Owner.

END OF SECTION

PART 1 - GENERAL

1.01 WORK DESCRIBED

- A. This Section includes the following:
  - 1. Hot Mix Asphalt paving on embankment crest.
  - 2. Hot Mix Asphalt patching.
- B. Related Sections include the following:
  - 1. Section 02200 "Earthwork" for aggregate subbase and base courses and for aggregate pavement shoulders.
- C. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 REFERENCES

- A. All work specified in this Section shall conform to "Standard Specifications for Highway and Bridges" of the Massachusetts Department of Transportation, latest revision, herein referred to as "State Standards".
- B. Existing Conditions Plan compiled from the following sources:
  - 1. Existing conditions mapping taken from plan entitled "Existing Site Plan of Lake Maspenock Dam Left Downstream Wall Repair" prepared Pare Corporation., dated January 2023.
  - 2. Wetland Flags identifying wetland resource areas were placed by Pare Corporation on August 2022.

1.03 DEFINITIONS

- A. DOT: Massachusetts Department of Transportation
- B. HMA: Hot Mix Asphalt

1.04 DESIGN REQUIREMENTS

- A. Use all means necessary to protect bituminous concrete pavement materials before, ongoing, and after installation, and to protect the installed work and materials of all other trades.
- B. In the event of damage, immediately make all repairs and replacements necessary as directed by the Owner's Representative at no additional expense to the Owner.

1.05 SUBMITTALS

- A. Product Data: For each type of product indicated include technical data, gradation, and composition of materials proposed.
- B. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.

- C. Qualification Data: For manufacturer.
- D. Material Test Reports: For each paving material.
- E. Conformance Certificates: For each paving material, signed by manufacturers.

1.06 WORK DESCRIBED

- A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp or if the following conditions are not met:
  - 1. Prime and Tack Coats: Minimum surface temperature of 60 deg F.
  - 2. Slurry Coat: Comply with weather limitations of ASTM D 3910.
  - 3. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
  - 4. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.
  - 5. Shall not be placed on frozen ground.
  - 6. Surface courses shall not be placed between November 15<sup>th</sup> - April 1<sup>st</sup>.

PART 2 - PRODUCTS

2.01 AGGREGATES

- A. Conform to State Standards.

2.02 HOT MIX ASPHALT SURFACE COURSE

- A. Hot Mix Asphalt Surface Course – Standard Top; conform to Section 450 or 460 as applicable and Section M3.11.00 of the State Standards.

2.03 HOT MIX ASPHALT BASE COURSE

- A. Hot Mix Asphalt Base/Intermediate Course- Binder; conform to Section 450 or 460 as applicable and Section M3.11.00 of the State Standards.

2.04 TACK COAT

- A. Conform to Asphalt Emulsion Tack Coat as specified in Section 460 and Section M3.11.06 of the State Standards.

2.05 SUB-BASE COURSE

- A. Provide Sub-Base Course material as specified on the Drawings. Materials shall conform to Section 02200 – Earthwork.

2.06 SUBGRADE

- A. Construct subgrade with Ordinary Borrow as specified in Section 02200 - Earthwork.

2.07 CURBING

- A. Granite curbs shall be in accordance to MassDOT Standard Specifications M9.04.1 and installed in accordance to MassDOT Std. Spec. Section 500.

- B. Precast concrete curbing shall conform to Subsection 501.63 and M4.02.14 of the State Standards.
- C. Bituminous Berm shall conform to Hot Mix Asphalt Berm Type A in Section 501.64 of the State Standards.
- D. Provide concrete curb lock on all curbing. Curb lock shall be 3,000 psi concrete.

2.08 COARSE AGGREGATE

- A. ASTM D 692, sound; angular crushed stone, crushed gravel, or properly cured, crushed blast-furnace slag.

2.09 FINE AGGREGATE

- A. ASTM D 1073, sharp-edged natural sand or sand prepared from stone, gravel, properly cured blast-furnace slag, or combinations thereof.
  - 1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

2.10 TEMPORARY TRENCH PATCHING

- A. Conform to Section 472 of the State Standards.

PART 3 - EXECUTION

3.01 CONTRACTOR REQUIREMENTS

- A. The Contractor shall perform and complete the construction work within the limits indicated in a continuous manner so that the pavement placement work may proceed without delay.
- B. The Contractor shall, at all times, prior to acceptance of the work by the Engineer, maintain the completed work in a safe and satisfactory condition. All maintenance and repairs to the completed work shall be subject to the approval of the Engineer and the controlling municipal and State authorities. All maintenance and repairs of the completed work shall be provided by the Contractor at no additional cost to the Owner.
- C. Equipment used in the work will be subject to approval by the Engineer and shall be maintained in a satisfactory condition at all times. Unless otherwise permitted, compaction shall be performed by use of suitable power rollers. Finished surfaces of new asphaltic surface courses shall finish even with adjacent existing pavement surfaces and be free from surface irregularities.
- D. It shall be the responsibility of the Contractor to obtain from the controlling municipal authorities all required permits for cutting roadway pavements and to perform the work in accordance with all customs and requirements of the controlling authorities, in addition to those specified herein, and at no additional expense to the Owner.
- E. Existing pavements outside of the indicated work limits which are damaged as a result of the Contractor's operations, including base courses, bituminous tack coats and surface courses, shall be replaced by the Contractor in accordance with the requirements specified herein for the respective type of pavement; in a satisfactory manner and at no additional cost to the Owner.

**SECTION 02710**  
**HOT MIX ASPHALT PAVING**

- F. In case of settlement or other defects in new or replaced pavements, the Contractor shall cut out, replace, restore or repair the damaged pavements at no additional expense to the Owner. This requirement shall remain in effect for 2 years after the acceptance of the work by the Owner. The pavement area to be replaced, repaired or restored, shall extend from edge of pavement to edge of pavement, a minimum of 6 feet on either side of the defect; final pavement course shall be feathered to provide a smooth finish detail.
- G. The Contractor shall furnish a bond for the 2-year duration to the Owner insuring that the corrective repairs will be performed if necessary.
- H. This contract shall not be considered complete until the replacement, restoration and repair of pavements has been provided in a manner satisfactory to the Owner's Representative, and in accordance with the requirements specified herein.

3.02 SUB-BASE COURSE PLACEMENT

- A. Refer to Section 02200 Earthwork.
- B. Place materials in the proper lift depths and perform compaction as specified in the earthwork section. Make proper allowance for HMA courses.
- C. All compaction shall be performed with approved equipment well suited to location and material being compacted. Use heavy vibratory rollers where heavy equipment is authorized.
- D. Do not operate heavy equipment closer to a foundation than a horizontal distance equal to height of backfill above bottom of foundation. Compact remaining area with hand tampers suitable for material being compacted. Place and compact backfill around pipes with care to avoid damage.

3.02 HOT MIX ASPHALT BASE COURSE

- A. Provide a Hot Mix Asphalt Base Course on the Sub-base in compacted thickness as shown on the drawings. The Hot Mix Asphalt Base Course shall be provided in accordance with the applicable requirements of the State Standards, Section 420 or 701 as applicable and Section M3.11.00 for materials.

3.04 HOT MIX ASPHALT SURFACE COURSE

- A. Place Hot Mix Asphalt Surface Course in compacted thickness as shown on drawings. The finished pavement surface shall conform to the proposed grades of the roadway or as directed, and shall be flush with all existing pavements unless otherwise indicated.
- B. The Hot Mix Asphalt Surface Course shall be provided in accordance with the applicable requirements of the State Standards, Section 460 or 701 as applicable and Section M3.11.00 for materials.
- C. A tack coat conforming to the State Standards shall be applied to the base course prior to the placement of the surface course.

3.05 COMPACTION

- A. The Contractor shall conform to the State Standards for pavement operations, including compaction.

**SECTION 02710**  
**HOT MIX ASPHALT PAVING**

- B. Immediately after the HMA mixture has been spread, struck off, and surface irregularities adjusted, it shall be thoroughly and uniformly compacted by rolling. The surface shall be rolled when the mixture is in the proper condition and when rolling does not cause undue displacement, cracking and shoving.
- C. The number, weight and type of rollers furnished shall be sufficient to obtain the required compaction while the mixture is in a workable condition. Rolling shall be continued until all roller marks are eliminated and the minimum densities have been obtained based upon 95 percent of laboratory Marshall Densities made in the proportions of the job-mix formula, AASHTO T-245.
- D. Steel-Tired, Static Weight Rollers: The maximum roller speeds for steel-tired static-weight rollers for various operations shall not exceed three miles per hour. The wheels of steel-wheel rollers shall be kept moist and clean to prevent adhesion of the fresh material, but an excess of water will not be permitted.
- E. Vibratory Rollers: The maximum roller speed for vibratory rollers shall be that which provides impact spacing less than the compacted lift thickness. When vibratory rollers are used in the static mode, roller speed shall not exceed three miles per hour.
- F. When an approved vibratory roller is used for breakdown rolling in a vibratory mode, intermediate rolling will not be required. When the vibratory roller is used for finish rolling it shall be used in the static mode. Rolling shall progress continuously until the specified density of the corresponding daily plant Marshall Density, AASHTO T-245 has been attained. Finish rolling shall continue until all roller marks are eliminated.
- G. Unless otherwise directed, rolling shall start longitudinally at the sides and gradually progress toward the center of the pavement except on super-elevated curves where the rolling shall begin on the low side and progress to the high side, overlapping on successive trips by at least one-half the width of tandem rollers and uniformly lapping each preceding track.
- H. The motion of the rollers shall be slow enough at all times to avoid displacement of the hot mixture. Any displacement resulting from reversing the direction of the rollers or from any other cause shall be satisfactorily corrected.
- I. When the base course, binder course, or wearing course fails to comply with the density requirements herein specified, additional compaction might be applied when permitted and as directed, to attain the required density. If satisfactory density cannot be attained the Contractor shall be required to remove and replace, at his own expense, any affected area that is proven to be structurally inadequate and/or incapable of maintaining material integrity.
- J. Any mixture that becomes loose and broken, mixed with dirt, or is in any way defective, shall be removed and replaced with fresh hot mixture, which shall be compacted to conform to the surrounding area. Any area showing an excess or deficiency of HMA material shall be removed and replaced.
- K. In the event of dispute as to the creditability of the results, density shall be determined from cores taken from the pavement.

3.06 QUALITY ASSURANCE

- A. Manufacturer shall be a paving-mix manufacturer registered with and approved by the Massachusetts Department of Transportation.
- B. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated, as documented according to ASTM E 548.

**18255.01**  
**07/24**

**SECTION 02710**  
**HOT MIX ASPHALT PAVING**

C. Regulatory Requirements: Comply with the State Standards.

3.07 TEMPORARY TRENCH PATCHING

A. Install temporary trench patch in accordance with to Section 460.62 of the State Standards.

END OF SECTION

18255.01  
07/24

**SECTION 02900  
LANDSCAPING**

PART 1.00 GENERAL

1.01 WORK INCLUDED

- A. This section covers the work necessary for finish grading and grass establishment, complete, including furnishing and delivery of material, fertilizing, seeding, and maintenance of grass. General Seed Mix, Conservation Seed Mix, and Wetland Set Mix as specified herein, shall be used for seeding lawns, downstream area, and all areas disturbed by construction.

1.02 SUBMITTALS

- A. Provide certifications of performance for mulch products and analysis of proposed seed products that have been tested by a recognized laboratory for seed testing. Do not use seed that has become wet or moldy.
- B. Provide moisture content test results for imported loam and normalize for 8% moisture content.

PART 2.00 PRODUCTS

2.01 LOAM BORROW

- A. Loam Borrow may be available from stockpiles on the site from the Contractor's stripping. Prior to using stockpiled loam, contractor shall screen material to ensure it complies with required specifications. Reuse of onsite loam is subject to approval of the Owner's representative. If more loam borrow is needed than has been stockpiled, supply imported loam borrow at the Contractor's sole expense.
- B. Loam Borrow shall consist of fertile, friable, natural topsoil typical of the locality, without admixture of subsoil, refuse or other foreign materials, and shall be obtained from a well-drained arable site. It shall be such a mixture of sand, silt and clay particles as to exhibit sandy and clayey properties in and about equal proportions. It shall be reasonably free of stumps, roots, heavy or stiff clay, stones larger than 1 inch in diameter, lumps, coarse sand, noxious weeds, sticks, brush or other litter. ·
- C. Prior to stripping, the loam shall have demonstrated by the occurrence upon it of healthy crops, grass or other vegetative growth that is reasonably well drained and that it does not contain toxic amounts of either acid or alkaline elements.
- D. The loam shall contain not less than 4% nor more than 10% organic matter as determined by the loss on ignition of oven-dried samples per MassDOT Standard Specifications M1.05.0. Test samples shall be oven-dried to a constant weight at a temperature of 230°F ±90.
- E. The acidity range of Loam shall be pH 5.5 to 7.0 per MassDOT specification M1.05.0.
- F. Delivered loam shall be normalized to 8% moisture content.

2.02 pH CONTROL

- A. The following amendments shall be included in soils where required by the soils analysis tests:
  - 1. Soil sulfur.
  - 2. Commercially packaged gypsum.
  - 3. Ground dolomitic limestone.



18255.01  
07/24

**SECTION 02900  
LANDSCAPING**

2.03 LIME

- A. Ground dolomitic limestone not less than 85 percent total carbonates and magnesium, ground so that 50 percent passes the 100-mesh sieve and 95 percent the 20-mesh sieve per MassDOT Standard Specification M6.01.0. Coarser material will be acceptable provided the specified rates of application are increased proportionately on the basis of quantities passing the 100-mesh sieve.

2.04 FERTILIZER

- A. Commercial Fertilizer: A complete plant food containing 10 percent nitrogen, 10 percent available phosphoric acid, and 10 percent potash or sufficient to meet the recommendations for soil amendment per MassDOT Standard Specification M6.02.0, conforming to applicable state fertilizer laws, availability of plant nutrients conforming to standards of the Association of Official Agricultural Chemist (AOAC), uniform in composition, dry free-flowing, and delivered in original, unopened containers bearing manufacturer's guaranteed analysis.
- B. Superphosphate: Ammonium phosphate (16-20-0) containing 1.4 percent sulfur; granular, dry, free-flowing delivered in original bags.

2.05 TEXTURAL SOIL AMENDMENTS

- A. Peat: A natural residue formed by decomposition of reeds, sedges, or mosses from fresh-water site, free from lumps, roots, and stones, absorbing at least four times its dry weight of water, organic matter not less than 90 percent on a dry weight basis. The maximum moisture content at time of delivery shall be 6% percent by weight.
- B. Sand: Clean, coarse, well-graded material meeting all of the requirements of ASTM C33 for fine aggregate.

2.06 MULCH

- A. Straw Mulch: Threshed straw of oats, wheat, or rye, free from seed of obnoxious weeds or clean salt hay.

2.07 NETTING

- A. Jute Netting: Heavy, twisted jute netting, weighing 1 pound per square yard. Openings between strands of approximately 1-inch square.

2.08 SEED

- A. General: Certified, blue tag, clean delivered in original, unopened packages and bearing an analysis of the contents, guaranteed 95 percent pure and to have a minimum germination rate of 85 percent within 1 year of test.
- B. General Seed Mix: Slope Mix shall be used for any areas with a slope in excess of 5H:1V. Grassplots Mix shall be utilized in all other areas.

Grass seed shall be of the previous year's crop and in no case shall the weed seed content exceed 1 % by weight. The grass seed shall conform to the requirements of the following tables:

**SECTION 02900  
LANDSCAPING**

	Proportion	Germination Minimum	Purity Minimum
<b>For Grassplots &amp; Islands</b>			
Creeping Red Fescue	59%	85%	95%
Kentucky Blue	30%	85%	90%
Perennial Rye	5%	90%	98%
Red Top	5%	85%	92%
Dutch White Clover	1%	85%	96%
<b>For Slopes &amp; Shoulders</b>			
Creeping Red Fescue	50%	85%	95%
Tall Fescue	35%	85%	90%
Perennial Rye	5%	90%	98%
Red Top	5%	85%	92%
Dutch White Clover	5%	85%	96%

The seed shall be furnished and delivered premixed in the proportions specified above. All seed shall comply with State and Federal seed laws. The seed mixture specified for slopes and shoulders consists of a tough hardy type for use on slopes graded at the rate of 4:1, and steeper slopes, and on shoulders adjacent to the roadway pavement or as otherwise directed. The mixture for grass plots is of a finer type which will produce finer turf. A manufacturer's Certificate of Compliance to the specifications shall be submitted by the manufacturers with each shipment of each type of seed. These certificates shall include the guaranteed percentages of purity, weed content and germination of the seed, and also the net weight and date of shipment. No seed may be sown until the Contractor has submitted the certificates.

- C. Temporary Protective Seed: Annual rye grass applied at rate of 120 pounds/acre.
- D. Inoculate: Pure culture of nitrogen-fixing bacteria prepared specifically for the legume species. A mixing medium as recommended by the manufacturer shall be used to bond the inoculate to the seed.

2.09 CHEMICAL SOILS TESTS

- A. Submit samples of Subgrade Soil to the County or State Soil Testing Service for chemical analysis of soil after completion of rough grading to determine lime and/or super phosphate requirements.
- B. Submit Loam Borrow for chemical analysis after incorporation of soil conditioners to determine lime and fertilizer requirements of County or State Soil Testing Service using samples taken from the top 4 inches of soil at 10 locations following standard soil sampling procedures. One copy of the fertilizer and liming recommendation report shall be submitted to the Engineer.

2.10 MECHANICAL SOILS TEST

- A. Have mechanical analysis of topsoil performed by a soil analyst or Engineer to determine conformance to specified physical properties in accordance with AASHTO T 88-72, Mechanical Analysis of Soils.

18255.01  
07/24

**SECTION 02900  
LANDSCAPING**

PART 3.00 EXECUTION

3.01 SEEDING SCHEDULE

- A. Within 20 calendar days of the date specified for commencement of seeding work, submit to the Engineer a proposed time schedule indicating dates for beginning and completion of the following operations:
1. Delivery of materials.
  2. Preparation of seedbed.
  3. Planting grass.
  4. Maintenance.

3.02 CONSTRUCTION METHODS

- A. Preparation of Subgrade: After rough grading is completed and before Loam Borrow is spread, apply lime and/or super phosphate as determined by chemical analysis, and thoroughly scarify ground to a minimum depth of 8 inches with a toothed ripping machine by running in two directions at right angles over the entire surface to be planted.
- B. Spreading of Loam Borrow: Spread Loam Borrow and textural soil amendments over the prepared rough grade to provide a finished topsoil thickness as specified on plans. Use a rubber-tired tractor with grader blade or equivalent not weighing more than 3½ tons. Loam Borrow shall be spread to the required thickness at impacted bordering vegetated wetland (BVW) areas.
- C. Disturbed areas within the embankment crest, slopes, staging area, roadways, and construction areas shall be top dressed as required to replace stripped material and grade to original elevations.
- D. Liming and Fertilizing:
1. Apply lime and/or super phosphates uniformly at the rate determined from soil test.
  2. Apply commercial fertilizer at the rate of 40 lbs per 1,000 sf distributing uniformly with a mechanical spreader, or at rate determined from soil test.
- E. Finish Grading:
1. Thoroughly mix the applied materials to a depth of 8 inches by running a rototiller over the entire area in two directions at right angles.
  2. Rake the topsoil area to a uniform grade so that all areas drain, as indicated on the final grading plan.
  3. Lightly compact with a cultipacker before planting grass. Care shall be taken not to over compact or seal the surface of the topsoil.
  4. Remove all trash and stones exceeding 2 inches in diameter from area to a depth of 2 inches prior to preparation and planting grass.
- F. Reseeding Disturbed Areas:
1. All areas within the staging area and temporary roadways that have become completed due to stockpiled material or the movement of traffic across the site shall be scarified to a depth of 8 inches.
  2. Finish grading shall be performed as described above.
- G. Seeding:

18255.01  
07/24

**SECTION 02900  
LANDSCAPING**

1. Time of Seeding: Conduct seeding under favorable weather conditions during seasons which are normal for such work as specified in the MASSDOT Standard Specifications.
2. Inoculating Seed: Inoculate shall be stored as recommended by the manufacturer and shall not be used later than the date indicated on the container or as otherwise specified. Inoculation of legumes shall be done within 48 hours before seeding.
3. Mechanical Seeding: Plant grass seed only when temperature and moisture conditions are suitable for work of this nature. Sow grassed areas evenly with a mechanical spreader at rate of 3 lbs per 1,000 sf, roll with cultipacker to cover seed, and water with fine spray. Method of seeding may be varied at discretion of Contractor on his own responsibility to establish a smooth, uniformly grassed area.
4. Hydroseeding:
  - a. Seeding shall be done within 10 days following soil preparation at rate of 3 pounds seed per 1,000 sf.
  - b. Proceed with seeding operation on moist soil, but only after free surface water has drained away.
  - c. Exercise due care to prevent drift and displacement of mixture into other areas.
5. Winter Protective Seeding: If seeding has not occurred by October 15, apply winter protective seed at a rate of 120 pounds per acre to all areas that are bare or incomplete. Remobilize to complete seeding in the spring.

H. Mulching and Protection:

1. Mulch all areas by spreading a uniform light cover of straw mulch over the seeded area at a rate of 2½ tons per acre not later than 2 days after seeding has been performed and tackify at a rate of 5 gallons per 1,000 sf.
2. Mulch all areas with a slope steeper than 20 percent, or in areas requested by the Owner's representative, as described and place jute netting or erosion control mats in strips paralleling the slope to completely cover newly seeded areas. Pin mulch to ground with 6-inch long wire staples at 5-foot intervals immediately after seeding.

3.03 MAINTENANCE

- A. Maintenance Period: Begin maintenance immediately after each portion of grass is planted and continue for a minimum of 8 weeks after all lawn planting is completed or until final acceptance.
- B. Maintenance Operations: Water to keep surface soil moist. Repair washed out areas by filling with Loam Borrow, liming, fertilizing, and seeding. Replace mulch on banks when washed or blown away. Mow frequently enough to keep grass from exceeding 6 inches. Weed by hand only after first planting season when grass is established.

3.04 GUARANTEE

- A. If, at the end of the 8-week lawn maintenance period, a satisfactory stand of grass has not been produced (as determined by the Owner or Engineer), the Contractor shall renovate and reseed the grass or unsatisfactory portions thereof immediately, or, if after October 15, during the next planting season. If a satisfactory stand of grass develops by July 1 of the following year, it will be accepted. If it is not accepted, a complete replanting will be required during the planting season meeting all of the requirements specified under CONSTRUCTION METHODS.
- B. A satisfactory stand is defined as grass or section of grass of 10,000 square feet or larger that has:
  1. No bare spots larger than 3 square feet.
  2. Not more than 10 percent of total area with bare spots larger than 1 square foot.

**18255.01**  
**07/24**

**SECTION 02900**  
**LANDSCAPING**

3. Not more than 15 percent of total area with bare spots larger than 6 inches square.

3.05 INSPECTION FOR ACCEPTANCE

- A. Eight weeks after the start of maintenance on the last section of completed grass and on written notice from the Contractor, the Engineer will, within 15 days of such written notice, make an inspection to determine if a satisfactory stand has been produced. If a satisfactory stand has not been established, another inspection will be made after written notice from the Contractor that the grass is ready for inspection following the next growing season. Final approval is subject to acceptance by the local Conservation Commission.

END OF SECTION

18255.01  
07/24

**SECTION 02930**  
**TREES, SHRUBS, AND GROUNDCOVERS**

PART 1.00 – GENERAL

1.01 WORK INCLUDED

- A. Provide all materials, equipment, and labor necessary to complete the work as indicated on the Drawings or as specified herein.
- B. The principal work of this section includes, but is not limited to, the following:
  - 1. Layout and excavation of plant holes
  - 2. Planting and backfilling
  - 3. Watering
  - 4. Mulching
  - 5. Fertilizing
  - 6. Staking and guying
  - 7. Antidessicant application
  - 8. Tags and labels
  - 9. Maintenance
  - 10. Plant replacement guarantee

1.02 REFERENCES

- A. ANSI Z260.1 – Nursery Stock, latest edition (American Association of Nurserymen, Inc.).

1.03 QUALITY ASSURANCE

- A. Contractor shall specialize in work outline with a minimum of five (5) years experience on similar projects.
- B. An Arborist, licensed by the state in which the work is to be performed, is required for all pruning work.
- C. At least three (3) shrubs of each variety and all trees shall be tagged with a waterproof tag bearing legible designation of botanical and common names, and all other standard products shall be delivered sealed and unbroken.
- D. If specified landscape material is not available, substitutions shall not be made without written approval by the Owner or Engineer.
- E. Where formal planting arrangements are shown, select stock and uniform height and spread, and label with numbers to assure symmetry in planting.
- F. The Owner and/or the Engineer reserves the right to inspect all plant materials for compliance with specifications, and to reject unsatisfactory or defective work at any time during progress of work.

1.04 SUBMITTALS

- A. Certifications and/or labels of proposed products, plant materials or substitutions, listing common and scientific names of each.

18255.01  
07/24

**SECTION 02930  
TREES, SHRUBS, AND GROUNDCOVERS**

- B. Proposed planting schedule.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Protect all products from weather or other damaging or deteriorating conditions.
- B. Plants which have been damaged or have deteriorated in transit or storage are not acceptable.
- C. Keep plants moist, fresh, and protected against exposure to sun, wind, and freezing temperatures whether in the receiving yard, in transit, while being handled, or at the job site awaiting planting.
- D. Deliver trees, shrubs and groundcover after preparations for planting have been completed and plant immediately.
- E. Planting Dates: Prepare a proposed plant schedule with each type of landscape work during normal seasons for such work. Once accepted, revise dates only as approved in writing by the Owner or Engineer, after documentation of reasons for delays.
  - 1. Deciduous Material
    - a. Spring: March 1 to June 15
    - b. Fall: September to December 1
  - 2. Evergreen Material
    - a. Spring: March 15 to May 30
    - b. August 15 to November 15
- F. Those species known to be fall digging hazards shall be dug during the spring season only. Fall planting of these species shall be permitted only with certification, from the nursery, of the time of digging and at the discretion of the Owner or Engineer.
- G. Correlate planting schedule with specified maintenance periods to provide maintenance to date of acceptance.
- H. Coordination with lawns: Plant trees, shrubs, and groundcover after final grades are established and prior to planting of lawns, unless otherwise acceptable to the Owner or Engineer. If planting of trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

1.06 WARRANTY

- A. Provide a warranty for tree, shrub, and groundcover plantings for a minimum of one year including one continuous growing season. Commence warranty on date identified in the Certificate of Final Completion.
- B. Warranty: Include coverage of plants from death or unhealthy conditions.
- C. Replacements: Plants of same size and species as specified, planted as soon as possible in the next growing season, with a new warranty and an extended maintenance service commencing on date of replacement.

18255.01  
07/24

**SECTION 02930  
TREES, SHRUBS, AND GROUNDCOVERS**

1.07 MAINTENANCE

- A. Maintenance of tree, shrub, and groundcover planting to be performed by Installer and includes:
  - 1. Watering, weeding, cultivating, and mulching.
  - 2. Tightening, guy webbing, and repairing of stakes.
  - 3. Replacing of dead material.
  - 4. Resetting plants to proper grades, or to upright position.

PART 2.00 - PRODUCTS

2.01 LOAM MIX

- A. For Loam Mix, refer to Section 02900 – LANDSCAPING.

2.02 ANTIDESSICANT

- A. Emulsion which permits transpiration while retarding excessive loss of moisture from plants. Deliver in manufacturer's fully identified containers and mix according to manufacturer's direction. Use "Wilt Pruf" or approved equivalent.

2.03 TREE AND SHRUB FERTILIZER

- A. Fertilizer shall be organic-based and OMRI (Organic Materials Review Institute) Certified.
- B. Complete fertilizer in granular form, from commercial sources bearing manufacturer's analysis; 2-3-3 ratio of N-P-K.
  - 1. Total Nitrogen (N): 2.0%
    - a. 0.8% Water Soluble Nitrogen
    - b. 1.2% Water Insoluble Nitrogen
  - 2. Available Phosphate (P<sub>2</sub>O<sub>5</sub>): 3.0%
  - 3. Soluble Phosphate (K<sub>2</sub>O): 3.0%
- C. Application Rate: Apply 2-3 pounds per 100 square feet.

2.04 STAKES AND GUYING MATERIALS

- A. Guy Web: Shall be a low abrasion woven fiber webbing with a break strength of 900 pounds or better. The width of the webbing shall be no less than 5/8-inch nor greater than 3/4-inch. The length shall be sufficient enough to be attached to the tree trunk and stake.
- B. Stakes: Shall be a hardwood source, free of knots, insects, and fungi. Stakes shall be of uniform size and shape and shall be a minimum of 2-inches square. Stakes shall be pointed with a taper of no less than 4-inches.
- C. The above ground stake height shall be 8-inches above the point of attachment. The type of stake shall be uniform throughout the job.



18255.01  
07/24

**SECTION 02930  
TREES, SHRUBS, AND GROUNDCOVERS**

2.05 MULCH

- A. Pine Bark Mulch shall be derived from evergreen tree bark aged to a minimum of 6-months and no more than 18-months. The bark shall be shredded so that the resulting pieces are no more than 1/4-inch thick and no longer than 3-inches. The mulch shall be free of stringy material and shall not contain an excess of fine particles. The mulch shall be brown in color, free of leaves, twigs, sod, weeds, shavings, and other foreign materials which are injurious to healthy plant growth.

2.06 WATER

- A. Clean, fresh, potable water free from injurious chemicals and other toxic substances harmful to plant life. No brackish water will be permitted.
- B. The Contractor shall provide all necessary water.

2.07 PLANT MATERIALS

- A. Plant materials shall conform in size, grade, and quality to the “American Association of Nurserymen Standards for Nursery Stock” as approved by the United States of America standards institute, in effect at the time of bidding.
- B. Plants of other kinds than those named in the Plant Schedule on the Drawings shall not be accepted without written approval from the Owner or Engineer.
- C. All plants shall be nursery-grown in accordance with good horticultural practices and shall have been grown under climatic conditions similar to those in the locality of the project for at least two (2) years unless otherwise approved by the Owner or Engineer.
- D. All plant material shall comply with the state and federal law with respect to inspection for plant disease and insect infection.
- E. Replacement plants larger in size than existing may be used if approved by the owner or Engineer in writing, provided use of larger plants does not increase the Contract price.
- F. If use of larger plants is approved, increase ball of earth spread of roots in proportion to size of plant.

PART 3.00 – EXECUTION

3.01 PLANTING

- A. Layout: Determine location of underground utilities and layout plants so as to avoid possible damage to such structures. Plant pits and bed locations as shown on the Drawings shall be staked on ground by the Contractor and approved by the Owner or Engineer prior to excavation. Should discrepancies exist between plant quantities in Planting Schedule and Plan, quantities shown on Plan shall govern. Adjustments in locations and outline shall be made as recommended in the field by the Owner or Engineer. Labor, equipment, and new smooth stakes are to be furnished by the Contractor for this purpose.

18255.01  
07/24

**SECTION 02930  
TREES, SHRUBS, AND GROUNDCOVERS**

- B. Excavation: Planting beds and pits shall conform to the approved stake locations and outlines. Holes dug for plantings shall in all cases be large enough to include the complete root system of the plant (tree, shrub, and groundcover) to be received and also sufficient amounts of approved backfill mix around the periphery of the rootball. All sod, weeds, roots, cobbles, stones, and other objectionable materials excavated from the plant holes which is unsuitable for backfill shall be removed from the site immediately and legally disposed of.
- C. Plant Hole Size: The minimum plant hole size, unless otherwise specified, shown on the Drawings or recommended by the Owner shall be as followed:
  - 1. Trees and Shrubs: The planting hole shall be three (3) times the diameter of the rootball in width and no deeper than 2-inches less than the distance from the bottom of the rootball to the root collar (i.e a 12" distance between the bottom of the rootball and the root collar will require a 10" deep hole). Any excavation in excess of that required shall be replaced and compacted to 85% of maximum density at no additional cost to the Owner.
  - 2. Groundcover: The planting hole shall be twice the diameter of the rootball in width and equal to the depth from the bottom of the rootball to the level at which it was grown in the nursery. Any excavation in excess of that required shall be replaced and compacted to 85% of maximum density at no additional cost to the Owner.
  - 3. Any rocks or underground obstructions shall be removed to a depth necessary for planting as specified, unless alternate locations for the planting are approved in writing by the Owner or Engineer. If removal of obstructions results in a deeper hole than specified for planting, backfill material shall be added and compacted to 85% of maximum density to the correct depth at no additional cost to the Owner.
- D. Backfill Mix: Add loam to suitable soil excavated from the planting hole to create mix for planting pits. Backfill Mix shall be at least 50% loam. Refer to Section 02900- LANDSCAPING.

3.02 SETTING PLANTS

- A. Plants shall be handled in such a manner that the soil of the rootball will not be loosened from the roots. Carefully place plant into the prepared hole. Set plants plumb and fill in around the rootball to half the depth of the hole with backfill mix. Thoroughly tamp the backfill mix to 85% of maximum density.
- B. Fill remaining area of planting hole with water. Once the water has completely drained, loosen burlap and peel down at least the top third. If wire baskets are used, cut and bend down the top third of the basket. Roots that have been wrapped around the ball within the burlap shall be made to lay in as natural a manner as possible. Cut broken or frayed roots cleanly.
- C. Fill remaining area of hole with backfill mix and thoroughly tamp to 85% of maximum density. Form a saucer around the edge of the backfill hole by constructing a berm. The finish height of the compacted berm shall be a minimum of 3-inches or as otherwise specified in the Drawings. No excess soil shall be allowed to remain within the plant saucer. Fill the saucer with water.

3.03 PRUNING OF NEW PLANT MATERIAL

- A. After planting, prune only dead, broken, or deformed branches in such a manner as to preserve natural character of the plant.

18255.01  
07/24

**SECTION 02930  
TREES, SHRUBS, AND GROUNDCOVERS**

- B. Perform all pruning with sharp tools, with cuts flush and clean. Do not apply paint or asphalt emulsion tree wound compound on cut area.
- C. Trees which have had their leaders cut, or so damaged that cutting is necessary, will not be accepted. There shall be no abrasion of bark, nor fresh cuts of limbs over ½-in.

3.04 WATER

- A. The plants shall be watered immediately following planting.
- B. Soak the plants thoroughly again within a 24-hour period after the initial planting.
- C. Additional watering shall be made at least once every 3-weeks, unless otherwise noted, until final acceptance of the plant material.

3.05 FERTILIZING

- A. During backfill operations, place fertilizer in upper 1-ft of backfill around perimeters, or as recommended by the manufacturer and approved by the Engineer.

3.06 MULCHING PLANTS

- A. Application of mulch should only occur after planting operations have been completed and initial watering has taken place. Mulch shall be applied no later than 48-hours after planting.
- B. Prior to the placement of mulch, the Contractor shall apply a pre-emergent weed control within the entire area to be mulched. Pre-emergent weed control shall be applied by a licensed commercial applicator at a rate in accordance with the manufacturer's installation.
- C. Mulch shall be applied to a minimum of 3-inches in depth for all individual trees and planting beds, or as otherwise specified in the Drawings.
- D. Where mulch abuts seeded lawn areas or other finish grade materials, edge of planting bed shall be cut smooth and cleanly. Mulch shall be placed carefully so as not to spill into adjacent areas. Any excess or spilled mulch shall be promptly removed from the project area.

3.07 GUYING AND STAKING

- A. Immediately after planting, stake trees as specified on the Drawings or as recommended by the Owner or Engineer.
- B. Place stakes outside of the planting pit exercising care not to damage the soil berm.
- C. Guy all trees with a caliper of 2-inches or greater and all evergreen trees greater than 4-feet. Guy webbing shall be attached at a point no higher than half the height of the tree or lower than a third the height of the tree.
- D. Guy trees to each stake near the top of the stake and intertwine webbing at the tree trunk. The guy webbing shall lay flat against the trunk. Draw guy webbing tight enough to remove slack but do not cause deflation or strain to the plant.

18255.01  
07/24

**SECTION 02930  
TREES, SHRUBS, AND GROUNDCOVERS**

3.08 TRUNK WRAPPING

- A. Remove all trunk wrap and trunk protection devices prior to staking and guying operations unless otherwise specified on the Drawings or as recommended by the Owner or Engineer.

3.09 ANTIDESSICANT SPRAYING

- A. Spray antidessicant as directed by the manufacturer's recommendations and as approved by the Owner or Engineer.

3.10 TAGS AND LABELS

- A. Leave all tree tag and label seals unbroken and visible on plant material until final inspection. Remove all seals immediately after inspection.

3.11 MAINTENANCE

- A. Contractor is responsible for protection and maintenance of all work prior to final acceptance. No plants will be accepted unless they show a healthy growth and satisfactory condition.
- B. Maintenance work for all plantings shall be as listed in Section 1.08.

3.12 PLANTING ON BANKS

- A. Apply jute mesh loosely but smoothly to fit the contour of the finished grade, parallel to and in the same direction as the flow of water. The up-slope end of each separate strip or piece of jute mesh shall be buried in a 6-inch minimum vertical anchor slot or junction slot with the soil tamped firmly against the mesh. Where more than one width of material is required, edges shall overlap a minimum of 12-inches, and the up-slope section of mesh will be on top. Down-hill ends of the jute mesh shall be folded under approximately 4-inches and stapled in place. Staples will be inserted through the mesh along edges, overlaps, and in the center of all jute mesh strips at intervals not greater than 3-feet. All anchor slots, junction slots, check slots, and terminal folds shall have five (5) staples spaced not more than 9-inches on center across widths.
- B. On seeded banks, jute shall be applied immediately after seeding. On shrub banks, apply jute after finish grading. Cut openings in mesh for each plant and mulch as specified.

3.13 PLANT REPLACEMENT GUARANTEE

- A. Guarantee that, upon completion and final acceptance of tree, shrub, and groundcover conforming to the requirements of the Contract, all plants except transplant materials are healthy and will remain so for a period of 1-year. Such period shall commence with date of final acceptance.
- B. At any time within the period of guarantee, the Contractor shall replace any plantings for any reason (other than vandalism) that has died or is in dying condition, or which has failed to flourish in such a manner or to such a degree that its usefulness or appearance has been impaired.
- C. The Owner will not maintain plantings until after the guarantee period. The Contractor shall not have any claim that materials have failed to flourish as a result of the Owner's maintenance operations, or lack of maintenance, and shall abide by term stated herein for guarantee and replacement of plant materials.

**18255.01**  
**07/24**

**SECTION 02930**  
**TREES, SHRUBS, AND GROUNDCOVERS**

- D. The decision of the Owner as to, upon necessity, replace plant materials or repair any defects based on workmanship, destruction, or loss, or impairment or failure to flourish, shall be conclusive and binding upon the Contractor.
  
- E. “Vandalism” is intended to mean any acts, whether intentional or accidental, by other persons following the final acceptance, which clearly result in breakage or other damage to individual plants or plant beds, and which may reasonably be considered to be beyond the Contractor’s reasonable control as determined by the Owner or Engineer.

END OF SECTION

Lake Maspenock Dam  
Left Downstream Wall Repair Re-Bid  
Milford, MA

**DIVISION 3 – CONCRETE**

18255.01  
07/24

**SECTION 03100**  
**CONCRETE FORMWORK**

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. This section specifies requirements for concrete formwork to produce cast-in-place concrete structures as shown on the Drawings and as specified herein. The work shall consist of designing, furnishing, constructing and removing formwork for all cast-in-place concrete structures.
- B. Use forms, wherever necessary, to confine the concrete and shape it to the required lines, and to provide the specified finish. Construct forms with sufficient strength to structurally support the work, and withstand the pressure resulting from placement and vibration of the concrete, and maintain forms rigidly in position. Construct forms sufficiently tight to prevent loss of mortar from the concrete.

1.02 REFERENCES

- A. American Concrete Institute (ACI):
  - 1. ACI 117: Standard Specification for Tolerances for Concrete Construction and Materials.
  - 2. ACI 301: Standard Specification for Structural Concrete.
  - 3. ACI 347: Guide to Formwork for Concrete.
- B. Massachusetts State Building Code
- C. American Society for Testing and Materials
  - 1. ASTM D 2000 Standard Classification System for Rubber Products in Automotive Applications

1.03 QUALITY CONTROL

- A. Provide in accordance with the requirements as specified.
- B. Tolerances:
  - 1. Permissible surface irregularities for the various classes of concrete surface finish as specified in Section 03300, Cast-in-Place Concrete, are defined as “finishes”, and are to be distinguished from tolerances as specified herein. Deviations from the established lines, grades, and dimensions will be permitted to the extent set forth herein.
  - 2. The tolerance limits specified in this Section and the surface finish irregularities permitted in Section 03300, Cast-in-Place Concrete, are not the limits to which forms may be built or by which damaged from sheathing may be used. These limits are provided only for the occasional slight misalignment or irregularity of surface that may occur despite a serious effort to build and maintain the forms accurately and securely with an even surface. These limits will be allowed only for inadvertent or relatively infrequent irregularities of the degree mentioned, but practices and form materials will be prohibited which without doubt will result in the creation of additional irregularities, even though these would be within the limits specified.
  - 3. Where specific tolerances are not stated herein or shown on the Drawings for a structure, portion of a structure, or other feature of the work, permissible deviations will be interpreted conforming to the tolerances stated herein for similar construction. Specific maximum or minimum tolerances as shown on the Drawings in connection with any dimension shall be considered as supplemental to the tolerances specified herein and shall govern. Concrete forms shall be set and maintained within the tolerance limits necessary to ensure that the

18255.01  
07/24

**SECTION 03100  
CONCRETE FORMWORK**

completed work will be within the tolerances specified. Concrete construction that exceeds the tolerance limits specified or as shown on the Drawings shall be remedied or removed and replaced by the Contractor at no cost to the Owner.

4. Tolerances shall be as specified in ACI 117, Standard Specifications for Tolerances for Concrete and Materials.

1.04 DESIGN REQUIREMENTS

- A. Design formwork to support vertical loads and lateral pressures resulting from placement and vibration of concrete in accordance with the requirements of ACI 301 and ACI 347, and as specified herein.
- B. Camber the formwork to compensate for anticipated deflections due to the weight and pressure of the fresh concrete and due to construction loads.
- C. Provide shores and struts with positive means of adjustment capable of taking up formwork settlement during concrete placing operations. Use wedges or jacks, individually or in combination for adjustment.
- D. Design forms and falsework to include assumed values of live loads, dead load, weight of moving equipment operated on formwork, concrete mix, height of drop, vibrator frequency, ambient temperature, lateral stability, and other factors pertinent to the safety of the structure during construction.
- E. Provide and design forms to conform with expansion and construction joint locations.

1.05 SUBMITTALS

- A. Submittals for the following items shall be made in accordance with the requirements as specified.
- B. Submit the following at least 30 days before the first concrete placement:
  1. Manufacturer's data and installation instructions for proprietary form accessories, form coatings, pipe sleeves and seals, form ties and manufactured form systems if used.
  2. Certification that form coatings comply with the requirements of this Section.

PART 2.00 - PRODUCTS

2.01 MATERIALS

- A. Forms for Exposed Finish Concrete: Construct formwork for exposed concrete surfaces with smooth faced undamaged plywood or metal, metal-framed plywood faced or other acceptable panel-type facing materials approved by Engineer, to provide continuous, straight, smooth as-cast surfaces, and produce a uniform and consistent texture and pattern on the surfaces. Metal patches on forms for these surfaces will not be permitted. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on the drawings.
  1. Use overlaid plywood complying with U.S. Product PS-1 "A-C or B-B High Density Overlaid Concrete Form", Class I.
  2. Use plywood complying with U.S. Product Standard PS-1 "B-B (Concrete Form) Plywood", Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible



**SECTION 03100**  
**CONCRETE FORMWORK**

inspection trademark.

- B. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.
- C. Tubular Fiber Forms:
  - 1. Provide forms with spirally constructed laminated plies of fiber.
  - 2. Provide forms with wall thickness as recommended by the manufacturer to meet load requirements of the various uses and sizes.
  - 3. Provide forms with wax coated outside surfaces for moisture resistance.
  - 4. Provide forms with inside surface coated with bond-breaker compound.
- D. Form Ties:
  - 1. Form Ties: For concrete structures, which will not be in view or buried below finish grade, use carbon steel factory-fabricated, removable or stay in place snap-off type form ties, designed to prevent form deflection and to prevent spalling concrete upon removal. Provide units, which will leave no metal closer than 1-1/2" to surface. Provide ties which, when removed, will leave holes not larger than 1" diameter in concrete surface. Patch all holes with non-shrink grout.
  - 2. Form ties and spreaders for walls in areas exposed to view shall be Stainless Steel Cone-Tight Tyscru by Richmond Screw Anchor Co.; Dayton Sure-Grip and Shore Co.; or substitute approved by Engineer with Plastic cone-tight type cones having a 1" setback and a taper from 1" to 1-1/4". Tycone holes shall be sealed with plastic set back plugs, color as selected by Engineer from manufacturer's standard color selection or filled with non-shrink grout. Tyscru ties shall be sized to satisfy loading requirements.
  - 3. In lieu of form ties specified above, fiberglass form tie systems shall be used. Fiberglass form ties shall be standard gray color. The concrete structure shall be finished by grinding the fiberglass form tie flush with the finish surface of the concrete structure.
- E. Form Releasing Agents: Provide commercial formulation form-releasing agents that will not bond with, stain, nor adversely affect concrete surfaces requiring bond or adhesion, nor impede the wetting of surfaces to be cured with water or curing compounds. Volatile organic compound emissions of form coating agent shall not exceed 2.09 pounds per gallon (250 grams per liter).
- F. Chamfer Strips: Provide 3/4-inch triangular fillets to form all exposed concrete corners. Material shall be rubber or polyvinyl chloride type, or smooth clear, sealed softwood.
- G. Sleeves: Sleeves for wall and floor penetrations shall be pre-engineered Century-Line sleeves as manufactured by Thunderline Corporation or Engineer approved substitute. Sleeves shall be constructed of high impact thermoplastic with waterstop collar, reinforcing ribs and nailer end caps for positioning forms. Sleeve shall be designed to work with modular mechanical seal for through wall penetrations. Size of sleeves shall be selected according to manufacturer's recommendations for pipe sizes indicated on drawings.
- H. Seals: Sleeve/pipe seals shall be Link-Seal modular mechanical seals as manufactured by Thunderline Corporation or Engineer approved substitute. The seal shall be modular, mechanical; type, consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and the wall opening. The elastomeric element shall be sized and selected per manufacturer's recommendations and have the following properties as designated by ASTM:

18255.01  
07/24

**SECTION 03100**  
**CONCRETE FORMWORK**

1. For standard service applications: (-40°F to 250°F) EPDM – ASTM D2000 3 BA 5 10.
2. For hydrocarbon service applications: (-40°F to 210°F) Nitrile – ASTM D2000 1 BF 5 10.
3. For high temperature or fire seal applications: (-60°F to 400°F) Silicone – ASTM D2000 1 GE 5 05.

PART 3.00 - EXECUTION

3.01 INSPECTION

- A. Examine the substrate and conditions under which work of this Section is to be performed, and correct unsatisfactory conditions, which would prevent proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 FORM CONSTRUCTION

A. General:

1. Construct forms as designed and in accordance with Contractor's approved working drawings conforming to ACI 347, to the exact sizes, shapes, lines, and dimensions shown, and as required to obtain accurate alignment, location, grades, level, and plumb work in finished structures.
2. Provide for openings, offsets, keyways, recesses, moldings, chamfers, blocking, screeds, bulkheads, anchorages, inserts, and other features required. Use selected materials to obtain required finishes.
3. Forms for concrete which accommodate work of other trades, fabricated before the opportunity exists to verify the measurements of adjacent construction, shall be accurately sized and located as dimensioned on the Drawings. In the event that deviation from the Drawing dimensions results in problems in the field, the Contractor shall be responsible for resolution of the conditions as approved by the Engineer, at no cost to the Owner.

B. Fabrication:

1. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage concrete surfaces.
2. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Brace temporary closures and set tightly to temporary openings on forms in as many inconspicuous locations as possible, commensurate with design requirements. Form intersecting planes to provide true, clean cut corners.

C. Falsework:

1. Erect falsework and support, brace, and maintain it to safely support vertical, lateral, and asymmetrical loads applied until complete structure has attained design strength. Construct falsework so that adjustments can be made for take-up and settlement, and access is provided for inspection.
2. Provide wedges, jacks or chamfer strips to facilitate vertical adjustments. Carefully inspect falsework and formwork during and after concrete placement operations to determine abnormal deflection or signs of failure; make necessary adjustments to product work of required dimensions.

**SECTION 03100**  
**CONCRETE FORMWORK**

- D. Forms for Exposed Concrete:
1. Drill forms to suit ties used and to prevent leakage of concrete mortar around tie holes. Do not splinter forms by driving ties through improperly prepared holes
  2. Provide sharp clean corners at intersecting planes, without visible edges or offsets. Back joints with extra studs or girts to maintain true, square intersections.
  3. Use extra studs, walers, and bracing to prevent bowing of forms between studs and to avoid bowed appearance in concrete. Do not use narrow strips of form material, which will produce bow.
- E. Corner Treatment:
1. Unless shown otherwise, form chamfers with  $\frac{3}{4}$ -inch by  $\frac{3}{4}$ -inch strips, accurately formed and surfaced to produce uniformly straight lines and tight edge joints on exposed concrete. Extend terminal edges to require limit and miter chamfer strips at changes in direction.
- F. Control Joints: Locate as indicated on the Drawings.
- G. Provision for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Verify size and location of openings, recesses and sleeves with the trade requiring such items. Accurately place and securely support items to be built into forms.
- H. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove encrusted mortar and grout, chips, wood, sawdust, dirt, and other debris just before concrete is placed. Retighten forms immediately after concrete placement as required to eliminate mortar leaks.

3.03 FORM COATINGS

- A. Coat form contact surfaces with form-releasing agent before reinforcement is placed. Do not allow excess form coating material to accumulate in the forms or to come into contact with surfaces that will be bonded to fresh concrete. Apply in strict compliance with manufacturer's instructions.
- B. Remove surplus coating on form surfaces before placing concrete.

3.04 INSTALLATION OF EMBEDDED ITEMS

- A. Set and build into the forms, anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of the items to be attached thereto.
- B. Set edge forms or bulkheads and intermediate screed strips for slabs, to obtain required elevation and contours in the finished slab surface. Provide and secure units to support types of screeds required.

3.05 REMOVAL OF FORMS

- A. Formwork not supporting concrete, such as sides of walls, columns, and similar parts of the Work, may be removed after cumulatively curing at not less than 50 degrees F for 72 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operation, and provided that curing and protection operations are maintained.

18255.01  
07/24

**SECTION 03100**  
**CONCRETE FORMWORK**

- B. Formwork supporting weight of concrete, such as elevated beams, joists, slabs and other structural elements may not be removed until concrete has attained 70% of its design minimum 28-day compressive strength and has cumulatively cured for no less than 7 days. Concrete shall have sufficient strength to safely support its own weight and construction live loads and lateral pressures. Determine potential compressive strength of in-place concrete testing field-cured specimens representative of the concrete location or members, as specified in Section 03300, Cast-in-Place Concrete.
- C. Form facing material may be removed one day after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.
- D. Form ties: The concrete structure shall be finished by grinding the fiberglass form ties flush with the finish surface of the concrete structure.

3.06 REUSE OF FORMS

- A. Clean and repair surfaces of forms to be reused in the work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. When forms are reused for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets. Apply new form releasing agent to all form areas that will be in contact with concrete.
- B. Do not reuse forms if there is any evidence of surface wear and tear, splits, fraying, delamination or other damage which would impair the quality of the concrete surface or prevent obtaining the specified concrete finish.

END OF SECTION

18255.01  
07/24

**SECTION 03200**  
**CONCRETE REINFORCEMENT**

PART 1.00 - GENERAL

1.01 DESCRIPTION

A. Work Included:

1. Furnish and install all reinforcement and associated items required and/or indicated on the Drawings for all cast-in-place concrete.

1.02 REFERENCES

A. The latest editions of the following American Concrete Institute (ACI) publications shall be used as reference standards:

1. ACI SP-66 ACI Detailing Manual
2. ACI 301 Specifications for Structural Concrete for Buildings
3. ACI 318 Building Code Requirements for Structural Concrete
4. ACI 315 Details and Detailing of Concrete Reinforcement
5. ACI 315R Manual of Engineering and Placing Drawings for Reinforced Concrete Structures

B. The latest editions of the following American Society for Testing and Materials (ASTM) publications shall be used as reference standards:

1. ASTM A775 Specification for Epoxy-Coated Steel Reinforcing Bars
2. ASTM A615 Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
3. A185 Specification for Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement
4. A767/A767M-09 Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement
5. A 706/A 706M Specification for Low-Alloy Steel Deformed Bars for Concrete Reinforcement

C. American Welding Society (AWS):

1. AWS D1.4: American Welding Society, Structural Welding Code, and Reinforcing Steel.

D. Massachusetts State Building Code

1.03 SUBMITTALS:

A. Submit the following:

1. Mill test reports for each shipment of reinforcement. Identify reports with specific lots in shipments and submit prior to use of reinforcement in work.
2. At least 30 days before each scheduled concrete placement, submit shop drawings covering the reinforcing steel details, bar lists, support bars and details, locations of reinforcing bar cut-offs, splices, development lengths and placement details. Prepare shop drawings in accordance with ACI 315 and 315R from reinforcement details shown on the drawings.
3. Chemical composition of reinforcing steel. Ladle analysis to identify percentage of carbon, phosphorous, manganese and sulfur present in steel.
4. Welder's certification in accordance with American Welding Society D1.4 prior to welding, when welding is indicated or specified.

18255.01  
07/24

**SECTION 03200**  
**CONCRETE REINFORCEMENT**

5. Shop and placement drawings to the Engineer for review prior to fabrication, which show:
  - a. All construction and expansion joints.
  - b. Reinforcement detailed in conformance with ACI SP-66.
  - c. Support bars and details of bar supports including type, size and spacing.
  - d. Marking for each reinforcement item.

1.04 PRODUCT HANDLING:

A. Protection:

1. Use all means necessary to protect reinforcing steel before, during, and after installation and to protect the installed work and materials of all other trades.
2. Store in a manner to prevent excessive rusting and fouling with dirt, grease, and other bond-breaking coatings.
3. Use all necessary precautions to maintain identification after the bundles are broken.

B. Replacements:

1. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Engineer and at no additional cost to the Owner.

PART 2.00 - PRODUCTS

2.01 REINFORCING STEEL

- A. All reinforcing steel shall be new, free from rust, and comply with ASTM A-615, grade 60 unless noted otherwise. All reinforcing steel shall be epoxy coated.
- B. After installation and prior to placing concrete or mortar, touch-up epoxy coated reinforcing with approved repair materials.

2.02 OTHER MATERIALS:

- A. All other materials, not specifically described but required for a complete and proper installation of reinforcing steel, shall be as selected by the Contractor subject to the approval of the Engineer.

PART 3.00 - EXECUTION

3.01 SURFACE CONDITIONS:

A. Inspection:

1. Prior to installation of the work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that reinforcing steel may be installed in strict accordance with all pertinent codes and regulations, the approved Shop Drawings, and the original design.

18255.01  
07/24

**SECTION 03200  
CONCRETE REINFORCEMENT**

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Engineer.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 BENDING:

A. General:

1. Fabricate all reinforcement in strict accordance with the approved Shop Drawings.
2. Do not use bars with kinks or bends not shown on the Drawings or on the approved Shop Drawings.
3. Do not bend or straighten steel in a manner that will damage the material.

B. Design:

1. All bends shall be in accordance with ACI 318. Bend all bars cold.

3.03 PLACING:

A. General:

1. Before the start of concrete placement, accurately place all reinforcing steel, positively securing and supporting by concrete blocks, metal chairs or spacers, or by metal hangers. Support bars within the upstream cutoff wall shall be of all polymer construction.

B. Splicing:

1. Horizontal Bars:

- a. Place bars in horizontal members with minimum laps at splices sufficient to develop the strength of the bars in accordance with ACI 318.
- b. Bars may be wired together at laps except at points of support of the member, at which points preserve the clear space described above.
- c. Wherever possible, stagger the splices of adjacent bars.

2. Other Splices:

- a. Make only those other splices that are indicated on the approved Shop Drawings or specifically approved by the Engineer.

3. Dowels:

- a. Place all required steel dowels and securely anchor them into position before the concrete is placed. Dowels placed into existing concrete shall be securely anchored with high strength epoxy as indicated on the Drawings.

4. Obstructions:

- a. In the event conduits, piping, inserts, sleeves, or any other items interfere with placing reinforcement as indicated on the Drawings, or as otherwise required, immediately consult the Engineer and obtain approval of new procedure before placing concrete.

5. Use precast concrete bar support blocks for foundation mats.

3.04 MINIMUM COVER

- A. Unless otherwise shown, provide a minimum cover of 3 inches:

**18255.01**  
**07/24**

**SECTION 03200**  
**CONCRETE REINFORCEMENT**

3.05 CLEANING REINFORCEMENT:

- A. Steel reinforcement, at the time concrete is placed around it, shall be free from rust scale, loose mill scale, oil, paint, and all other coatings which will destroy or reduce the bond between steel and concrete.

3.06 PROTECTION

- A. Do not drive over reinforcing steel without adequate protection. Report damaged rebar to the Engineer for inspection.

END OF SECTION



18255.01  
07/24

**SECTION 03256  
WATERSTOPS**

PART 1.00 – GENERAL

1.01 SCOPE

- A. Provide hydrophilic rubber or PVC waterstops as indicated and specified.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM) Publications:
  - 1. D412: Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension
  - 2. D638: Test Method for Tensile Properties of Plastics
  - 3. D624: Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
  - 4. D1149: Test Method for Rubber Deterioration – Surface Ozone Cracking in a Chamber
  - 5. D1203: Test Methods for Volatile Loss from Plastics Using Activated Carbon Methods
  - 6. D2240: Test Method for Rubber Property – Durometer Hardness

- B. Corps of Engineers: CRD-C 572-74

- C. Bureau of Reclamation: C-902

1.03 SUBMITTALS

- A. Shop Drawings: Submit the following as specified in Section 01340, Submittals.
  - 1. Manufacturer's printed data and literature for all specified materials and locations where materials are to be used.
  - 2. Manufacturer's procedure for splicing sections of waterstops.
- B. Samples of waterstops.
- C. Certification that materials proposed for use are non-toxic and have no effect on the quality or appearance of potable water. Materials shall be NSF approved for contact with potable water.

1.04 QUALITY CONTROL.

- A. Reject and replace waterstops that have become wet or exhibit swelling prior to concrete placement.
- B. Require a manufacturer's service representative to visit the job site before any waterstops are installed to demonstrate the correct installation and splicing procedures.
- C. Correctly position waterstops in joints.
- D. Provide waterstops in maximum practical lengths to minimize joints.
- E. Use adhesives manufactured by or recommended by the waterstop manufacturer for attachment of the waterstop to concrete.
- F. Waterstops shall be positioned to provide a minimum of 3" concrete cover. Provide increased

18255.01  
07/24

**SECTION 03256  
WATERSTOPS**

cover when recommended by the manufacturer.

- G. Waterstops shall be positioned to provide a minimum of 1.5" separation from reinforcing steel. Provide increased separation when recommended by the manufacturer.

1.05 DELIVERY, STORAGE AND HANDLING.

- A. Transport, handle and deliver materials to the job site in the manufacturer's sealed bags, unopened containers or banded pallets.
- B. Store materials off the ground on a platform or skids and protect with covers from snow, rain and ground splatter.
- C. Store waterstops under cover in a dry cool location, out of direct sunlight. Hydrophilic waterstops shall be maintained in a dry condition until concrete placement

PART 2.00 - PRODUCTS

2.01 HYDROPHILIC GASKET WATERSTOPS

- A. Provide hydrophilic rubber gasket waterstops fabricated of non-vulcanized rubber, chloroprene rubber, urethane polymers, vinylester polymers or combinations of these materials.
- B. Waterstops shall be of solid construction and 3/8" X 3/4" minimum in cross section.
- C. Provide waterstops as recommended by manufacturer for specific installation.
- D. Waterstops containing bentonite shall not be used.
- E. Provide hydrophilic gasket waterstops that meet or exceed the criteria in Table 03256-1.

**TABLE 03256-1**

<b>Property</b>	<b>Test Method</b>	<b>Limit</b>
Ultimate Elongation	ASTM D 412	70% minimum
Tensile Strength	ASTM D 412	25 psi [170 kPa] minimum
Ozone Resistance	ASTM D 1149	No Failure
Volatile Loss	ASTM D 1203	0.50% maximum
Hardness, Shore A	ASTM D 2240	20 to 60
Tear Resistance	ASTM D 624	50 lb/inch
Expansion Ratio	Volumetric Change-Distilled water @70°F	3 to 1 min.

- F. Provide hydrophilic rubber gasket waterstops as manufactured by:
  - 1. No. CJ-1020-2K as manufactured by Greenstreak Plastic Products Company, St. Louis, MO;
  - 2. Adeka Ultraseal MC-2010M manufactured by Adeka North America, Spearfish, SD;
  - 3. Swellseal 8 manufactured by De Neef Construction Chemicals, Inc., Waller, TX;
  - 4. or equal.

2.02 HYDROPHILIC PASTE WATERSTOPS

- A. Provide hydrophilic rubber paste waterstops of urethane paste, thixotropic vinyl monomer or similar materials.
- B. Hydrophilic rubber paste shall be compatible with waterstop material.
- C. Hydrophilic paste shall be 100% solids.
- D. Provide hydrophilic paste waterstops that meet or exceed the criteria in Table 03256-2.

TABLE 03256-2

Property	Test Method	Limit
Ultimate Elongation	ASTM D 412	50% minimum
Tensile Strength	ASTM D 412	25 psi [170 kPa] minimum
Ozone Resistance	ASTM D 1149	No Failure
Volatile Loss	ASTM D 1203	0.50% maximum
Hardness, Shore A	ASTM D 2240	20 to 60

- E. Provide hydrophilic rubber paste as manufactured by:
  - 1. Duroseal Paste manufactured by BBZ USA, Southington, CT;
  - 2. Adeka Ultraseal P-201 manufactured by Adeka North America, Spearfish, SD;
  - 3. Swellseal Cartridge manufactured by De Neef Construction Chemicals, Inc., Waller, TX;
  - 4. Or acceptable equivalent product.

2.03 PVC WATERSTOPS

- A. Provide flexible, ribbed, center-bulb, PVC waterstop with the geometry and size indicated on the Drawings.
- B. The PVC waterstop shall be extruded from an elastomeric plastic material of which the basin resin is prime virgin polyvinyl chloride.
- C. The PVC compound shall not contain any scrapped or reclaimed material or pigment.
- D. Provide PVC waterstop that meet or exceed the criteria in Table 03256-3.

TABLE 03256-3

Property	Test Method	Limit
Water absorption	ASTM D 570	0.15% max
Tear Resistance	ASTM D 624	200 lb/in (35kN/m) minimum
Ultimate Elongation	ASTM D 638	350% minimum
Tensile Strength	ASTM D 638	2000 psi [13.78 MPa] minimum
Low Temperature Brittleness	ASTM D 746	No Failure @ -35°F (-37°C)

18255.01  
07/24

**SECTION 03256  
WATERSTOPS**

Stiffness in Flexure	ASTM D 747	600 psi (4.13 Mpa) min.
Specific Gravity	ASTM D 792	1.45 max
Hardness, Shore A	ASTM D 2240	79±3

- E. Provide factory made waterstop fabrications for all changes of direction, intersection, and transitions leaving only straight butt joint splices for the field.
- F. Provide hog rings or grommets spaced at 12 inches on center along the length of the waterstop.
- G. Provide Teflon coated thermostatically controlled waterstop splicing irons for field butt splices.

**PART 3.00 - EXECUTION**

**3.01 INSTALLATION GENERAL**

- A. Provide hydrophilic rubber gasket and paste waterstops where specifically indicated.
- B. Center waterstops in joints unless otherwise indicated.
- C. Consolidate concrete during placement in vicinity of waterstop without damaging or dislodging waterstop.
- D. Clean joint surface of dirt, dust, debris and laitance immediately before applying waterstop and remove standing water.
- E. Protect waterstops from moisture until concrete is placed. Waterstops that exhibit swelling prior to concrete placement shall be removed and replaced at the Contractor's expense.

**3.02 HYDROPHILIC GASKET WATERSTOPS**

- A. Install hydrophilic gasket waterstops in continuous lengths to minimize joints. Provide waterstop in one continuous length as practicable. Butt ends at joints of waterstop or overlap a minimum of 2" or per manufacturer's instructions.
- B. Seal joints in hydrophilic gasket waterstops with a hydrophilic rubber paste compound as recommended by the manufacturer.
- C. Do not bend hydrophilic gasket waterstop. Cut square and butt joints at corners.
- D. Waterstop shall be in continuous contact with the concrete surface.
- E. Attach hydrophilic gasket waterstop to concrete surface with continuous bead of hydrophilic rubber paste or adhesive. Paste or adhesive shall be provided by or as recommended by the waterstop manufacturer.
- F. Fix hydrophilic gasket waterstop to concrete surface with masonry or concrete nails or powder activated fasteners at a maximum 12-inch spacing.
- G. Provide one fastener one inch from the top and a second fastener four inches from the top of vertical hydrophilic gasket waterstops regardless of which fastening method is used.

18255.01  
07/24

**SECTION 03256  
WATERSTOPS**

- H. Do not compress or otherwise deform hydrophilic gasket waterstop when fastening to concrete.
- I. Do not wrap hydrophilic gasket waterstops around pipes less than the minimum diameter recommended in the manufacture's printed instructions.

3.03 HYDROPHILIC PASTE WATERSTOPS

- A. Clean dirt and debris from area to receive hydrophilic paste waterstop.
- B. Bead of hydrophilic paste waterstop shall be a minimum of 1/4 thick by 1/2 inches wide.
- C. Apply hydrophilic paste waterstop such that there is no break in the bead.
- D. Install hydrophilic paste waterstops in accordance with the manufacture's printed instructions.

3.04 PVC WATERSTOPS

- A. Field butt splices shall be heat fused welded using a Teflon covered thermostatically controlled waterstop splicing iron at approximately 380°F or as recommended by the manufacturer. Pre-manufactured 3- and 4-way connectors shall be utilized at connection/junction locations.
- B. Lapping over overlaying of waterstops, use of adhesives or solvents shall not be allowed.
- C. Center waterstop in joint and secure waterstop to correct position using hog rings or grommets spaced at 12 inches on center along the length of the water stop; wire tie to adjacent reinforcing steel. Nailing, stapling, or any other means of fastening PVC waterstops in place that creates a puncture in the waterstop is strictly prohibited.
- D. Notch waterstops to fit around reinforcing steel so that the waterstop will remain vertical and unbent when reinforcing steel interferes with waterstop placement.

END OF SECTION

18255.01  
07/24

**SECTION 03300**  
**CAST-IN-PLACE CONCRETE**

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. The work covered under this Section includes, but is not limited to, the following: the furnishing of all plant, labor, equipment, appliances and materials including all joint fillers and sealants. Performing all operations in connection with providing the construction of all Portland cement concrete in accordance with these specifications and in conformance with the lines and grades shown. Also, prepare a program of inspections of all concrete work and perform such tests and inspections as required.

1.02 REFERENCES

- A. General: Where the language in any of the documents referred to herein is in the form of a recommendation or suggestion, such recommendations or suggestions shall be deemed to be mandatory for these Specifications.

B. American Concrete Institute (ACI):

1. ACI 117: Standard Tolerances for Concrete Construction and Materials
2. ACI 301: Specifications for Structural Concrete
3. ACI 302: Guide for Concrete Floor and Slab Construction
4. ACI 304R: Guide for Measuring, Mixing, Transporting and Placing Concrete
5. ACI 305R: Hot Weather Concreting
6. ACI 306R: Cold Weather Concreting
7. ACI 308: Standard Practice for Curing Concrete
8. ACI 309R: Guide for Consolidation of Concrete
9. ACI 318: Building Code Requirements for Structural Concrete

C. American Society for Testing and Materials (ASTM):

1. B117: Standard Practice for Operating Salt Spray Apparatus
2. C31: Making and Curing Concrete Compression and Flexural Strength Test-Specimens in the Field
3. C33: Specification for Concrete Aggregates
4. C39: Test Method for Compressive Strength of Cylindrical Concrete Specimens
5. C94: Specifications for Ready Mixed Concrete
6. C136: Sieve Analysis of Fine and Coarse Aggregate
7. C138: Unit Weight, Yield, and Air Content of Concrete
8. C143: Test for Slump of Portland Cement Concrete
9. C150: Specification for Portland Cement
10. C171: Sheet Materials for Curing Concrete
11. C172: Sampling Fresh Concrete
12. C173: Air Content of Freshly Mixed Concrete by the Volumetric Method
13. C231: Test for Air Content of Freshly Mixed Concrete by the Pressure Method
14. C260: Specification of Air-Entraining Admixtures for Concrete
15. C309: Specification for Liquid Membrane Forming Compounds for Curing Concrete
16. C494: Specification for Chemical Admixtures for Concrete
17. C501: Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser
18. C827: Test Method for Change in Height at Early Ages of Cylindrical Specimens for Cementitious Mixtures

18255.01  
07/24

**SECTION 03300**  
**CAST-IN-PLACE CONCRETE**

- 19. C989: Specification for Ground Iron Blast-Furnace Slag for Use in Concrete and Mortars
  - 20. C1026: Standard Test Method for Measuring the Resistance of Ceramic Tile to Freeze-Thaw Cycling
  - 21. C1028: Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method
  - 22. C1064: Test Method for Temperature of Freshly Mixed Portland-Cement Concrete
  - 23. C1107: Specification for Packaged Dry, Hydraulic Cement Grout (Non-Shrink)
  - 24. C1240: Standard Specification for Silica Fume for Use in Hydraulic-Cement Concrete
  - 25. D543: Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents
  - 26. D570: Standard Test Method for Water Absorption of Plastics
  - 27. D638: Standard Test Method for Tensile Properties of Plastics
  - 28. D695: Standard Test Method for Compressive Properties of Rigid Plastics
  - 29. D790: Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
  - 30. D1751: Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
  - 31. E84: Standard Test Method for Surface Burning Characteristics of Building Materials
  - 32. E154: Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover
  - 33. G151: Standard Practice for Exposing Nonmetallic Materials in Accelerated Test Devices that Use Laboratory Light Sources
  - 34. G155: Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials
- D. Federal Specifications (Fed. Spec.):
- 1. TT-S-00230: Seal Compound: Elastomeric Type, Single Component (for Caulking, Sealing, and Glazing in Buildings and Other Structures)
- E. American Association of State Highway and Transportation Officials (AASHTO)
- 1. M182: Standard Specification for Burlap Cloth Made from Jute or Kenaf and Cotton Mats
  - 2. T119: Standard Test Method for Slump of Hydraulic-Cement Concrete

1.03 QUALITY CONTROL

- A. As the work progresses, the Contractor will be required to perform tests and/or engage a testing laboratory in order to confirm that the quality of the concrete will be in conformance with these Specifications. Concrete shall be sampled in accordance with Section 01400, QUALITY CONTROL/QUALITY ASSURANCE.
- B. Slump tests shall be made according to ASTM C143. One slump test shall be performed each day concrete is placed and at a frequency of not less than one test per 25 cubic yards of concrete placed or for each day's pour at a structure. No slump in excess of 4 inches will be permitted without written consent of the Engineer.
- C. Air content shall be tested according to either ASTM C231 or ASTM C173. One air content of concrete test shall be performed on each load of concrete delivered to the site.
- D. Compression test specimens will be made by the Contractor and cured according to ASTM C31. Five specimens shall be collected for each 20 cubic yards of concrete placed or for each day's pour at a structure

18255.01  
07/24

**SECTION 03300**  
**CAST-IN-PLACE CONCRETE**

and two samples tested at 7 days and two samples tested at 28 days and one specimen retained in reserve for later testing if required.

- E. Specimens shall be tested according to ASTM C39.
- F. If the concrete is found to be substandard as a result of the initial testing, then any additional work for replacement or removal of the substandard concrete or retesting shall be at the Contractor's expense.
- G. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
- H. Strength levels of concrete will be considered satisfactory if averages of sets of three consecutive strength cylinders meet or exceed required strength, and no individual strength test results fall below specified compressive strength by more than 500 psi.

1.04 SUBMITTALS

- A. Submit the following:
  - 1. Batch plant details giving the location, layout, capacity, and type of batch plant and the method of transporting concrete from the batch plant to the work location. Contractor shall provide documentation that all requirements of local authorities and regulations have been met.
  - 2. Notification to the Engineer of concrete deliveries, a minimum of 24 hours in advance of the scheduled delivery. Include within this notification, class and quantity of concrete, frequency of trucks, and ordered slump.
  - 3. Description of methods for cold-weather and hot weather batching, mixing and delivery.
  - 4. Concrete Mix Designs:
    - a. Submit concrete mix designs to the Engineer within a minimum of 30 calendar days prior to placement. Include a complete list of materials including admixtures, applicable reference specifications, and copies of test reports showing the mix has been successfully tested to produce the properties specified.
    - b. For each design mix:
      - i. Certifications by the concrete supplier that ingredients conform to the specified requirements.
      - ii. Certifications by the concrete supplier that design mix conforms to specified strength, unit weight, maximum size aggregate, air entrainment, slump and to be free of soluble chloride content.
      - iii. Coarse aggregate gradation, specific gravity, and dry rodded unit weight.
      - iv. Identify admixtures, and planned dosage rate.
  - 5. Compression test results.
    - a. Test results will be reported in writing to the Engineer within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name and location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7 day tests and 28 day tests.
    - b. Based upon time limitations of the project an early break of concrete may be sufficient in place of the 7-day break provided the 7-day break strength is met.



18255.01  
07/24

**SECTION 03300**  
**CAST-IN-PLACE CONCRETE**

1.05 DELIVERY, STORAGE AND HANDLING

- A. Order concrete from batching plant so that trucks arrive at discharge locations when concrete is required. Avoid excessive mixing of concrete or delays in placing successive layers of concrete in forms.
- B. Deliver concrete to discharge locations in watertight agitator or mixer trucks without altering the water-cement ratio, slump, air entrainment, temperature and homogeneity.
- C. Concrete not conforming to specification, unsuitable for placement, exceeding the time or temperature limitations as indicated in section 2.04 of this specification, or not having a complete delivery batch ticket will be rejected.

1.06 JOBSITE CONDITIONS

- A. Weather: Protect concrete from damage and reduced strength or performance due to weather extremes during mixing, placing and curing.
- B. Cold Weather: Unless special precautions are taken to protect concrete, do not work when temperatures are below 40°F or when temperatures are expected to fall below 40°F within 72 hours after placing concrete.
  - 1. Comply with ACI 306 in cold weather.
  - 2. Maintain concrete temperature of at least 60°F. Reinforcement forms and ground in contact with concrete shall be free of frost.
  - 3. Keep concrete and formwork at least 50°F for at least 96 hours after placing concrete.
  - 4. The use of calcium chloride in any form is not permitted. Non-chloride accelerator shall be used when ambient temperature is below 50°F.
  - 5. Admixture manufacturer shall provide technical assistance at no additional cost. A manufacturer's representative shall be available for consultation by phone of on-site upon 72-hour notice.
- C. Hot Weather: Concrete, when deposited, shall be less than 85°F. Cool the mix in a manner acceptable to the Engineer if the concrete temperature is higher.
  - 1. Comply with ACI 305 in hot weather.
  - 2. Retarder shall be used when ambient temperature exceeds 80°F.

PART 2.00 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type II or Type I/II for all work unless otherwise specified. Use one brand of cement throughout project.
- B. Normal Weight Aggregates: ASTM C 33, and as herein specified. Use ¾" maximum size for all concrete, unless otherwise directed or specified. Provide aggregates from a single source for exposed concrete.
- C. Water: Clean, potable and free from foreign materials in amounts harmful to concrete and embedded steel. Provide water which meets ACI/ASTM requirements for concrete mix water.

SECTION 03300  
CAST-IN-PLACE CONCRETE

- D. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
1. Products: Subject to compliance with requirements, products, which may be incorporated in the work, include the following
    - a. "Air-Mix"; Euclid Chemical Co.
    - b. "Sika Aer"; Sika Corp.
    - c. "MB-VR or MB-AE"; Master Builders
    - d. "Darex AEA" or "Daravair"; W.R. Grace
    - e. Or equal.
- E. Water Reducing Admixture: ASTM C 494, Type A, and containing not more than 0.1% chloride ions. Follow manufacturer's recommendations for amount of admixture to be added to the concrete. Admixture shall be compatible with air-entraining admixtures.
1. "WRDA Hycol"; W. R. Grace.
  2. "Eucon WR-75"; Euclid Chemical Co.
  3. "Master Pozzolith" Master Builders.
  4. "Plastocrete 160"; Sika Chemical Corp.
  5. Or equal.
- F. High-Range Water Reducing Admixture (SuperPlasticizer): ASTM C 494, Type F or Type G and containing not more than 0.1% chloride ions. Follow manufacturer's recommendations.
1. Products: Subject to compliance with requirements, products which may be incorporated in the work include the following:
    - a. "WRDA 10" or "Daracem"; W. R. Grace.
    - b. "PSP"; Protex Industries Inc.
    - c. "Super P"; Anit-Hydro.
    - d. "Sikament"; Sika Chemical Corp.
    - e. "Master Rheobuild"; Master Builders.
    - f. Or approved equivalent.
- G. Water Reducing, Non-Chloride Accelerator Admixture: ASTM C 494, Type E or C, and containing not more than 0.1% chloride ions.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. "Accelguard 80"; Euclid Chemical Co.
    - b. "MasterSet FP 20"; Master Builders, Inc.
    - c. "PolarSet"; Grace Construction Products.
    - d. Or approved equivalent.
- H. Water Reducing, Retarding Admixture: ASTM C 494 Type D, and containing not more than 0.1% chloride ions.
1. Products: Subject to compliance with requirements, products that may be incorporated in the work include the following:
    - a. "Edoco 20006"; Edoco Technical Products.
    - b. "MasterSet R"; Master Builders.
    - c. "Eucon Retarder 75"; Euclid Chemical Co.
    - d. "Daratard"; W. R. Grace.

18255.01  
07/24

**SECTION 03300**  
**CAST-IN-PLACE CONCRETE**

- e. "Plastiment"; Sika Chemical Co.
- f. Or approved equivalent.

I. Prohibited Admixtures: Calcium chloride thycyanates or admixtures containing more than 0.1% chloride ions are not permitted.

2.02 RELATED MATERIALS

A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. Per sq. yd., complying with AASHTO M 182, Class 2.

B. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.

- 1. Waterproof paper.
- 2. Polyethylene film.
- 3. Polyethylene-coated burlap.

C. Liquid Membrane-Forming Curing Compound: Liquid type membrane-forming curing compound complying with ASTM C 309, Type I, Class A. Moisture loss not more than 0.055 gr./sq. cm. when applied at 200 sq. ft./gal.

- 1. Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:
  - a. "Masterseal"; Master Builders.
  - b. "A-H 3 Way Sealer"; Anti-Hydro Waterproofing Co.
  - c. "Kurez DR VOX"; Euclid Chemical Co.
  - d. "Clear Seal"; A.C. Horn, Inc.
  - e. "Sealco 309"; Gifford-Hill/American Admixtures.
  - f. "J-20 Acrylic Cure"; Dayton Superior.

D. Underlayment Compound: Free flowing, self-leveling, pumpable cementitious base compound.

- 1. Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:
  - a. "Ardex K-15"; Ardex Engineered Cements.
  - b. "Silflo 200"; Silpro Masonry Systems.
  - c. "UltraPlan"; Mapei.

E. Bonding Compound: Polyvinyl acetate or acrylic base.

- 1. Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:
  - a. Acrylic or Styrene Butadiene:
    - ii. "J-40 Bonding Agent"; Dayton Superior Corp.
    - iii. "Everbond"; L & M Construction Chemicals.
    - iv. "Hornweld"; A. C. Horn, Inc.
    - v. "Daraweld C"; W. R. Grace.

18255.01  
07/24

**SECTION 03300  
CAST-IN-PLACE CONCRETE**

2.03 PROPORTIONING AND DESIGN OF MIXES

- A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. If trial batch method used, use an independent testing facility acceptable to the Engineer for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing.
- B. Submit written reports for review of design mix for specified strength of concrete within 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed.
- C. Strength: Provide concrete having the following minimum compressive strength at 28 days:
  - 1. Class 5000 psi -3/4: Use in all concrete, unless otherwise specified.
- D. The concrete quality, mixing and placing shall conform to ACI-318, Chapter 5.
- E. Design mixes to provide normal weight concrete with the following properties, as indicated:

Design Compressive Strength,	Minimum Strength fc 7 days***	Laboratory Testing Age 28 day	Minimum ** Cement Lbs./cu.yd.	Maximum* W/C Ratio
5,000 psi	3,500 psi	5,000 psi	705	0.40

\*Maximum: Decrease if possible

\*\*Minimum: Increase as necessary to meet all other stated requirements.

\*\*\* An early break, less than 7 days but more than 3 days, may be used given the time constraints of the project.

- F. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by the Engineer. Laboratory test data for revised mix design and strength results must be submitted to and accepted by the Engineer before using in work.
- G. Admixtures
  - 1. Use water-reducing admixture or high range water reducing admixture (super plasticizer) in all concrete in strict accordance with the manufacturer's printed instructions.
  - 2. Use air-entraining admixture in all concrete, unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content of 6% with a tolerance of  $\pm 1\%$ .
- H. Consistency:
  - 1. The consistency shall be uniformly maintained within the allowable range of slump for the job materials. Ordinarily the mix design slump shall be on the order of 4" +/- 1". During placement the slump shall not deviate from the mix design slump more than the allowable range indicated on the mix design. The consistency shall be determined by the AASHTO Method T-119. This range of slump is to be maintained for all concrete including pumped concrete.
  - 2. Should a lower or higher slump than the mix design be required, a revised mix design shall be submitted for review to verify that the higher or lower slump does not affect the other concrete properties including the w/c ratio, air content, strength, etc.

18255.01  
07/24

**SECTION 03300**  
**CAST-IN-PLACE CONCRETE**

2.04 CONCRETE MIXING

- A. Ready-Mix Concrete: Comply with requirements of ASTM C 94, and as herein specified. Delete references for allowing additional water to be added to batch for material with insufficient slump. Addition of water to the batch will not be permitted.
  - 1. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C94 may be required. When air temperature is between 85°F (30° C) and 90°F (32° C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90°F (32°C), reduce mixing and delivery time to 60 minutes.
  - 2. During cold weather heat water, sand and cement materials per recommendations of ACI 306.

PART 3.00 – EXECUTION

3.01 FORMWORK

- A. All formwork shall be completed as provided for within section 03100.
- B. Forms shall conform to shapes, lines and dimensions of the members as called for on the Drawings and shall be sufficiently tight to prevent leakage of mortar. They shall be properly braced or tied together so as to maintain position and shape.
- C. Forms shall be removed in such a manner as to ensure the complete safety of the structure. In no case shall supporting forms or shoring be removed until members have acquired sufficient strength to support their weight and imposed loads safely.

3.02 INSTALLATION

- A. Batch, mix and deliver Portland cement concrete in conformance with ASTM C 94. Batch all constituents at central batching or mixing plant. Produce concrete in conformance with ACI 301 and as specified.
- B. Seasonal Conditions:
  - 1. Conform to ACI 305R and as specified for hot weather concreting. Do not add retarder admixture to any concrete.
  - 2. Conform to ACI 306R and as specified for cold weather concreting. Do not add accelerator admixture to any concrete.

3.03 INSTALLATION OF EMBEDDED ITEMS

- A. Set and build into work, anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached thereto.
- B. Clean embedded items of oil, ice, dirt and all other foreign items.
- C. For embedded pipes, complete all necessary testing requirements prior to placing concrete.

SECTION 03300  
CAST-IN-PLACE CONCRETE

3.04 PLACING CONCRETE

A. General:

1. Concrete shall not be placed when the Engineer is not present.
2. Do not place concrete until the depth, character and adequacy of forms, falsework, embedments, and the placing of the steel reinforcement have been approved by the Engineer. The method and manner of placing the concrete shall be such as to avoid segregation of aggregate and displacement of the reinforcement. Non-aluminum troughs, pipes and round bottom chutes may be used as aids in placing concrete when necessary. Dropping the concrete a distance of more than five feet, or depositing a large quantity at one point, will not be permitted. Concrete shall be placed upon clean, damp surfaces, free from running water, or upon properly consolidated soil.
3. Before placement, all equipment for mixing and transporting the concrete shall be cleaned, and all debris and ice shall be removed from the places to be occupied by the concrete. Forms shall be thoroughly wetted (except in freezing weather) or oiled. The reinforcement shall be thoroughly cleaned of ice, dirt, rust scale or other deleterious coatings.
4. Retempering of concrete by adding water or any other material shall not be permitted.
5. Concrete placement, finishing and curing, and all other pertinent construction practices shall be in accordance with ACI 117 and ACI 301. In addition to the requirements of ACI 117 and ACI 301, the following shall apply:
  - a. When placing is started, it shall be carried on as a continuous operation until placement is completed.
  - b. Concrete shall be placed so that a uniform appearance of surfaces will be obtained.
  - c. Concrete shall be placed and consolidated free of rock pockets, honeycombs, and voids.
  - d. Concrete shall be deposited as nearly as practicable in its final position, to avoid segregation due to rehandling or flowing, and shall not be subjected to any procedure that will cause segregation.
  - e. Concrete shall be placed and consolidated in walls in approximately 18-inch layers, proceeding at a uniform rate or per the form designer's recommendation.
  - f. Do not add water to concrete during delivery, at the Project site, or during placement, unless approved by the Engineer of Record in writing. Amount of water to be added (if permitted by Engineer of Record) at the project site shall be indicated on the mix design and batch tickets submitted by the contractor. Water shall be added prior to on-site testing of the concrete mix.
  - g. Before placing concrete, and if agreed upon by the Engineer of Record, water may be added at the Project site, subject to the limitations of ACI 301.
    - i. Do not add water to concrete after adding high-range water-reducing admixtures.

B. Consolidating:

1. Consolidate concrete with suitable mechanical vibrators operating within concrete. When necessary, vibrating shall be supplemented by hand spading with suitable tools to assure proper and adequate consolidation. Vibrators shall be manipulated so as to work the concrete thoroughly around the reinforcement and embedded fixtures and into corners and angles of the forms. The vibration at any joint shall be of sufficient duration to accomplish consolidation but shall not be prolonged to the point where segregation occurs.
2. Employ as many vibrators and tampers as necessary to secure the desired results. For every two vibrators required for the job, an additional standby vibrator shall be kept on the site. Do not place subsequent layers of concrete until the previous layer has been consolidated as specified. Internal

18255.01  
07/24

**SECTION 03300**  
**CAST-IN-PLACE CONCRETE**

vibrators shall have a minimum frequency of 8000 vibrations per minute when immersed in concrete and shall have sufficient amplitude to effectively consolidate the concrete.

3. Prevent the following practices:
  - a. Pushing of concrete with vibrator.
  - b. External vibration of forms.
  - c. Allowing vibrator to vibrate against reinforcing steel where steel projects into green concrete.
  - d. Allowing vibrator to vibrate against the contact faces of forms.
  
- C. Cold Weather: Do not place concrete when the ambient temperature is below 40°F, unless specifically authorized by the Engineer. Conform to the requirements of ACI 306R during cold weather.
  
- D. Hot Weather: Do not place concrete with a mix temperature exceeding 90°F, unless specifically authorized by the Engineer. Conform to the requirements of ACI 305R during hot weather.
  
- E. Construction Joints:
  1. When the placing of concrete is suspended, necessary provisions shall be made for joining future work before the placed concrete takes its initial set. For the proper bonding of old and new concrete, such provisions shall be made for grooves, steps, keys, dovetails, waterstops, reinforcing bars or other devices as may be prescribed. Before depositing new concrete against existing concrete or concrete which has hardened, the surface of the hardened concrete shall be cleaned by a heavy steel broom, roughened slightly (approximately ¼-inch amplitude), wetted, and covered with a neat coating of cement paste or grout. Install joint sealant where shown on the Drawings, in accordance with manufacturer's instructions.
  2. Joints shall be perpendicular to the main reinforcement.
  
- F. Defective Work:
  1. All defective work disclosed after the forms have been removed shall be immediately removed and replaced. If dimensions are deficient, or if the surface of the concrete is bulged, uneven, or shows honeycomb, which in the opinion of the Engineer cannot be repaired satisfactorily, the entire section shall be removed and replaced at no cost to the Owner.
  2. Other work considered to be defective includes, but is not limited to, the following:
    - a. Concrete in which defective or inadequate steel reinforcement has been placed.
    - b. Concrete incorrectly formed, or not conforming to details and dimensions on the Drawings or with the intent of these documents, or the concrete surfaces of which are out of plumb or level beyond specified tolerances.
    - c. Concrete below specified strength.
    - d. Concrete containing wood, cloth, or other foreign matter, rock pockets, voids, honeycombs, cracks or cold joints not scheduled or indicated on the Drawings.

3.05 CONCRETE FINISHING

- A. Exposed concrete surfaces shall be true, smooth, free from open or rough spaces, depressions, or projections. The concrete in horizontal plane surfaces shall be brought flush with the finished top surface at the proper elevation and shall be struck off with a straight-edge and floated. Mortar finishing will not be permitted, nor shall dry cement or sand-cement mortar be spread over the concrete during the finishing of horizontal plane surfaces.
  
- B. The following requirements shall govern concrete finishes so indicated on the Drawings.

SECTION 03300  
CAST-IN-PLACE CONCRETE

1. Float Finish: Force coarse aggregate away from surface; float to a smooth and even surface.
2. Trowel Finish:
  - a. After floating, begin the first trowel finish operation using a power-driven trowel; begin final troweling when the surface produces a ringing sound as the trowel is moved over the surface.
  - b. Consolidate the concrete surface by the final hand troweling operation, free from trowel marks, uniform in texture and appearance, and with a surface plane tolerance not exceeding 1/8" in 10'-0" when tested with a 10'-0" straight-edge
3. Broom Finish:
  - a. Apply nonslip broom finish to exterior concrete as specified, immediately after trowel finishing; roughen the concrete surface by brooming in the direction perpendicular to the main traffic route.
    - i. Use a fiber bristle broom.
    - ii. Frequently clean broom to avoid deep brooming.
4. As-Cast Finish:
  - a. Rough form finish; tie holes and defects shall be patched.
    - i. Fins exceeding 1/4 Inch in height shall be chipped off or rubbed off.
    - ii. Otherwise, surfaces shall be left with the texture imparted by the forms.
  - b. Smooth form finish: the form facing material shall produce a smooth, hard, uniform texture on concrete.
    - i. The arrangement of the facing material shall be orderly and symmetrical, and the number of seams kept to the practical minimum.
    - ii. Forms shall be supported by studs or other backing capable of preventing excessive deflection.
    - iii. Form-facing material with raised grain, torn surfaces, worn edges, patches, dents, or other defects which will impair the texture of the concrete surface shall not be used.

3.06 CURING AND PROTECTION

- A. Initial Curing: All concrete shall be properly cured and protected in accordance with ACI 308. Maintain concrete above 50° F during first seven days after placing. The work shall be protected from the elements, flowing water, and from defacement of any nature, during construction. The concrete shall be cured as soon as it has sufficiently hardened, by covering with an approved material. Water-absorptive coverings shall be thoroughly saturated when placed, and kept saturated for a period of at least seven days. Curing mats or blankets shall be sufficiently weighted or tied down to keep the concrete surface covered and to prevent the surface from being exposed to air currents. Where wooden forms are used, they shall be kept wet at all time until removed, to prevent the opening of joints and drying out of the concrete. Membrane curing compounds shall be coordinated with the surface to be painted, covered with plaster, covered with sealer, and other surfaces which curing compound would adversely affect subsequent construction.
- B. Duration of Curing: The final curing shall continue until the cumulative number of days or fractions thereof, not necessarily consecutive, during which the temperature of the air in contact with the concrete is above 50°F, has totaled 7 days beyond the initial curing period.
  1. Rapid drying at the end of the curing period shall be prevented.
  2. Curing period may be reduced pending break test results performed at less than 7 days but more than 3 days strength.



18255.01  
07/24

**SECTION 03300**  
**CAST-IN-PLACE CONCRETE**

- C. Formed Surfaces: Steel forms heated by the sun and all wood forms in contact with the concrete during the curing period shall be kept wet.
  - 1. If forms are to be removed during the curing period, one of the specified curing materials or methods shall be employed immediately.
  - 2. Such curing shall be continued for the remainder of the curing period.

3.07 CONCRETE SURFACE REPAIRS

- A. General: Any defective work disclosed after removal of forms shall be immediately removed and replaced. If in the opinion of the Engineer, the surface of the concrete cannot be repaired satisfactorily, the entire section shall be removed and replaced at not additional expense to the Owner.
- B. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to the Engineer.
  - 1. Cut out honeycomb, rock pockets, voids over 1 inch in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case, to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brushcoat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.
- C. For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match color surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
- D. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to the satisfaction of the Engineer. Surface defects, as such, include color and texture irregularities, bulges, uneven surfaces, air bubbles, honeycomb, rock pockets; fins and other projections on surface; and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding agent.
- E. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.
- F. Repair of Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness using a template having required slope.
- G. Repair defective areas, except random cracks and single holes not exceeding 1 inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least  $\frac{3}{4}$  inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
- H. Repair isolated random cracks and single holes not over 1 inch in diameter by dry-pack method. Groove top of cracks and cut-out holes to sound concrete and clean of dust, dirt, and loose particles.

**18255.01**  
**07/24**

**SECTION 03300**  
**CAST-IN-PLACE CONCRETE**

Dampen cleaned concrete surfaces and apply bonding compound. Mix dry-pack, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Place dry pack after bonding compound has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.

- I. Perform structural repairs with prior approval of the Engineer for method and procedure, using specified epoxy adhesive and mortar.
- J. Repair methods not specified above may be used, subject to acceptance of the Engineer.

END OF SECTION

**18255.01**  
**07/24**

**SECTION 03600**  
**GROUT**

PART 1.00 - GENERAL

1.01 DESCRIPTION

- A. The work covered under this Section includes but is not limited to, furnishing and installing two component epoxy systems for grouting of components to be installed in hardened concrete and cementitious grout.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM C 109 / C 109M – Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens).
  - 2. ASTM C 939 – Standard Test Method for Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method).
  - 3. ASTM C 942 – Standard Test Method for Compressive Strength of Grouts for Preplaced-Aggregate Concrete in the Laboratory.
  - 4. ASTM C 1107 / C 1107M – Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
  - 5. ASTM C 1602 / C 1602M – Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete.
  - 6. C881: Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete

1.03 SUBMITTALS

- A. Submit Certificate of Compliance of products with these specifications.
  - 1. Manufacturer's printed data and literature for all specified materials and locations where materials are to be used.
  - 2. Manufacturer's installation/application instructions.

1.04 QUALITY

- A. Ensure surfaces to be grouted are cleaned according to the manufacturer's recommendations, sound, and are not feathered at edges.
- B. Observe safety precautions as outlined in the manufacturer's literature and as printed on containers and labels.

PART 2.00 - PRODUCTS

2.01 NONSHRINKING GROUT

- A. Non-shrinking grout shall be furnished factory premixed so that only water is added at the jobsite. Grout shall be mixed in a mechanical mixer. No more water shall be used than is necessary to produce a flowable grout.
- B. Provide non-shrink, non-metallic cement-based grout requiring only addition of water with a minimum 28-day compressive strength of 6000 psi.

**18255.01**  
**07/24**

**SECTION 03600**  
**GROUT**

- C. Provide shrinkage and compensation characteristics in both the plastic and hardened states, conforming to ASTM C-1107, Grade C.
- D. Grout shall exhibit small but predictable amount of expansion sufficient to counteract the normal shrinkage of cement.
- E. The expansion shall occur after initial set to insure maximum contact between grout and base plates, beams, masonry, or other surfaces.

**2.02 EPOXY GROUT FOR REINFORCING BARS**

- A. Epoxy bonding/grouting adhesive shall be a multi-purpose 2 component, 100% solids, moisture tolerant structural epoxy adhesive conforming to the current ASTM C881 specifications.
- B. Manufactured by:
  - 1. "MasterEmaco ADH 1420" as manufactured by Master Builders, Inc.
  - 2. "Sikadur 32, Hi Mod" by Sika Corporation
  - 3. "Resi-Bond (J-58)" by Danton Superior
  - 4. Approved Substitute.

**2.03 EPOXY GROUT FOR ANCHORS**

- A. Miscellaneous Concrete Anchors
  - 1. Epoxy bonding/grouting adhesive shall be a multi-purpose 2 component, 100% solids, moisture tolerant structural epoxy adhesive conforming to the current ASTM C881 specifications.
  - 2. Manufactured by:
    - a. "MasterEmaco ADH 1420" as manufactured by Master Builders, Inc.
    - b. "Sikadur 32, Hi Mod" by Sika Corporation
    - c. "Resi-Bond (J-58)" by Danton Superior
    - d. Approved Substitute.

**PART 3.00 – EXECUTION**

**3.01 NONSHRINKING GROUT**

- A. Preparation
  - 1. The surface to receive nonshrinking grout shall be saturated with water for at least 12 hours preceding grouting unless additional time is required by the grout manufacturer. Remove all standing water or puddles prior to application of grout.
  - 2. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles and disintegrated materials by mechanical abrasion methods such as sandblasting. Sandblast structural and reinforcing steel to remove loose material and expose sound metal.
  - 3. Construct appropriate sturdy forms to contain grout at the fluidity level at which it will be used.
- B. Placement

**SECTION 03600**  
**GROUT**

1. Unless otherwise specified or indicated on the drawings, grout between metal members and hardened concrete shall be 1-1/2 inches thick.
2. Grout shall be placed in strict accordance with the directions of the manufacturer so that all spaces and cavities are completely filled, without voids.
3. Forms shall be provided where structural components will not confine the grout.
4. Place grout only from one side to avoid entrapping air. Provide adequate air vent holes in large areas. Work or flow into place, filling all cavities.
5. Reinforce grout pads or applications three inches or more in thickness with wire mesh or reinforce bars.
6. Excessive means of vibration may cause segregation of aggregates and will not be permitted.

C. Edge Finishing

1. In all locations where the edge of the grout will be exposed to view, the grout shall be finished smooth after it has reached its initial set. Except where shown to be finished on a slope, the edges of grout shall be cut off flush at the baseplate, bedplate, member, or piece of equipment.

D. Curing

1. Nonshrinking grout shall be protected against rapid loss of moisture by covering with wet cloths or polyethylene sheets. After edge finishing is completed, the grout shall be wet cured for at least 3 days and then an acceptable membrane curing compound shall be applied.

3.02 EPOXY GROUT

- A. Epoxy grout shall consist of a two-component liquid epoxy adhesive of viscosity appropriate to the location and application, and an inert aggregate filler component, if recommended by the adhesive manufacturer. Components shall be packaged separately at the factory and shall be mixed immediately before use. Proportioning and mixing of the components shall be done in accordance with the manufacturer's recommendations.

B. Preparation

1. Where indicated on the drawings, anchor bolts, threaded rod anchors, and reinforcing bars shall be epoxy grouted in holes drilled into hardened concrete. Diameters of holes shall be as follows:

Item	Diameter of Hole
Reinforcing Bars and Threaded Rod Anchors	1/8 inch larger than the outside diameter of the bar of the rod
Headed Anchor Bolts	Bolt diameter plus 2 inches

2. The embedment depth for epoxy grouted anchor bolts, threaded rod anchors, and reinforcing bars shall be at least 15 bolt, rod, or bar diameters, unless otherwise indicated on the drawings.
3. Holes shall be prepared for grouting as recommended by the grout manufacturer.

C. Installation

1. Anchor bolts, threaded rod anchors, and reinforcing bars shall be clean, dry, and free of grease and other foreign matter when installed.
2. The bolts, rods, and bars shall be set and positioned and the epoxy grout shall be placed and finished in accordance with the recommendations of the grout manufacturer.
3. All cavities to be filled with grout must be clean and clear of debris.
4. Care shall be taken to ensure that all spaces and cavities are filled with epoxy grout, without voids.

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**07/24**

**SECTION 03600**  
**GROUT**

5. During assembly of all threaded stainless steel components, anti-seize thread lubricant shall be liberally applied to the threaded portion not embedded in concrete.

END OF SECTION

Lake Maspenock Dam  
Left Downstream Wall Repair Re-Bid  
Milford, MA

**APPENDIX A - PERMITS**



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Page: 1 of 10 02/17/2023 09:38 AM W

**Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands

**WPA Form 5 - Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #:223-1217

eDEP Transaction #:1469307

City/Town:MILFORD

**A. General Information**

1. Conservation Commission MILFORD

2. Issuance a.  OOC b.  Amended OOC

3. Applicant Details

a. First Name JOHN b. Last Name WESTERLING, DPW DIRECTOR

c. Organization HOPKINTON DEPARTMENT OF PUBLIC WORKS

d. Mailing Address 83 WOOD STREET

e. City/Town HOPKINTON f. State MA g. Zip Code 01748

4. Property Owner

a. First Name b. Last Name

c. Organization HOPKINTON DEPARTMENT OF PUBLIC WORKS

d. Mailing Address 83 WOOD STREET

e. City/Town HOPKINTON f. State MA g. Zip Code 01748

5. Project Location

a. Street Address PINE ISLAND ROAD

b. City/Town MILFORD c. Zip Code 01757

d. Assessors 10 e. Parcel/Lot# 3 4 5

Map/Plat#

f. Latitude 42.18192N g. Longitude 71.55336W

6. Property recorded at the Registry of Deed for:

a. County	b. Certificate	c. Book	d. Page
WORCESTER		41695	131

7. Dates

a. Date NOI Filed : 12/22/2022 b. Date Public Hearing Closed: 1/5/2023 c. Date Of Issuance: 1/6/2023

8. Final Approved Plans and Other Documents

a. Plan Title:	b. Plan Prepared by:	c. Plan Signed/Stamped by:	d. Revised Final Date:	e. Scale:
LAKE MASPENOCK DAM LEFT DOWNSTREAM WALL REPAIR	PARE CORPORATION	ALLEN ORSI P E	1/5/2023	AS NOTED

**B. Findings**

1. Findings pursuant to the Massachusetts Wetlands Protection Act  
Following the review of the the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act.

Check all that apply:

a. <input type="checkbox"/> Public Water Supply	b. <input type="checkbox"/> Land Containing Shellfish	c. <input type="checkbox"/> Prevention of Pollution
d. <input type="checkbox"/> Private Water Supply	e. <input checked="" type="checkbox"/> Fisheries	f. <input type="checkbox"/> Protection of Wildlife Habitat



**Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands

**WPA Form 5 - Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #:223-1217

eDEP Transaction #:1469307

City/Town:MILFORD

g. Ground Water Supply       h. Storm Damage Prevention       i. Flood Control

2. Commission hereby finds the project, as proposed, is:

**Approved** subject to:

a.  The following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

**Denied** because:

b.  The proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**

c.  The information submitted by the applicant is not sufficient to describe the site, the work or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**

3.  Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310CMR10.02(1)(a). 0  
a. linear feet

**Inland Resource Area Impacts:(For Approvals Only):**

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input type="checkbox"/> Bank	<u>                    </u> a. linear feet	<u>                    </u> b. linear feet	<u>                    </u> c. linear feet	<u>                    </u> d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. square feet	<u>                    </u> d. square feet
6. <input type="checkbox"/> Land under Waterbodies and Waterways	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. square feet	<u>                    </u> d. square feet
	<u>                    </u> e. c/y dredged	<u>                    </u> f. c/y dredged		
7. <input type="checkbox"/> Bordering Land Subject to Flooding	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. square feet	<u>                    </u> d. square feet
Cubic Feet Flood Storage	<u>                    </u> e. cubic feet	<u>                    </u> f. cubic feet	<u>                    </u> g. cubic feet	<u>                    </u> h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	<u>                    </u> a. square feet	<u>                    </u> b. square feet		

**Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands

**WPA Form 5 - Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #:223-1217

eDEP Transaction #:1469307

City/Town:MILFORD

Cubic Feet Flood Storage	<u>                    </u> c. cubic feet	<u>                    </u> d. cubic feet	<u>                    </u> e. cubic feet	<u>                    </u> f. cubic feet
9. <input type="checkbox"/> Riverfront Area				
Sq ft within 100 ft	<u>                    </u> a. total sq. feet	<u>                    </u> b. total sq. feet		
Sq ft between 100-200 ft	<u>                    </u> c. square feet	<u>                    </u> d. square feet	<u>                    </u> e. square feet	<u>                    </u> f. square feet
	<u>                    </u> g. square feet	<u>                    </u> h. square feet	<u>                    </u> i. square feet	<u>                    </u> j. square feet

**Coastal Resource Area Impacts:**

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	<u>                    </u> a. square feet	<u>                    </u> b. square feet		
	<u>                    </u> c. c/y dredged	<u>                    </u> d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. c/y nourishment	<u>                    </u> d. c/y nourishment
14. <input type="checkbox"/> Coastal Dunes	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. c/y nourishment	<u>                    </u> d. c/y nourishment
15. <input type="checkbox"/> Coastal Banks	<u>                    </u> a. linear feet	<u>                    </u> b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	<u>                    </u> a. square feet	<u>                    </u> b. square feet		
17. <input type="checkbox"/> Salt Marshes	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. square feet	<u>                    </u> d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	<u>                    </u> a. square feet	<u>                    </u> b. square feet		
	<u>                    </u> c. c/y dredged	<u>                    </u> d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. square feet	<u>                    </u> d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	<u>                    </u> c. c/y dredged	<u>                    </u> d. c/y dredged		
21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	<u>                    </u> a. square feet	<u>                    </u> b. square feet		

**Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands

**WPA Form 5 - Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #:223-1217

eDEP Transaction #:1469307

City/Town:MILFORD

22.

Restoration/Enhancement (For Approvals Only)

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c & d or B.17.c & d above, please entered the additional amount here.

\_\_\_\_\_ a. square feet of BVW

\_\_\_\_\_ b. square feet of Salt Marsh

23.

Streams Crossing(s)

If the project involves Stream Crossings, please enter the number of new stream crossings/number of replacement stream crossings.

\_\_\_\_\_ a. number of new stream crossings

\_\_\_\_\_ b. number of replacement stream crossings

**C. General Conditions Under Massachusetts Wetlands Protection Act**

**The following conditions are only applicable to Approved projects**

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. the work is a maintenance dredging project as provided for in the Act; or
  - b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not exceed the issuance date of the original Final Order of Conditions.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.
8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work..

**Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands

**WPA Form 5 - Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #:223-1217

eDEP Transaction #:1469307

City/Town:MILFORD

10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

" Massachusetts Department of Environmental Protection"  
[or 'MassDEP']  
File Number : "223-1217"

11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before Mass DEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

**NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS**

19. The work associated with this Order(the "Project") is (1)  is not (2)  subject to the Massachusetts Stormwater Standards. If the work is subject to Stormwater Standards, then the project is subject to the following conditions;
- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollutant Discharge Elimination System Construction General Permit as required by Stormwater Standard 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that: *i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all

**Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands

**WPA Form 5 - Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #:223-1217

eDEP Transaction #:1469307

City/Town:MILFORD

construction period sediment trapped in inlet and outlet control structures; *ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized; *iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10; *iv.* all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition; *v.* any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 19(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following: *i.*) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and *ii.*) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollutant Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 19(f) through 19(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 19(f) through 19(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.
- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
  2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
  3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the

**Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands

**WPA Form 5 - Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #:223-1217

eDEP Transaction #:1469307

City/Town:MILFORD

prior written approval of the issuing authority.

- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

**Special Conditions:**

**D. Findings Under Municipal Wetlands Bylaw or Ordinance**

1. Is a municipal wetlands bylaw or ordinance applicable?  Yes  No

2. The Conservation Commission hereby (check one that applies):

a.  DENIES the proposed work which cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:

1. Municipal Ordinance or Bylaw \_\_\_\_\_

2. Citation \_\_\_\_\_

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order or Conditions is issued. Which are necessary to comply with a municipal ordinance or bylaw:

b.  APPROVES the proposed work, subject to the following additional conditions.

1. Municipal Ordinance or Bylaw \_\_\_\_\_

2. Citation \_\_\_\_\_

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows:

## Milford Conservation Commission

### Special Conditions

20. A reduced size copy of the approved plan shall be recorded with the Order of Conditions prior to the start of construction.
21. Prior to construction, the applicant shall provide the Conservation Commission or its Agent with written certification by a Professional Engineer (or equivalent professional) the erosion control barriers are installed according to the approved plans.
22. A copy of this Order of Conditions must be on site at the time of Construction.
23. All equipment and facilities shall be continually operated and maintained to comply with this Order and the Wetlands Protection Act.
24. Any significant changes will require the Applicant to file for an Amendment to the Order of Conditions. The following changes shall be considered significant:
  - Any vertical change of a design feature greater than two feet.
  - Horizontal relocation of any structure by greater than five feet.Except that a reduction in the structure footprint and relocation of the same structure away from the wetland may be considered a minor change.
25. A Professional Wetland Scientist shall be on site during construction of the wetland restoration area.
26. An As-built plan of the project shall be prepared and certified by a Registered Professional Engineer with expertise in hydrology and hydraulics specifying the completed work is in substantial compliance with the Order of Conditions or how the work differs from the approved plans but provides an equivalent or greater protection to the resource areas as the approved design.
27. The wetland restoration area shall be monitored by a Professional Wetland Scientist for two (2) growing seasons and a report shall be submitted certifying the restoration of the disturbed wetland area prior to issuance of a Certificate of Compliance.



**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
223-1217  
 MassDEP File #  
1469307  
 eDEP Transaction #  
Milford  
 City/Town

### E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

1-6-2023  
 1. Date of Issuance

Please indicate the number of members who will sign this form.

4  
 2. Number of Signers

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Joseph P. Zaccilli  
 Signature

Joseph P. Zaccilli  
 Printed Name

[Signature]  
 Signature

Paul BRAGA  
 Printed Name

[Signature]  
 Signature

Derek Atherton  
 Printed Name

[Signature]  
 Signature

Michael Rolo  
 Printed Name

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Printed Name

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Printed Name

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Printed Name

Signature  
 by hand delivery on

Printed Name  
 by certified mail, return receipt requested, on

1-10-23  
 Date

\_\_\_\_\_  
 Date



**Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands

**WPA Form 5 - Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #:223-1217

eDEP Transaction #:1469307

City/Town:MILFORD

subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

MILFORD

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

MILFORD

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

PINE ISLAND ROAD

Project Location

223-1217

MassDEP File Number

Has been recorded at the Registry of Deeds of:

County

Book

Page

for:

Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

Rev. 4/1/2010



Certified Mail No. 7018 0680 0001 3243 0476  
Return Receipt Requested

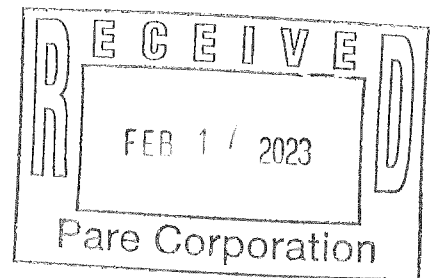
**M.G.L. Chapter 253**  
**Dam Safety Permit**  
**Permit No. 33 - 2023 - 412**

Applicant

Allen R. Orsi, PE  
Pare Corporation  
10 Lincoln Road, Suite 210  
Foxboro, MA 02035

On behalf of:  
Town of Hopkinton  
c/o John Westerling, Director of Public Works  
83 Wood Street  
Hopkinton, MA 01748

Re: Lake Maspenock Dam Downstream Wall Repair  
National Dam ID: MA00627  
Registry Location: Southern Worcester, Deed Book 41695, Page 131  
Owner: Town of Hopkinton  
Dam Location: Milford, Upton



Date: February 3, 2023

Dear Mr. Orsi:

Reference is made to the application dated December 16, 2022 provided by Pare Corporation (Pare). This was submitted for Department of Conservation and Recreation (DCR) Office of Dam Safety (ODS) regulatory review of the above-referenced dam rehabilitation project.

Permission is hereby granted under M.G.L. Chapter 253, as amended, to perform work indicated on the drawings titled: "**Lake Maspenock Dam Left Downstream Wall Repair (North Pond Dam) MA00627/3-14-185-3, Milford/Upton, Massachusetts**" dated December 2022, "**Proposed Site Plan, Sheet 3.0**" last revised January 12, 2023 and as described in supporting documentation provided by Pare.

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation  
251 Causeway Street, Suite 600  
Boston, MA 02114-2199  
617-626-1250 617-626-1351 Fax  
www.mass.gov/dcr



Maura T. Healey  
Governor

Kimberley Driscoll  
Lt. Governor

Rebecca L. Tepper, Secretary  
Executive Office of Energy & Environmental Affairs

Douglas J. Rice, Commissioner  
Department of Conservation & Recreation

Permission is granted subject to the following conditions:

- (a) At least 21 days before the start of construction, the dam owner shall provide the DCR/ODS - Permits Section a completed **DAM SAFETY IMPROVEMENTS – NOTICE OF CONSTRUCTION** (form attached) with a construction schedule and proof of recording of the Ch. 253 Permit at the Registry of Deeds in the county where the dam lies. If the Notice of Construction provided to ODS lacks a construction schedule, proof of recording of the permit, or an explanation of why permit recording is not possible, ODS will return the Notice of Construction to the dam owner indicating the Notice of Construction is incomplete and informing the owner that construction shall not commence until ODS has received a complete Notice of Construction with the required attachments.
- (b) For all features of the project, the Dam Engineer (Pare) shall notify ODS of any design change from the original design submitted with the permit application due to regulatory requirements, changes in field conditions or any other unanticipated occurrence. This notification shall be a formal submittal to ODS which includes all relevant revised plans, computations and data (survey, geotechnical, etc.) supporting the design change(s). This submittal shall be forwarded to ODS by registered mail, return receipt requested, and will require an amendment to the permit. Review time may vary based upon the complexity of the design change(s), however, ODS will generally issue the permit amendment within five (5) business days of receipt of a complete design revision submittal.
- (c) The Dam Engineer must report to ODS any unforeseen incidents that occur at the work site during project work. Unforeseen incidents include, but are not limited to, significant uncontrolled seepage into the work area, significant earth support failures or slope failures. The report must explain in detail what occurred, corrective measures taken to mitigate the occurrence and any impacts the occurrence may have had on the project. If the incident results in a design change, ODS must be provided revised design documents (refer to Condition (b), above).
- (d) During construction, a copy of the dam's Emergency Action Plan (EAP) shall be maintained on-site by the resident engineer.
- (e) The following shall be prepared by the contractor, approved by the Dam Engineer, and submitted to ODS prior to construction:
  - A water control plan describing methods to be employed to allow work to be performed "in the dry"; and
  - A flood response plan. While construction is underway, weather forecasts, stream flows and water levels shall be monitored to allow adequate time to respond to rising water levels at the construction site. If high water levels are expected, equipment and materials shall be removed from the work area and personnel

evacuated. Sufficient materials and equipment required for flood response shall be maintained in a safe location at, or near, the construction site.

- (f) A sufficient level of construction oversight shall be provided by the Dam Engineer to ensure the work conforms to: the project plans and specifications; the Ch. 253 Permit conditions; and generally accepted dam construction practices as determined by the U.S. Army Corps of Engineers, the U.S. Bureau of Reclamation and/or the U.S. Natural Resources Conservation Service.

**Guidance, procedures, checklists, worksheets, and references to aid in construction quality assurance are available in the United States Department of Agriculture Natural Resources Conservation Service National Engineering Handbook Part 645- Construction Inspection and can be accessed at this**

**link:** <https://directives.sc.egov.usda.gov/viewerFS.aspx?hid=31701> .

- (g) The Dam Engineer shall invite ODS to the preconstruction meeting, another project meeting at 50% completion and the final inspection meeting. ODS reserves the right to make site visits and inspections at any time during the permit period. ODS requests the following items be addressed at the pre-construction meeting:
- Identification of the
    - resident engineer (Owner's representative overseeing the project);
    - contractor's qualified site superintendent; and
    - Dam Engineer's representative overseeing the project.
  - Provide emergency contact information for the contractor and resident engineer;
  - Presentation of the resident engineer's weekly work schedule and discussion of the level of construction oversight to be provided by the resident engineer;
  - Flood emergency warning and response procedures;
  - Level of Dam Engineer construction oversight including: identification of any critical construction items to be overseen by the Dam Engineer; procedures for the Dam Engineer's review and approval of shop drawings and other submittals; documentation of Dam Engineer's approval of any design modifications; procedures for coordinating and scheduling the Dam Engineer's inspection of critical construction elements;
  - Anticipated schedule of construction meetings and required attendees. It is expected that while construction is ongoing, weekly construction meetings will be held and attended by the Dam Engineer; the resident engineer, the contractor's superintendent and other appropriate participants; and
  - Presentation of the initial construction schedule with identification and discussion of major items.

ODS shall be provided a copy of the preconstruction meeting minutes.

- (h) The Dam Engineer shall provide ODS written documentation that he/she has reviewed and approved all pertinent submittals or samples concerning critical project dam features. This documentation may be in the form of a submittal log which may be submitted as part of the “as-built” report, described below.
- (i) Upon completion of work the Applicant shall submit to ODS a **DAM SAFETY CERTIFICATE OF COMPLETION** (form attached). With this certificate of completion submit one bound (utilizing plastic comb bindings) as-built report with 11”x17” record drawings signed and stamped by a registered professional civil engineer with contractor’s signature attesting that all work was performed according to the plans and specifications. The as-built report shall include documentation of submittals reviewed and approved by the Dam Engineer, copies of any materials or construction testing reports and color photos of construction phases and appurtenant installations. Photograph numbers, location and direction in which each photo was taken must be identified. An electronic copy (as a .pdf) of the as-built report and record drawings shall be provided to ODS via email, .ftp site or on a USB flash drive.
- (j) Once the project has been completed and the reservoir has returned to its normal elevation, the Dam Engineer shall perform a Phase I Inspection to document the condition of the dam.
- (k) The Certificate of Completion, as-built report and Phase I Inspection report shall be provided to ODS within 90 days of substantial completion of work unless ODS agrees to later submission of these documents. Submission of these documents is required prior to ODS issuing a Certificate of Compliance.

**Any permit issued by DCR shall be subject to revocation by order of the Commissioner if the permittee fails to conform to 302 CMR 10.00, Dam Safety Rules and Regulations, provisions of this permit, or any other applicable laws and regulations.**

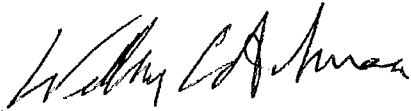
This permit does not release the applicant from the requirements of any other regulatory authority. Such authorizations and/or notifications include, but are not limited to:

- Local Conservation Commission;
- Massachusetts Department of Environmental Protection (DEP);
- Massachusetts Department of Fish and Game (DFG);
- Massachusetts Executive Office of Environmental Affairs (EOEA), MEPA Unit; and
- U.S. Army Corps of Engineers.

**This permit must be recorded by the applicant at the Registry of Deeds in the county where the dam lies. Recording must be done prior to the commencement of construction and a copy of the recorded permit filed with the Office of Dam Safety.**

This permit remains valid for two (2) years from the date of issue: **February 3, 2023.**

Permit expiration date: **February 3, 2025.**



William Salomaa, Director  
DCR, Office of Dam Safety



David Ouellette, Permit Engineer  
DCR, Office of Dam Safety

Attachments: Dam Safety Improvements – Notice of Construction form  
Dam Safety Certificate of Completion form

**Informational (NOT TO BE RECORDED AT REGISTRY OF DEEDS)**

Excerpts from Dam Safety Rules Regulations:

**302 CMR 10.09(5): Recording a Chapter 253 Permit.**

A permit to construct, drawdown, repair, alter, breach or remove a dam shall be recorded at the Registry of Deeds in the county where the dam lies. Recording must be done prior to the commencement of construction and a copy of the recorded permit filed with the Commissioner.

To: DCR, Office of Dam Safety – Permits Section  
251 Causeway Street, Suite 600  
Boston, MA 02114

## DAM SAFETY IMPROVEMENTS - NOTICE OF CONSTRUCTION

### Dam Owner/Applicant

Name:  
Representative:  
Address:  
Phone:  
Fax:  
Email Address:

### Project

Project location Town/City:  
Dam name:  
National Dam ID Number:  
State Dam ID Number:  
Nature of Dam Safety Improvements:  
Chapter 253 Permit date of issue:  
Chapter 253 Permit expiration date:  
Permit Recorded at \_\_\_\_\_ Registry of Deeds  
Dam Parcel Registry of Deeds Book Number:  
Dam Parcel Registry of Deeds Page Number:  
Recorded Permit Registry of Deeds Book Number:  
Recorded Permit Registry of Deeds Page Number:  
Copy of the recorded permit attached Yes ( )  
Construction start date:  
Construction schedule attached Yes ( )

### Engineer

Company Name:  
Representative:  
Address:  
Phone:  
Fax:  
Email Address:

### Contractor

Company Name:  
Representative:  
Address:  
Phone:  
Fax:  
Email Address :



**Brief description of project, note location and dates of construction:**

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**By Contractor**

Print name and title: \_\_\_\_\_

Signature and date: \_\_\_\_\_

**By Engineer**

Print name, title: \_\_\_\_\_

Signature and date: \_\_\_\_\_

**By Dam Owner/Applicant**

Print name and title: \_\_\_\_\_

Signature and date: \_\_\_\_\_

To: DCR, Office of Dam Safety – Permits Section  
251 Causeway Street, Suite 600  
Boston, MA 02114

## DAM SAFETY CERTIFICATE OF COMPLETION

### Dam Owner/Applicant

Name:  
Representative:  
Address:  
Phone:  
Fax:  
Email Address:

### Project

Project location Town/City:  
Dam name:  
National Dam ID Number:  
State Dam ID Number:  
Nature of Dam Safety Improvements:  
Chapter 253 Permit date of issue:  
Chapter 253 Permit expiration date:  
Permit Recorded at \_\_\_\_\_ Registry of Deeds  
Dam Parcel Registry of Deeds Book Number:  
Dam Parcel Registry of Deeds Page Number:  
Recorded Permit Registry of Deeds Book Number:  
Recorded Permit Registry of Deeds Page Number:  
Project completion date:

### Engineer

Company Name:  
Representative:  
Address:  
Phone:  
Fax:  
Email Address:

### Contractor

Company Name:  
Representative:  
Address:  
Phone:  
Fax:  
Email Address :

**Brief description of project and dates of construction:**

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**Statement of project completion in accordance with plans, specifications, dam safety permit conditions and standard construction practices:**

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**By Contractor**

Print name and title: \_\_\_\_\_

Signature and date: \_\_\_\_\_

**By Engineer**

Print name, title and PE stamp here: \_\_\_\_\_

Signature and date: \_\_\_\_\_

**By Dam Owner/Applicant**

Print name and title: \_\_\_\_\_

Signature and date: \_\_\_\_\_