# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>SECTION</th>
<th>TITILE</th>
<th>NUMBER OF PAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00010</td>
<td>Table of Contents</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Number of Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bidding Documents</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Invitation to Bid</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Information for Bidders</td>
<td>3</td>
</tr>
<tr>
<td>00411</td>
<td>Bid Form</td>
<td>11</td>
</tr>
<tr>
<td>00431</td>
<td>Bid Bond</td>
<td>3</td>
</tr>
<tr>
<td>00455</td>
<td>Non-Collusion Affidavit</td>
<td>1</td>
</tr>
<tr>
<td>00461</td>
<td>Qualifications of Bidder Form</td>
<td>4</td>
</tr>
</tbody>
</table>

| Contracting Requirements                     |                 |
| 00501  | Town Approval Form                         | 1               |
| 00521  | Agreement – War Memorial Park              | 9               |
| 00611  | Performance Bond                           | 3               |
| 00612  | Payment Bond                               | 2               |
| 00700  | General Conditions                         | 42              |
| 00800  | Supplemental Conditions                    | 11              |

| Division 1 - General Requirements           |                 |
| 01100 | Summary                                    | 6               |
| 01250 | Contract Modification Procedures           | 12              |
| 01275 | Payment Items                              | 11              |
| 01290 | Payment Procedures                         | 7               |
| 01310 | Project Management and Coordination        | 4               |
| 01330 | Submittal Procedures                       | 12              |
| 01400 | Quality Requirements                       | 6               |
| 01410 | Testing Lab                                | 3               |
**TABLE OF CONTENTS**

<table>
<thead>
<tr>
<th>SECTION</th>
<th>TITLE</th>
<th>NUMBER OF PAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>01420</td>
<td>References .......................................................................</td>
<td>10</td>
</tr>
<tr>
<td>01500</td>
<td>Temporary Facilities and Controls ..................................</td>
<td>7</td>
</tr>
<tr>
<td>01572</td>
<td>Temporary Erosion and Sedimentation Control ....................</td>
<td>6</td>
</tr>
<tr>
<td>01600</td>
<td>Product Requirements ..................................................</td>
<td>8</td>
</tr>
<tr>
<td>01700</td>
<td>Execution Requirements ................................................</td>
<td>5</td>
</tr>
<tr>
<td>01770</td>
<td>Closeout Procedures ..................................................</td>
<td>7</td>
</tr>
<tr>
<td>Division 2 - 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02245</td>
<td>Control of Water ..........................................................</td>
<td>5</td>
</tr>
<tr>
<td>02260</td>
<td>Excavation Support and Protection ..................................</td>
<td>5</td>
</tr>
<tr>
<td>02300</td>
<td>Earthwork .................................................................</td>
<td>12</td>
</tr>
<tr>
<td>02925</td>
<td>Surface Restoration ....................................................</td>
<td>6</td>
</tr>
<tr>
<td>04902</td>
<td>Stone Masonry Restoration ............................................</td>
<td>8</td>
</tr>
</tbody>
</table>
BIDDING DOCUMENTS
The Town of West Bridgewater invites sealed bids for the repair/reconstruction of stone millrace walls at War Memorial Park located on River St., West Bridgewater, MA in accordance with Contract Documents prepared by Fuss & O’Neill, 317 Iron Horse Way, Suite 204, Providence, RI 02908.

This property, listed in the State and National Registers of Historic Places, has received a grant from the Community Preservation Coalition. All work must comply with the Secretary of the Interior’s Standards for the Treatment of Historical Properties with Guidelines for the Treatment of Cultural Landscapes.

Bids are subject to MGL Chapter 30 Section 39M and Chapter 149 Sections 27-27D. Bidders are required to have current OSHA training. The construction budget for this project is approximately $125,000.

Bids will be received until 10:00 a.m. Thursday, July 27, 2017 in the Selectmen’s Office, Town Hall, 65 North Main St., West Bridgewater, MA 02379 at which time they will be publicly opened and read.

All bids together with a five percent (5%) bid deposit and their specification forms, must be sealed, addressed to the Administrator, as well as clearly marked “Sealed Bids for War Memorial Park” and the bidder’s name. All bids MUST include fully completed Bid Specification Forms, bid deposit, and non-collusion affidavit and be in compliance with ALL specifications listed in the Bid Specifications, to be considered.

A mandatory pre-bid conference and walk-thru will be held at 1:00 p.m. on site on Tuesday, July 18, 2017 at War Memorial Park on River Street.

Contract Documents on digital media may be obtained as of 12:00 noon Wednesday, July 5 2017 from the Town’s website (http://www.westbridgewaterma.org/government/board_of_selectmen/bidding_opportunities.php) or the Selectmen’s Office, and subsequently between 8:30 a.m. to 4 p.m. Mon – Thurs.; and 8:30 a.m. to 12 noon on Fridays.

All inquires relative to the Contract Documents are to be directed to Forestry and Parks Dept. Chris Iannitelli at 1-508-894-1217 or Rachael Weiter of Fuss & O’Neill, Inc. at 1-401-861-3070 ext. 4594.

The Town reserves the right to reject any and all bids and to accept those deemed to be in the best interest of the Town.

David L. Gagne, Administrator
Chief Procurement Officer
Board of Selectmen
INFORMATION TO BIDDERS

1. **PROJECT/BID STRUCTURE AND COORDINATION**

   Work to construct improvements at War Memorial Park (the “site”) on River Street is being completed as a project administered by the Town of West Bridgewater (“Town”).

2. **MANDATORY PRE-BID CONFERENCE**

   A mandatory Pre-Bid Conference will be held at the War Memorial Park on River Street at 1:00 P.M., July 18, 2017. A site walkover will be conducted after an initial period to review the Work and address questions.

3. **EVALUATION OF BIDS:**

   Basis of bid award will be to the lowest responsible and eligible bidder submitting a responsive bid that is most advantageous to the Town of West Bridgewater considering price, discounts, transportation costs, taxes and the bidder’s demonstrated qualifications and ability to complete quality work of the type under this project within the required project timeframe.

4. **RECEIPT AND OPENING OF BIDS:**

   Sealed bids/proposals will be accepted and time stamped upon receipt in the Board of Selectman’s Office, West Bridgewater Town Hall, 65 North Main Street, West Bridgewater, Massachusetts 02379; until 10:00 AM, July 27, 2017 for the commodities, equipment or services listed in the specifications. Bid/Proposals will be publicly read at this time.

5. **SUBMISSION OF BIDS:**

   - Envelopes containing bids must be sealed and addressed to the Administrator/Chief Procurement Officer, Town of West Bridgewater, 65 North Main Street, West Bridgewater, Massachusetts 02379, and must be marked “Sealed Bids for War Memorial Park” and bidder’s name.
   
   - The Town’s Chief Procurement Officer will decide when the specified time has arrived to open bids and no bid thereafter will be considered.
   
   - Any bidder may withdraw his bid by written request at any time prior to the advertised time for opening. Telephone bids, faxed bids, amendments or withdrawals will not be accepted.
   
   - Unless otherwise specified, no bid may be withdrawn for a period of ninety (90) days from the time of bid opening.
Negligence on the part of the bidder in preparing the bid confers no rights for the withdrawal of the bid after it has been opened.

Proposals received prior to the time of opening will be securely kept, unopened. No responsibility will be attached to an officer or person for the premature opening of a proposal not properly addressed and identified.

6. **FORM OF BID:**

Three copies of the proposals shall be submitted.

7. ** MASSACHUSETTS SALES TAX:**

The Town of West Bridgewater is exempt from the payment of the Massachusetts Sales Tax under Chapter 64H, §6 of the General Laws of the State of Massachusetts.

8. **FEDERAL EXCISE TAXES:**

The Town is exempt from the payment of any excise tax or federal transportation taxes. The price bid must be exclusive of taxes and will be so constructed.

9. **QUALIFICATION OF BIDDERS:**

The Town may make such investigations, as it deems necessary to determine the qualifications and ability of the bidder to perform the Work. The bidder shall furnish the Town with all such information and data on the forms provided herein.

10. **ADDENDA AND INTERPRETATIONS:**

No interpretation on the meaning of the Plans, Specifications or other Contract Document will be made to any bidder orally. Every request for such interpretations should be in writing, faxed to Rachael Weiter, Fuss & O’Neill at (401) 861-3076. To be given consideration, these must be received at least ten business days prior to the date fixed for the opening of the bids.

Any and all interpretations, and supplemental instructions which, if issued, will be faxed or emailed to all perspective bidders (at the respective numbers/addresses furnished by the bidder for such purpose), not later than 48 hours prior to the date fixed for the opening of the bids (unless such addenda postpones the opening of bids). Failure of bidder to receive any such addendum or interpretations shall not relieve any bidder from obligation under his bid as submitted. All addenda so issued shall become part of the Contract Document.
11. **DELIVERY OF BIDS:**

No extra charges for delivery, handling or other services will be honored. Only inside delivery and set-up, where required, will be accepted. Deliveries must be made during normal working hours.

12. **ADDITIONAL BID REQUIREMENTS:**

- Bidders shall recognize and agree to Project milestone and completion dates and provisions for liquidated damages specified in the Project Manual.

- Bidders must comply with all State Labor Laws for Public Works projects.

- The successful bidder must have all current taxes paid which are owed to the Town of West Bridgewater.

- In accordance with M.G.L. Chapter 149, §27-27D, Bidder shall base compensation on prevailing wage rates listed in the Wage Determination Schedule included in the Contract Documents, as determined by The Massachusetts Executive Office of Labor and Workforce Development, Department of Labor Standards (DLS).

- In accordance with Massachusetts General Laws Chapter 149, § 29, bidders for public works/public building contracts in excess of $25,000 shall furnish a payment bond (Labor and Materials) upon conditional award of the contract, at 50% of the contract price and conditioned upon faithful performance of the contract. Surety company issuing such bond must be currently listed with The Department of the Treasury, Fiscal Services, Circular 570, (Latest Revision published by the Federal Register) and comply with Massachusetts General Law Chapter 149 §29D.

- In accordance with Massachusetts General Laws Chapter 30, § 39S, contractor work-site employees for public construction contracts costing more than $10,000 shall comply with training certification requirements including an 10-hour OSHA approved course in construction safety and health.
CONTRACT IDENTIFICATION:

War Memorial Park Repair and Reconstruction of Stone Walls
West Bridgewater, Massachusetts

ARTICLE 1 – BID RECIPIENT

1.1 This Bid is submitted to:

Board of Selectmen – Chief Procurement Officer
Town of West Bridgewater
65 North Main Street
West Bridgewater, Massachusetts 02379

1.2 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.1 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 calendar days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.1 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

<table>
<thead>
<tr>
<th>Addendum No.</th>
<th>Addendum Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
B. Bidder has visited the Site and become familiar with and is satisfied as to the
general, local and Site conditions that may affect cost, progress, and performance
of the Work.

C. Bidder is familiar with and is satisfied as to all federal, State and local Laws and
Regulations that may affect cost, progress and performance of the Work.

D. Bidder has carefully studied all reports of explorations and tests of subsurface
conditions at or contiguous to the Site and all drawings of physical conditions in or
relating to existing surface or subsurface structures at or contiguous to the Site
(except Underground Facilities).

E. Bidder has obtained and carefully studied (or accepts the consequences for not
doing so) all additional or supplementary examinations, investigations,
explorations, tests, studies and data concerning conditions (surface, subsurface and
Underground Facilities) at or contiguous to the Site which may affect cost,
progress, or performance of the Work or which relate to any aspect of the means,
methods, techniques, sequences, and procedures of construction to be employed
by Bidder, including applying the specific means, methods, techniques, sequences,
and procedures of construction expressly required by the Bidding Documents to
be employed by Bidder, and safety precautions and programs incident thereto.

F. Bidder does not consider that any further examinations, investigations,
explorations, tests, studies, or data are necessary for the determination of this Bid
for performance of the Work at the price(s) bid and within the times and in
accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and
others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has correlated the information known to Bidder, information and
observations obtained from visits to the Site, reports and drawings identified in the
Bidding Documents, and all additional examinations, investigations, explorations,
tests, studies, and data with the Bidding Documents.

I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or
discrepancies that Bidder has discovered in the Bidding Documents, and the
written resolution thereof by Engineer is acceptable to Bidder.

J. The Bidding Documents are generally sufficient to indicate and convey
understanding of all terms and conditions for the performance of the Work for
which this Bid is submitted.

K. Bidder will submit written evidence of its authority to do business in the state
where the Project is located not later than the date of its execution of the
Agreement.
ARTICLE 4 – FURTHER REPRESENTATIONS

4.1 Bidder further represents that:

A. this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

E. Bidder certifies compliance with Massachusetts General Law Chapter 30, § 39S pertaining to OSHA training requirements for its work site employees.

ARTICLE 5 – BASIS OF BID

5.1 Bidder will complete the Work in accordance with the Contract Documents for the following price(s), as selected by the Owner:

A. The Total Contract Base Bid Price shall include, but not be limited to, work items depicted on Sheets CS-102 of the Contract Drawings, including all provisions for site access, control of water, erosion controls, protection of public and features to remain, and restoration of all disturbed areas associated with the following repair work items:

SOUTH MILL RACE WALL RECONSTRUCTION AND REPAIR (CS-102)

 a. Wall repair/reconstruction, slope regrading, walkway relocation and surface restoration between Arch Street Bridge and the wooden bridge downstream of the junction between the South Mill Race and the upstream end of the North Mill Race.
 b. SM-T-9-H
c. SM-T-10-H
d. SM-T-11-H
e. SM-T-12-H
f. SM-T-13-H
g. SM-T-14-H
h. SM-T-15-H
i. SM-T-16-H
j. SM-T-17-H
k. SM-T-23-H
B. Estimated quantities of respective add/deduct items associated with this work item are stated below; payment or deductions in variance of the respective quantities shall only be made for work authorized, completed and accepted in writing by the Engineer.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item Description</th>
<th>Unit</th>
<th>Unit Price Words &amp; Figures</th>
<th>Opinion of Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Mobilization/ Demobilization</td>
<td>LS</td>
<td>__________________________</td>
<td>1</td>
<td>$______________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dollars and\n</td>
</tr>
<tr>
<td>1.2</td>
<td>Site Access, Safety and Security</td>
<td>LS</td>
<td>__________________________</td>
<td>1</td>
<td>$______________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dollars and\n</td>
</tr>
<tr>
<td>1.3</td>
<td>Temporary Erosion and Sedimentation Control</td>
<td>LS</td>
<td>__________________________</td>
<td>1</td>
<td>$______________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dollars and\n</td>
</tr>
<tr>
<td>2.1</td>
<td>Surface Restoration</td>
<td>LS</td>
<td>__________________________</td>
<td>1</td>
<td>$______________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dollars and\n</td>
</tr>
<tr>
<td>3.1</td>
<td>Wall Repair/ Reconstruct - South Mill Race Wall Repair/ Reconstruction (CS-102)</td>
<td>LS</td>
<td>__________________________</td>
<td>1</td>
<td>$______________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dollars and\n</td>
</tr>
</tbody>
</table>
**Total Contract Base Bid Price**

For purposes of bid comparison, the Total Contract Base Bid Price shall be stated below as the direct sum of the items listed above.

<table>
<thead>
<tr>
<th>Bid Item No.</th>
<th>Bid Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. The following alternate add/deduct bid prices are to adjust the value of respective Contract Base Bid and Alternate Bid items noted above. Payment under alternate add/deduct bid items listed below will only be made for work authorized, completed, and accepted by the Engineer in writing.

<table>
<thead>
<tr>
<th>Alt. Lump Sum Bid Price</th>
<th>Bid Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bid Item No.</td>
<td>In Words</td>
</tr>
<tr>
<td>ALT-1 South Mill Race – North Mill Race Junction Wall Reconstruction and Repair (CS-102 &amp; CS-103)</td>
<td></td>
</tr>
<tr>
<td>ALT-2 Foundation Area Wall Reconstruction (CS-108)</td>
<td></td>
</tr>
<tr>
<td>ALT-3 North Mill Race Wall Reconstruction (CS-106)</td>
<td></td>
</tr>
</tbody>
</table>

ALT-1

Wall repair and reconstruction of the wall at the downstream side of the junction between the South Mill Race and the upstream end of the North Mill Race

ALT-2

Repair codes:

a. F-W-9-L
b. F-W-10-M

ALT-3

Repair codes:

a. NM-W-19-H
b. NM-T-13-H

ALT-4  NORTH MILL RACE WALL RECONSTRUCTION (CS-106)

_________________________________________________________  $__________
(Lump Sum)

  Repair codes:
  a. NM-W-18-H
  b. NM-T-14-H
  c. NM-T-16-H

ALT-5  SOUTH MILL RACE WALL RECONSTRUCTION (CS-104)

_________________________________________________________  $__________
(Lump Sum)

  Repair codes:
  a. SM-W-37B-H
  b. SM-W-37C-H

ALT-6  NORTH MILL RACE WALL REPAIR (CS-106)

_________________________________________________________  $__________
(Lump Sum)

  Repair codes:
  a. NM-W-22-M
  b. NM-W-23-M
  c. NM-W-23A-M

ALT-7  NORTH MILL RACE WALL RECONSTRUCTION (CS-106)

_________________________________________________________  $__________
(Lump Sum)

  Repair codes:
  a. NM-W-21-L

ALT-8  NORTH MILL RACE WALL RECONSTRUCTION AND REPAIR (CS-106)

_________________________________________________________  $__________
(Lump Sum)

  Repair codes:
  a. NM-W-25-L
  b. NM-W-26-L
ALT-9  SOUTH MILL RACE WALL RECONSTRUCTION (CS-104)

(Lump Sum)  $_______

Repair codes:

a. SM-W-60-L  
b. SM-W-60A-L  

c. NM-W-28-L  
d. NM-T-21-L

E. The following alternate add/deduct bid prices are to adjust the value of respective Contract Base Bid and Alternate Bid items noted above. Payment under alternate add/deduct bid items listed below will only be made for work authorized, completed and accepted by the Engineer in writing.

CONTRACT ADD/DEDUCT BID ITEMS

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item Description</th>
<th>Unit</th>
<th>Add/Deduct Unit Price Words &amp; Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Reconstruct Wall</td>
<td>SF</td>
<td></td>
</tr>
<tr>
<td>B.</td>
<td>Chink Wall Along Base</td>
<td>SF</td>
<td></td>
</tr>
<tr>
<td>C.</td>
<td>Chink Wall</td>
<td>SF</td>
<td></td>
</tr>
<tr>
<td>D.</td>
<td>Reset Missing Stones</td>
<td>SF</td>
<td></td>
</tr>
<tr>
<td>E.</td>
<td>Reset Top Stones</td>
<td>LF</td>
<td></td>
</tr>
</tbody>
</table>
F. All specified cash allowances are included in the price(s) set forth above and have been computed in accordance with Paragraph 11.02 of the General Conditions.

G. The above prices include all labor, materials, tools, equipment, overhead, profit, insurances, etc. to cover the finished work of the several kinds called for.

H. All specified cash allowances are included in the price(s) set forth above and have been computed in accordance with Paragraph 11.02 of the General Conditions.

I. The above prices include all labor, materials, tools, equipment, overhead, profit, insurances, etc. to cover the finished work of the several kinds called for.

TIME OF COMPLETION

6.1 Bidder agrees that the Work will be substantially completed within the below stated periods after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 30 days after substantial completion.

A. Base Bid: 45 calendar days.

B. Alternate Bid: 30 calendar days for each additional bid item.

6.2 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the Contract Times.

ARTICLE 6 – ATTACHMENTS TO THIS BID

7.1 The following completed documents are attached to and made a condition of this Bid:

A. Required Bid security in the form of Bid Bond (00431).

B. Non-Collusion Affidavit of Bidder (00455).
C. Qualifications of Bidder (00461).

ARTICLE 7 – DEFINED TERMS

8.1 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 8 – BID SUBMITTAL

9.1 This Bid submitted by:

If Bidder is:

AN INDIVIDUAL

Name (typed or printed): ______________________________________________________

By: ______________________________________________________________________

(SEAL)  (Individual's signature)

Doing business as: ____________________________________________________________

Business address: ____________________________________________________________

____________________________________________________________________________

Phone No.: ______________________  FAX No.: ______________________

A PARTNERSHIP

Partnership Name: _____________________________________________________________

(SEAL)

By: ______________________________________________________________________

(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): ______________________________________________________

Business address: ____________________________________________________________

____________________________________________________________________________

Phone No.: ______________________  FAX No.: ______________________

A CORPORATION

Corporation Name: _____________________________________________________________

(SEAL)
State of Incorporation: __________________________

Type (General Business, Professional, Service, Limited Liability): _______________________

By: __________________________________________
    (Signature -- attach evidence of authority to sign)

Name (typed or printed): __________________________

Title: __________________________ (CORPORATE SEAL)

Attest __________________________________________
    (Signature of Corporate Secretary)

Business address: __________________________

Phone No.: __________________________ FAX No.: __________________________

Date of Qualification to do business is __________________________.

A JOINT VENTURE

Joint Venturer Name: __________________________ (SEAL)

By: __________________________________________
    (Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): __________________________

Title: __________________________

Business address: __________________________

Phone No.: __________________________ FAX No.: __________________________

Joint Venturer Name: __________________________ (SEAL)

By: __________________________________________
    (Signature -- attach evidence of authority to sign)

Name (typed or printed): __________________________
Title: ____________________________________________

Business address: ______________________________________________________

______________________________________________________________

Phone No.: ____________________ FAX No.: ______________________

Phone and FAX Number, and Address for receipt of official communications:

______________________________________________________________

(Each joint venturer must sign. The manner of signing for each individual, 
partnership, and corporation that is a party to the joint venture should be in the 
manner indicated above.)

SUBMITTED on ________________, 20__.
State Contractor License No. ________________
BID BOND

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:
Project (Brief Description Including Location):

BOND
Bond Number:
Date (Not later than Bid due date):
Penal sum (Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.
FUSS & O’NEILL, INC.  
WAR MEMORIAL PARK  
REPAIR AND RECONSTRUCTION OF STONE WALLS  
WEST BRIDGEWATER, MASSACHUSETTS

BIDDER

Bidder's Name and Corporate Seal
Corporate Seal

By: ___________________________  
Signature and Title

Attest: ___________________________  
Signature and Title

SURETY

Surety’s Name and Corporate Seal

By: ___________________________  
Signature and Title

Attest: ___________________________  
Signature and Title

Note: Above addresses are to be used for giving required notice.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Surety’s liability.

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 by 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 150 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.
NON-COLLUSION AFFIDAVIT OF BIDDER

State of: __________________________
County of: __________________________, SS)

_________________________________________; being first duly sworn, deposes and says that:

1) He/She is (owner, partner, officer, representative or agent) of ____________________________________________ (the Bidder that has submitted the attached Bid)

2) He/She is fully informed regarding the preparation and contents of the attached Bid and of all pertinent circumstances regarding 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, owner, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived, 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 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 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 with the Owner or any person interested in the proposed Contract.

5) The price quoted in the attached Bid is fair and proper and is not tainted by collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest.

Signed: ____________________________________________
Title: ____________________________________________

Subscribed and sworn before me this _________ day of __________________________ , 20_____.

Notary Public: ____________________________________________

My Commission expires __________________________ , 20_____.

NON-COLLUSION AFFIDAVIT
F:\P2009\0735\C40\Project Manual\Division 0\00455 NON-COLLUSION AFFIDAVIT.doc
**QUALIFICATIONS of BIDDER FORM**

Bidder's Name:  

Each Bidder is required to submit information that exemplifies their qualifications, and their listed subcontractor’s qualifications, to successfully implement the scope of work required by the Contract Documents. At a minimum, the information submitted shall include information requested on the forms below. Attach additional sheets if necessary.

Indicate if Bidder is a state-registered Minority or Woman-owned Business Enterprise (MBE/WBE):

**Previous Experience Involving Historic Stone Masonry Reconstruction (Prime Contractor)**

Provide written descriptions of at least three (3) and no more than ten (10) previous successful projects within the past five (5) years requiring historically-accurate stone masonry wall repair or reconstruction and similar scale and dollar value to that entailed in the proposed work at War Memorial Park under this contract. Project descriptions shall include the following items; copy/provide additional pages as necessary. Color photographs and other documentation of completed work is encouraged.

1. **Project Name:**  
   Project Location:  
   Brief Scope of Work:  
   Date Completed:  
   Approximate Dollar Value:  
   Owner's Representative:  
   Owner's Telephone:  

2. **Project Name:**  
   Project Location:  
   Brief Scope of Work:  
   Date Completed:  
   Approximate Dollar Value:  
   Owner's Representative:  
   Owner's Telephone:  

---

QUALIFICATIONS of BIDDER FORM  00461-1  
F:\P2009\0735\C40\Project Manual\Division 0\00461 QUALIFICATIONS of BIDDER FORM_War Memorial Park.doc
3. Project Name: ____________________________
   Project Location: ___________________________
   Brief Scope of Work: _________________________
   ___________________________________________
   ___________________________________________
   Date Completed: _____________________________
   Approximate Dollar Value: ____________________
   Owner's Representative: ______________________
   Owner's Telephone: __________________________

4. Project Name: ____________________________
   Project Location: ___________________________
   Brief Scope of Work: _________________________
   ___________________________________________
   Date Completed: _____________________________
   Approximate Dollar Value: ____________________
   Owner's Representative: ______________________
   Owner's Telephone: __________________________

5. Project Name: ____________________________
   Project Location: ___________________________
   Brief Scope of Work: _________________________
   ___________________________________________
   Date Completed: _____________________________
   Approximate Dollar Value: ____________________
   Owner's Representative: ______________________
   Owner's Telephone: __________________________

Masonry Subcontractor (if subcontracted)

Identify any subcontractor(s) proposed for stone masonry work at the site under this contract. Note that only those contractor(s) identified below will be permitted to participate in such work, and replacement subcontractors shall not be allowed unless equally or better qualified than those listed below.

For each subcontractor, provide written descriptions of at least three (3) and no more than ten (10) previous successful projects within the past five (5) years requiring historically-accurate stone masonry wall repair or reconstruction and similar scale and dollar value to that entailed in the proposed work at War Memorial Park under this contract. Project descriptions shall include the following items; copy/provide additional pages as necessary. Color photographs and other documentation of completed work is encouraged.
1. Name: 
Address: 
Contact Person: Phone: 
Work Efforts by Subcontractor for this Bid: 

2. Name: 
Address: 
Contact Person: Phone: 
Work Efforts by Subcontractor for this Bid: 

3. Name: 
Address: 
Contact Person: Phone: 
Work Efforts by Subcontractor for this Bid: 

MBE Subcontractors:

1. Name: 
Address: 
Contact Person: Phone: 
Work Efforts by Subcontractor for this Bid: 

Value of Subcontractor’s Work for this Bid: 
2. Name: ____________________________
   Address: ____________________________
   Contact Person: ______________ Phone: ______________
   Work Efforts by Subcontractor for this Bid: ____________________________
   Value of Subcontractor’s Work for this Bid: ____________________________

WBE Subcontractors:

1. Name: ____________________________
   Address: ____________________________
   Contact Person: ______________ Phone: ______________
   Work Efforts by Subcontractor for this Bid: ____________________________
   Value of Subcontractor’s Work for this Bid: ____________________________

2. Name: ____________________________
   Address: ____________________________
   Contact Person: ______________ Phone: ______________
   Work Efforts by Subcontractor for this Bid: ____________________________
   Value of Subcontractor’s Work for this Bid: ____________________________

Bank Reference:

Name: ____________________________
Address: ____________________________
Contact: ____________________________
Phone: ____________________________
CONTRACTING REQUIREMENTS
SECTION 00501
TOWN APPROVAL FORM

Approved as to form:

By: ________________________________ __________________________
    Town Counsel                          Date

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 therefore and that the Board of Selectmen of the Town of West Bridgewater have been authorized to execute the contract and approval all requisitions and change orders.

By: ________________________________ __________________________
    Town Accountant                     Date

END OF SECTION
THIS AGREEMENT is by and between

the Town of West Bridgewater, Massachusetts

(Owner) and

(Contractor).

Owner and Contractor, in consideration of the mutual covenants set forth herein, agree as follows:

ARTICLE 1 - WORK

1.1 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work generally includes, but is not limited to, the following: Repairing and reconstructing stone masonry walls along the internal system of mill races within War Memorial Park, tree stump removal; construction access, temporary erosion and sedimentation controls, temporary control of water, surface grading, surface restoration, and appurtenant rehabilitative works as depicted and noted on the Contract Drawings.

ARTICLE 2 - ENGINEER

2.1 The Project has been designed by Fuss & O'Neill, Inc., who is to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 3 - CONTRACT TIMES

3.1 Time of the Essence

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

3.2 Days to Achieve Substantial Completion and Final Payment

A. The Work will be substantially completed within 90 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 30 days after substantial completion. Additional time for Alternate Bid Item work shall be provided as stated herein.
3.3 Liquidated Damages

A. Contractor and Owner recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 3.2 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner $250 for each day that expires after the time specified in Paragraph 3.2 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner $500 for each day that expires after the time specified in Paragraph 3.2 above for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 4 - CONTRACT PRICE

4.1 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs below, as accepted and selected at the sole discretion of the Owner:

<table>
<thead>
<tr>
<th>LUMP SUM BID ITEM NO.</th>
<th>LUMP SUM BID PRICE IN WORDS</th>
<th>LUMP SUM BID PRICE IN FIGURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SOUTH MILL RACE WALL RECONSTRUCTION AND REPAIR (CS-102)</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>(Lump Sum)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CONTRACT ALTERNATE BIDS

<table>
<thead>
<tr>
<th>ALT. LUMP SUM BID ITEM NO.</th>
<th>BID PRICE IN WORDS</th>
<th>BID PRICE IN FIGURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALT-1. SOUTH MILL RACE – NORTH MILL RACE JUNCTION WALL RECONSTRUCTION AND REPAIR (CS102 &amp; CS-103)</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>(Lump Sum)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| ALT-2. FOUNDATION AREA WALL RECONSTRUCTION (CS-108) | $ | |
| (Lump Sum) | | |
ALT-3. NORTH MILL RACE WALL RECONSTRUCTION (CS-106)

$ __________________________
(Lump Sum)

ALT-4. NORTH MILL RACE WALL RECONSTRUCTION (CS-106)

$ __________________________
(Lump Sum)

ALT-5. SOUTH MILL RACE WALL RECONSTRUCTION (CS-104)

$ __________________________
(Lump Sum)

ALT-6. NORTH MILL RACE WALL REPAIR (CS-106)

$ __________________________
(Lump Sum)

ALT-7. NORTH MILL RACE WALL RECONSTRUCTION (CS-106)

$ __________________________
(Lump Sum)

ALT-8. NORTH MILL RACE WALL RECONSTRUCTION AND REPAIR (CS-106)

$ __________________________
(Lump Sum)

ALT-9. SOUTH MILL RACE WALL RECONSTRUCTION (CS-104)

$ __________________________
(Lump Sum)
A. The following alternate add/deduct bid prices are to adjust the value of respective Contract Base Bid and Alternate Bid items noted above. Payment under alternate add/deduct bid items listed below will only be made for work authorized, completed and accepted by the Engineer in writing.

**CONTRACT ADD/DEDUCT BID ITEMS**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Unit</th>
<th>Add/Deduct Unit Price</th>
<th>Words &amp; Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Reconstruct Wall</td>
<td>SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B.</td>
<td>Chink Wall Along Base</td>
<td>SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.</td>
<td>Chink Wall</td>
<td>SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.</td>
<td>Reset Missing Stones</td>
<td>SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E.</td>
<td>Reset Top Stones</td>
<td>LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F.</td>
<td>Excavate Stump</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.</td>
<td>Grind Stump</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dollars and ____________ Cents ($_____________)
ARTICLE 5 - PAYMENT PROCEDURES

5.1 Submittal and Processing of Payments

A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

5.2 Progress Payments; Retainage

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor’s Applications for Payment on or about the first day of each month during performance of the Work as provided in Paragraphs 5.2.A.1 and 5.2.A.2 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions:
   a. 95 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, Owner, on recommendation of Engineer, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no additional retainage; and
   b. 50 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

2. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 98 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less 100 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

5.3 Final Payment

A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07 of the General Conditions.
ARTICLE 6 – CONTRACTOR’S REPRESENTATIONS

6.1 In order to induce Owner to enter into this Agreement Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all federal, State, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions.

E. Contractor has obtained and carefully studied (or assumes responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto.

F. Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

I. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

6.2 Bidder agrees that the Work will be substantially completed within the below stated periods after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions.
Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within _30_ days after substantial completion

a. Base Bid: 90 calendar days.

b. Each Additional Alternate Bid: 30 additional calendar days.

6.3 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the Contract Times.

ARTICLE 7 - CONTRACT DOCUMENTS

7.1 Contents

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to 9, inclusive).

2. Performance bond (pages 1 to 3, inclusive).

3. Payment bond (pages 1 to 2, inclusive).

4. General Conditions (pages 1 to 36, inclusive).

5. Supplementary Conditions (pages 1 to 10 inclusive).


7. Drawings consisting of the sheets listed in the List of Drawings of this Project Manual.

8. Addenda (numbers _____ to _____, inclusive).

9. Exhibits to this Agreement (enumerated as follows):

   a. Exhibits listed in the Table of Contents of the Project Manual

   b. Contractor’s Bid (pages _____ to _____, inclusive).

   c. Documentation submitted by Contractor prior to Notice of Award (pages _____ to _____, inclusive).

   d. Certificate of Insurance (pages _____ to _____, inclusive).

10. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
a. Notice to Proceed (pages _____ to _____, inclusive).

b. Work Change Directives.

c. Change Order(s).

B. The documents listed in Paragraph 7.1.A above are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 7.

D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 8 - MISCELLANEOUS

8.1 Terms

A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

8.2 Assignment of Contract

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

8.3 Successors and Assigns

A. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

8.4 Severability

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
8.5 Other Provisions

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement in duplicate. One counterpart each has been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or identified by Owner and Contractor or on their behalf.

This Agreement will be effective on __________, _____ (which is the Effective Date of the Agreement).

OWNER:  

Town of West Bridgewater  

By: ____________________________  

Title: __________________________

[CORPORATE SEAL]  

Attest: ____________________________  

Title: __________________________

Address for giving notices: ____________________________

________________________________________

________________________________________

________________________________________

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of Owner-Contractor Agreement.)

CONTRACTOR:  

By: ____________________________  

Title: __________________________

[CORPORATE SEAL]  

Attest: ____________________________  

Title: __________________________

Address for giving notices: ____________________________

________________________________________

________________________________________

________________________________________

License No.: ____________________________  

(Where applicable)

Agent for service or process: ____________________________

________________________________________

(If Contractor is a corporation or a partnership, attach evidence of authority to sign.)
PERFORMANCE BOND

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

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

OWNER (Name and Address): Town of West Bridgewater, 65 North Main Street, West Bridgewater Massachusetts 02379

CONTRACT
Date: Amount: Description (Name and Location): War Memorial Park Repair and Reconstruction of Stone Walls

BOND
Bond Number: Date (Not earlier than Contract Date): Amount: Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL
Company: Signature: ___________________________ (Seal) Name and Title: ___________________________

SURETY
Surety’s Name and Corporate Seal: ___________________________ (Seal)

By: ___________________________ Signature and Title ___________________________
(Attach Power of Attorney)

Attest: ___________________________ Signature and Title ___________________________

(Space is provided below for signatures of additional parties, if required.)

SURETY

Attest: ___________________________ Signature and Title ___________________________

Signature and Title ___________________________

CONTRACTOR AS PRINCIPAL
Company: Signature: ___________________________ (Seal) Name and Title: ___________________________

SURETY
Surety’s Name and Corporate Seal: ___________________________ (Seal)

By: ___________________________ Signature and Title ___________________________
(Attach Power of Attorney)

Attest: ___________________________ Signature and Title ___________________________

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.
1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.

2. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.

3. If there is no Owner Default, Surety's obligation under this Bond shall arise after:

   3.1. Owner has notified Contractor and Surety, at the addresses described in Paragraph 10 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and

   3.2. Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 3.1; and

   3.3. Owner has agreed to pay the Balance of the Contract Price to:

      1. Surety in accordance with the terms of the Contract;

      2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.

4. When Owner has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:

   4.1. Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or

   4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and Contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

   1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefore to Owner; or

   2. Deny liability in whole or in part and notify Owner citing reasons therefore.

5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 4.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.

6. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To a limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

   6.1. The responsibilities of Contractor for correction of defective Work and completion of the Contract;

   6.2. Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting
from the actions or failure to act of Surety under Paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.

7. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.

8. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1 Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.

12.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

12.3. Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

FOR INFORMATION ONLY – Fuss & O’Neill, Inc.
Owner’s Representative (engineer or other party)
PAYMENT BOND

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

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

OWNER (Name and Address): Town of West Bridgewater, 65 North Main Street, West Bridgewater, Massachusetts 02379

CONTRACT
Date:
Amount:
Description: Powder House Cemetery Stone Wall Repair/Reconstruction

BOND
Bond Number:
Date (Not earlier than Contract Date):
Amount:
Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL
Company:
Signature: ____________________________  (Seal)
Name and Title: ________________________

SURETY
Company:
Signature: ____________________________  (Seal)
Surety’s Name and Corporate Seal
By: _________________________________
Signature and Title
(Attach Power of Attorney)
Attest:
Signature and Title

CONTRACTOR AS PRINCIPAL
Company:
Signature: ____________________________  (Seal)
Name and Title: ________________________

SURETY
Company:
Signature: ____________________________  (Seal)
Surety’s Name and Corporate Seal
By: _________________________________
Signature and Title
(Attach Power of Attorney)
Attest: ______________________________
Signature and Title:

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.
1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to Owner, this obligation shall be null and void if Contractor:
   2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
   2.2. Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.

3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.

4. Surety shall have no obligation to Claimants under this Bond until:
   4.1. Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the addresses described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
   4.2. Claimants who do not have a direct contract with Contractor:
      1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
      2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
      3. Not having been paid within the above 30 days, have sent a written notice to Surety and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.

5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.

6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety’s expense take the following actions:
   6.1. Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
   6.2. Pay or arrange for payment of any undisputed amounts.

7. Surety’s total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.

8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner’s priority to use the funds for the completion of the Work.

9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory requirement in the location where the Work was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

15.1. Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms “labor, materials or equipment” that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's Subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

15.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.
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 Law.

STANDARD
GENERAL CONDITIONS
OF THE
CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE

a practice division of the

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

___________________

AMERICAN COUNCIL OF ENGINEERING COMPANIES

___________________

AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General Contractors of America

Construction Specifications Institute
These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001) (2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800) (2002 Edition).
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>ARTICLE 1 - DEFINITIONS AND TERMINOLOGY</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.01 Defined Terms</td>
<td>1</td>
</tr>
<tr>
<td>1.02 Terminology</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ARTICLE 2 - PRELIMINARY MATTERS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.01 Delivery of Bonds and Evidence of Insurance</td>
<td>4</td>
</tr>
<tr>
<td>2.02 Copies of Documents</td>
<td>4</td>
</tr>
<tr>
<td>2.03 Commencement of Contract Times; Notice to Proceed</td>
<td>4</td>
</tr>
<tr>
<td>2.04 Starting the Work</td>
<td>4</td>
</tr>
<tr>
<td>2.05 Before Starting Construction</td>
<td>4</td>
</tr>
<tr>
<td>2.06 Preconstruction Conference</td>
<td>4</td>
</tr>
<tr>
<td>2.07 Initial Acceptance of Schedules</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.01 Intent</td>
<td>5</td>
</tr>
<tr>
<td>3.02 Reference Standards</td>
<td>5</td>
</tr>
<tr>
<td>3.03 Reporting and Resolving Discrepancies</td>
<td>5</td>
</tr>
<tr>
<td>3.04 Amending and Supplementing Contract Documents</td>
<td>6</td>
</tr>
<tr>
<td>3.05 Reuse of Documents</td>
<td>6</td>
</tr>
<tr>
<td>3.06 Electronic Data</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.01 Availability of Lands</td>
<td>6</td>
</tr>
<tr>
<td>4.02 Subsurface and Physical Conditions</td>
<td>6</td>
</tr>
<tr>
<td>4.03 Differing Subsurface or Physical Conditions</td>
<td>7</td>
</tr>
<tr>
<td>4.04 Underground Facilities</td>
<td>8</td>
</tr>
<tr>
<td>4.05 Reference Points</td>
<td>8</td>
</tr>
<tr>
<td>4.06 Hazardous Environmental Condition at Site</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ARTICLE 5 - BONDS AND INSURANCE</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.01 Performance, Payment, and Other Bonds</td>
<td>9</td>
</tr>
<tr>
<td>5.02 Licensed Sureties and Insurers</td>
<td>10</td>
</tr>
<tr>
<td>5.03 Certificates of Insurance</td>
<td>10</td>
</tr>
<tr>
<td>5.04 Contractor’s Liability Insurance</td>
<td>10</td>
</tr>
<tr>
<td>5.05 Owner’s Liability Insurance</td>
<td>11</td>
</tr>
<tr>
<td>5.06 Property Insurance</td>
<td>11</td>
</tr>
<tr>
<td>5.07 Waiver of Rights</td>
<td>12</td>
</tr>
<tr>
<td>5.08 Receipt and Application of Insurance Proceeds</td>
<td>12</td>
</tr>
<tr>
<td>5.09 Acceptance of Bonds and Insurance; Option to Replace</td>
<td>12</td>
</tr>
<tr>
<td>5.10 Partial Utilization, Acknowledgment of Property Insurer</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ARTICLE 6 - CONTRACTOR’S RESPONSIBILITIES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.01 Supervision and Superintendent</td>
<td>13</td>
</tr>
<tr>
<td>6.02 Labor; Working Hours</td>
<td>13</td>
</tr>
<tr>
<td>6.03 Services, Materials, and Equipment</td>
<td>13</td>
</tr>
<tr>
<td>6.04 Progress Schedule</td>
<td>13</td>
</tr>
<tr>
<td>6.05 Substitutes and “Or-Equals”</td>
<td>13</td>
</tr>
<tr>
<td>6.06 Concerning Subcontractors, Suppliers, and Others</td>
<td>15</td>
</tr>
<tr>
<td>6.07 Patent Fees and Royalties</td>
<td>16</td>
</tr>
<tr>
<td>6.08 Permits</td>
<td>16</td>
</tr>
<tr>
<td>6.09 Laws and Regulations</td>
<td>16</td>
</tr>
<tr>
<td>6.10 Taxes</td>
<td>16</td>
</tr>
<tr>
<td>6.11 Use of Site and Other Areas</td>
<td>16</td>
</tr>
<tr>
<td>6.12 Record Documents</td>
<td>16</td>
</tr>
<tr>
<td>6.13 Safety and Protection</td>
<td>17</td>
</tr>
<tr>
<td>6.14 Safety Representative</td>
<td>18</td>
</tr>
<tr>
<td>6.15 Hazard Communication Programs</td>
<td>18</td>
</tr>
<tr>
<td>6.16 Emergencies</td>
<td>18</td>
</tr>
</tbody>
</table>
THIS PAGE

IS

INTENTIONALLY

LEFT BLANK
GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. 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 which is evidence of the agreement between Owner and Contractor covering the Work.

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. Asbestos--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. Bid--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. Bidder--The individual or entity who submits a Bid directly to Owner.

7. Bidding Documents--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. Bidding Requirements--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. Change Order--A document recommended by Engineer 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, issued on or after the Effective Date of the Agreement.

10. Claim--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. Contract--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. Contract Documents--Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor’s submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. Contract Price--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. Contract Times--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer’s written recommendation of final payment.

15. Contractor--The individual or entity with whom Owner has entered into the Agreement.


17. Drawings--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. Effective Date of the Agreement--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. Engineer--The individual or entity named as such in the Agreement.

20. Field Order--A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. General Requirements--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. Hazardous Environmental Condition--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.
23. **Hazardous Waste**--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. **Laws and Regulations**; **Laws or Regulations**--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. **Liens**--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. **Milestone**--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. **Notice of Award**--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. **Notice to Proceed**--A written notice given 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 under the Contract Documents.

29. **Owner**--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. **PCBs**--Polychlorinated biphenyls.

31. **Petroleum**--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. **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.

33. **Project**--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. **Project Manual**--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. **Radioactive Material**--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. **Related Entity**--An officer, director, partner, employee, agent, consultant, or subcontractor.

37. **Resident Project Representative**--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. **Samples**--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. **Schedule of Submittals**--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. **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.

41. **Shop Drawings**--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. **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 for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. **Specifications**--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

44. **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 at the Site.

45. **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.
46. **Successful Bidder**—The Bidder submitting a responsive Bid to whom Owner makes an award.

47. **Supplementary Conditions**—That part of the Contract Documents which amends or supplements these General Conditions.

48. **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 any Subcontractor.

49. **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 those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. **Unit Price Work**—Work to be paid for on the basis of unit prices.

51. **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, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. **Work Change Directive**—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 **Terminology**

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following 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 requirements of and information in the Contract Documents and conformance with the design concept of the completed 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 Paragraph 9.09 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 14.04 or 14.05).

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. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases which 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. 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 Insurance: Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 Copies of Documents

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 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 Agreement 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 Agreement. 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 Agreement, whichever date is earlier.

2.04 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 the date on which the Contract Times commence to run.

2.05 Before Starting Construction

A. Preliminary Schedules: Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), 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 Documents;

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.

2.06 Preconstruction Conference

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 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 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 2.05.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 therefore.

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 component parts of the Work.
ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, 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. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 Reference Standards

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, 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, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement 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, 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 Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, 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 Contract Documents.

3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies

1. Contractor's Review of Contract Documents Before Starting Work: Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. Contractor's Review of Contract Documents During Performance of Work: If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, 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 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

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 knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); 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 Amending and Supplementing Contract Documents

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.
A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, 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 Engineer’s consultants, including electronic media editions; or

2. reuse any of 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 adoption by Engineer.

B. The prohibition 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.

3.06 Electronic Data

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user’s sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data’s creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data’s creator.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 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. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner’s furnishing the Site or a part thereof, Contractor may make a Claim therefore as provided in Paragraph 10.05.

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 the Work is to be performed 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.

4.02 Subsurface and Physical Conditions

A. Reports and Drawings: The Supplementary Conditions 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; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. Limited Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities 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.

4.03 Differing Subsurface or Physical Conditions

A. Notice: If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed 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 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; 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 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. Engineer's Review: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition 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 meet any one or more of the categories described in Paragraph 4.03.A; and

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 Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final 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

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefore as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or 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) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 Underground Facilities

A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous 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 shall not be responsible for the accuracy or completeness of any such information or data; 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 such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. Not Shown or Indicated
1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, 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 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefore as provided in Paragraph 10.05.

4.05 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.

4.06 Hazardous Environmental Condition at Site

A. Reports and Drawings: Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. Limited Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities 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 any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) 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.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. 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, either party may make a Claim therefore as provided in Paragraph 10.05.

F. 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. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefore as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, 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: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 Performance, Payment, and Other Bonds

A. Contractor shall furnish performance and payment bonds, 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 Documents. 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 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent’s authority to act.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, 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 requirements of Paragraphs 5.01.B and 5.02.

5.02 Licensed Sureties and Insurers

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 Certificates of Insurance

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

5.04 Contractor's Liability Insurance

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which 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:

1. claims under workers’ compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor’s employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor’s employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
   a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
   b. by any other person for any other reason;

5. 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; and

6. 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.

5.04 The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, 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;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor’s indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 Owner’s Liability Insurance

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, 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.

5.06 Property Insurance

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full 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 interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder’s Risk “all-risk” or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the
following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser’s own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 Waiver of Rights

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies 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 of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, 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 Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, 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 as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, 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 utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.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, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 Receipt and Application of Insurance Proceeds

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner’s exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 Acceptance of Bonds and Insurance; Option to Replace

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, 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. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party’s interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 Partial Utilization, Acknowledgment of Property Insurer

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR’S RESPONSIBILITIES

6.01 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. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At 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. The superintendent will be Contractor’s representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

6.02 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. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 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.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, 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.

6.04 Progress Schedule

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 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 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 Substitutes and “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 specification or description 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 or no substitution is permitted, 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.

1. “Or-Equal” Items: If in Engineer’s sole discretion 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, it may be considered by Engineer as an “or-equal” item, in which case review and approval of the proposed item may, in Engineer’s sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, 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

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.

2. Substitute Items

a. If in Engineer’s sole discretion an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as
supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. 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:

1) shall certify that the proposed substitute item will:
   a) perform adequately the functions and achieve the results called for by the general design,
   b) be similar in substance to that specified, and
   c) be suited to the same use as that specified;

2) will state:
   a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor’s achievement of Substantial Completion on time;
   b) whether or not 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
   c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:
   a) all variations of the proposed substitute item from that specified, and
   b) available engineering, sales, maintenance, repair, and replacement services;

4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer’s sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. Engineer’s Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No “or equal” or substitute will be ordered, installed or utilized until Engineer’s review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an “or equal.” Engineer will advise Contractor in writing of any negative determination.

D. Special Guarantee: Owner may require Contractor to furnish at Contractor’s expense a special performance guarantee or other surety with respect to any substitute.

E. Engineer’s Cost Reimbursement: Engineer will record Engineer’s costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the 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.

F. Contractor’s Expense: Contractor shall provide all data in support of any proposed substitute or “or-equal” at Contractor’s expense.

6.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner’s acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so
identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. 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 any right of Owner or Engineer to reject defective Work.

C. 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. 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 anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. 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.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 6.07, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, 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 such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 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, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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.

6.08 Permits

A. Unless otherwise provided in the Supplementary Conditions, 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 opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 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 knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear 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. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided in Paragraph 10.05.

6.10 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.

6.11 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 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 by or based upon Contractor's performance of the Work.

B. Removal of Debris During Performance of the Work: During the progress of the Work Contractor shall keep the Site and other 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 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 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 property to stresses or pressures that will endanger it.

6.12 Record Documents

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

6.13 Safety and Protection

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. 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 or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, 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 owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.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 (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or , 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).

D. Contractor’s duties and responsibilities for safety and for protection of the Work 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 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 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.

6.15 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.

6.16 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.

6.17 Shop Drawings and Samples

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. Shop Drawings
   a. Submit number of copies specified in the General Requirements.
   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 6.17.D.

2. Samples: Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.
   a. Submit number of Samples specified in the Specifications.
   b. 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 6.17.D.

B. 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. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:
   a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog
numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor’s responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

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 and approval of that 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 both a written communication separate from the Shop Drawing’s or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.
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 (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer’s review and approval 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 6.17.C.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’s review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

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.

6.18 Continuing the Work

A. 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, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 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 Related Entities shall be entitled to rely on representation of 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 or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 respective consultants, agents, officers, directors, partners, or employees 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 6.20.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 6.20.A shall not extend to the liability of Engineer and Engineer’s officers, directors, 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.

6.21 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 law.

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, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or other submittals prepared by such professional. Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 - OTHER WORK AT THE SITE

7.01 Related Work at Site

A. Owner may perform other work related to the Project at the Site with Owner’s employees, or via other direct contracts therefore, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefore as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner’s employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. 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 their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor’s Work depends upon work performed by others under this Article 7, 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.
7.02 Coordination

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 Legal Relationships

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor’s actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor’s action or inactions.

ARTICLE 8 - OWNER’S RESPONSIBILITIES

8.01 Communications to Contractor

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

8.02 Replacement of Engineer

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 Furnish Data

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

8.04 Pay When Due

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 Lands and Easements; Reports and Tests

A. Owner’s duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner’s identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 Insurance

A. Owner’s responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 Change Orders

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 Inspections, Tests, and Approvals

A. Owner’s responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 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.

8.10 Undisclosed Hazardous Environmental Condition

A. Owner’s responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 Evidence of Financial Arrangements

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner’s obligations under the Contract Documents, Owner’s responsibility in respect thereof will be as set forth in the Supplementary Conditions.
ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 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 Documents and will not be changed without written consent of Owner and Engineer.

9.02 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 9.09. 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.

9.03 Project Representative

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. 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.

9.04 Authorized Variations in Work

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which 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. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement or on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided in Paragraph 10.05.

9.05 Rejecting Defective Work

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 Shop Drawings, Change Orders and Payments

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with 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, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 Determinations for Unit Price Work

A. 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 Paragraph 10.05.
A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer’s decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer’s written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 Limitations on Engineer’s Authority and Responsibilities

A. Neither Engineer’s authority or responsibility under this Article 9 or under any other provision of the Contract Documents 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, or of 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 14.07.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 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 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 by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefore as provided in Paragraph 10.05.

10.02 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 as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 Execution of Change Orders

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner’s correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. 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; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 Notification to Surety

A. If notice 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) is required by the provisions of any bond to be given to a surety, 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.

10.05 Claims

A. Engineer’s Decision Required: All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. Notice: Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant’s written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant’s last submittal (unless Engineer allows additional time).

C. Engineer’s Action: Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,

2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer’s sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer’s written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.
ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 Cost of the Work

A. Costs Included: The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

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 at the Site. 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, 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 11.01.

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, 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 5.06.D), 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 telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. **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, expediters, 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 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which 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 Paragraphs 11.01.A and 11.01.B.

C. **Contractor’s Fee:** When all the Work 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 or when a Claim for an 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 12.01.C.

D. **Documentation:** Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, 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.

11.02 **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**

1. Contractor agrees that:

   a. 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

   b. 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**

1. 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.

11.03 **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. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
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. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 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; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. Contractor believes that Contractor 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 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for 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, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor’s fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. Contractor’s Fee: 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 11.01.A.1 and 11.01.A.2, the Contractor’s fee shall be 15 percent;

   b. for costs incurred under Paragraph 11.01.A.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 Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

   d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

   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 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 Change of Contract Times

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 Delays

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost
due to such delay if a Claim is made therefore as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, 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 Price or the Contract Times, or both. 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.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is 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 described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or 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) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 Notice of Defects

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 Access to Work

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor’s Site safety procedures and programs so that they may comply therewith as applicable.

13.03 Tests and Inspections

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

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 and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner’s and Engineer’s acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor’s purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. 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, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor’s expense unless Contractor has given Engineer timely notice of Contractor’s intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 Uncovering Work
A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer’s observation and replaced at Contractor’s expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, 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, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, 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 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 Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefore as provided in Paragraph 10.05.

D. 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, Contractor may make a Claim therefore as provided in Paragraph 10.05.

13.05 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, 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.

13.06 Correction or Removal of Defective Work

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. 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 removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner’s special warranty and guarantee, if any, on said Work.

13.07 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 land or areas made available for Contractor’s use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner’s written instructions:

1. repair such defective land or areas; or

2. correct such defective Work; or

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 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. 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) will be paid by Contractor.

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 13.07, 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 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 Acceptance of Defective Work

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer’s recommendation of final payment, Engineer) prefers to accept it, Owner may so do. 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) attributable to Owner’s evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer’s recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefore as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 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 in accordance with Paragraph 13.06.A, 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, 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 13.09, 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, take possession of Contractor’s tools, appliances, construction equipment and machinery at the Site, 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 (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) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefore as provided in Paragraph 10.05. 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 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 Schedule of Values

A. The Schedule of Values established as provided in Paragraph 2.07.A 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.

14.02 Progress Payments

A. 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 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.

B. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, 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 on the Site 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, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to 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 Documents; or

b. that 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 moneys 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 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer’s opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer’s recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
a. claims have been made against Owner on account of Contractor’s performance or furnishing of the Work;

b. 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;

c. there are other items entitling Owner to a set-off against the amount recommended; or

d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action 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, when Contractor corrects to Owner’s satisfaction the reasons for such action.

3. If it is subsequently determined that Owner’s refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.03 Contractor’s Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 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 (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

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 therefore.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefore. If, after consideration of Owner’s objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer’s issuing the definitive certificate of Substantial Completion, Engineer’s aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.05 Partial Utilization

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. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and 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 therefore. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 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 5.10 regarding property insurance.

14.06 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 is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 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, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

   b. consent of the surety, if any, to final payment;

   c. a list of all Claims against Owner that Contractor believes are unsettled; and

   d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible 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.

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, 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 Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer’s recommendation of payment and present the Application for Payment to Owner for payment. 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 14.09. 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. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and , will be paid by Owner to Contractor.

14.08 Final Completion Delayed

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor’s final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written
consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 Waiver of Claims

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 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 notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefore as provided in Paragraph 10.05.

15.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will 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 established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor’s disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor’s disregard of the authority of Engineer; or


B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. 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

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.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 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) sustained by Owner arising out of or related to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed 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.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor’s services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. 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. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 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;

3. 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) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) 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 15.03.

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 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 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.
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.

17.03 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 Documents. 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.

17.04 Survival of Obligations

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

17.05 Controlling Law

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

17.06 Headings

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.
SECTION 00800 - SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. C-700, 2002 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.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

SC-1.01 Defined Terms

A. Add the following new paragraph immediately after paragraph 1.01.A.19:

“A. Engineer’s Consultant – An individual or entity having a contract with Engineer to furnish services as Engineer’s independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

1. Engineer’s Consultants are identified as follows:

a. Archaeological and Historical Services, Storrs, CT.

B. Amend Paragraph 1.01.A.37 to read as follows:

“37. Resident Project Representative – The authorized representative of Engineer or Owner who may be assigned to the Site or any part thereof.”

ARTICLE 2 - PRELIMINARY MATTERS

SC-2.02 Copies of Documents

A. Delete Paragraph 2.02.A in its entirety and insert the following in its place:

“A. Owner shall furnish to Contractor up to 3 printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.”
ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

SC-3.03 Reporting and Resolving Discrepancies

A. Add the following new paragraph immediately after Paragraph 3.03B.1.b.

“2. In resolving conflicts, errors, and discrepancies, the documents shall be given precedence in the following order: Agreement, Specifications, and Drawings. Within the specifications the order of precedence shall be as follows: Supplementary Conditions, General Conditions, and Technical Provisions. Figure dimensions on Drawings shall govern over scaled dimensions, and detailed Drawings shall govern over general Drawings.”

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

SC-4.02 Subsurface and Physical Conditions

A. Add the following new paragraph(s) immediately after paragraph 4.02.B.3:

“C. In the preparation of Drawings and Specifications, Engineer or Engineer’s Consultants relied upon the following drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the Site:

1. Base mapping that is incorporated as part of the Contract Drawings, as obtained from digitized MassGIS, USGS Color Orthophoto Imagery dated 2008/2009 and field measurements obtained during site visits conducted by Fuss & O’Neill in August and September 2012, June 2015, and March 2017.

ARTICLE 5 - BONDS AND INSURANCE

SC-5.03 Certificates of Insurance

A. Add the following new Paragraphs immediately after Paragraph 5.03.B:

“C. Failure of Owner to demand such certificates or other evidence of full compliance with these insurance requirements or failure of Owner to identify a deficiency from evidence provided shall not be construed as a waiver of Contractor’s obligation to maintain such insurance.
D. By requiring such insurance and insurance limits herein, Owner does not represent that coverage and limits will necessarily be adequate to protect Contractor, and such coverage and limits shall not be deemed as a limitation on Contractor’s liability under the indemnities granted to Owner in the Contract Documents.”

SC-5.04 Contractor’s Liability Insurance

A. Add the following new Paragraphs immediately after Paragraph 5.04.B.7.a:

“C. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Worker’s Compensation, and related coverage under Paragraphs 5.04.A.1 and A.2 of the General Conditions:
   a. State: Statutory
   b. Applicable Federal (e.g., Longshoreman’s): Statutory
   c. Employer’s Liability: $100,000 Each Accident
   $500,000 Disease-Policy Limit
   $100,000 Disease-Each Employee

2. Contractor’s General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include Constructors Protective, Products, and Completed Operations and Contractual Liability (e.g., collapse and underground coverage to be included. Blasting and explosion coverage required if there will be blasting under the contract):
   a. General Aggregate: $2,000,000
   b. Products and Completed Operations Aggregate $2,000,000
   c. Personal and Advertising Injury: $1,000,000
   d. Each Occurrence Limit: $1,000,000
   e. Fire Damage Limit: $50,000
   f. Medical Payments: $5,000

3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:
   a. Combined Single Limit for Bodily Injury and Property Damage: $1,000,000

4. Owner’s Protective Liability coverage required by Paragraph 5.05.A of the General Conditions shall provide coverage for not less than the following amounts:
   a. Each occurrence: $1,000,000
   b. Aggregate: $2,000,000
5. Builder’s Risk and Installation Floater Coverage: Limit equal to the total insurable value of all materials and equipment to be built and/or installed.


7. Additional Insured: “Town of West Bridgewater.”

SC-5.06 Property Insurance

A. Delete Paragraph 5.06.A - B in its entirety and insert the following in its place:

“A. Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof.

1. The insurance shall:

   a. include the interests of Owner, Contractor, Subcontractors, Engineer and any other individuals or entities identified herein, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of any of them each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

   b. in addition to the individuals and entities specified, include as additional insureds, the following:

      Town of West Bridgewater

   c. be written on a Builder’s Risk “all-risk” or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, false work, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism, and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other then caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

   d. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

   e. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the
Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

f. allow for partial utilization of the Work by Owner;

g. include testing and startup; and

h. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

2. Contractor shall be responsible for any deductible or self-insured retention.”

ARTICLE 6 - CONTRACTOR’S RESPONSIBILITIES

SC-6.05  Substitutes and “Or-Equals”

A. Delete last sentence of Paragraph 6.05.A and insert the following in its place:

“Unless the Specification or description contains or is followed by words reading “like”, “equivalent”, or “or equal” are allowed, Contractor shall provide the proprietary item or the item from the list of the named supplier(s). Where the Specification or description contains or is followed by words reading “like”, “equivalent” or “or-equal” items are permitted, 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.”

B. Add the following new paragraph after 6.05.E.

“1. “Or-Equal” Evaluation. Engineer will record time required by Engineer in evaluating “or-equal” proposed or submitted by Contractor pursuant to paragraph 6.05.A.1. Whether or not Engineer approves an “or-equal” item so proposed or submitted by Contractor, Contractor shall reimburse Owner for charges of Engineer and Engineer’s Consultants for evaluating each such proposed “or-equal.” Submittal of “or-equal” request shall be construed as evidence of Contractor’s agreement to pay such charges, with no added cost to Owner.”

2. Substitution Evaluation. Engineer will record time required by Engineer and Engineer’s Consultants in evaluating substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contact with Owner for work on the Project) occasioned thereby. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor
shall reimburse Owner for charges of Engineer and Engineer’s Consultants for evaluating each such proposed substitute.

3. Charges shall be $100.00 for each staff-hour spent by Engineer and Engineer’s Consultants for evaluating each “or equal” or substitute.”

SC-6.06 Concerning Subcontractors, Suppliers, and Others

A. Delete Paragraph 6.06.C.2 and replace with the following:

“shall create any obligation on the part of Owner or Engineer. Owner or Engineer may furnish to any such Subcontractor, Supplier, or other individual or entity, to the extent practicable, information about amounts paid to Contractor on account of work performed for Contractor by a particular Subcontractor, Supplier, or other individual or entity.”

SC-6.10 Taxes

A. Add the following new paragraph immediately after Paragraph 6.10.A:

“B. The Owner is exempt from State Sales Tax.”

SC-6.12 Record Documents

A. Add the following new paragraph immediately after Paragraph 6.12.A:

“B. Progress payments will not be made to Contractor unless Record Document requirements are met.”

ARTICLE 7 – OTHER WORK AT THE SITE

SC-7.03 Legal Relationships

A. Add the following new paragraph immediately after Paragraph 7.03 and renumber following paragraphs:

“A. Claims Between Contractors: Should Contractor cause damage to the Work or property of any separate contractor at the Site, or should any claim arising out of the Contractor’s performance of the Work at the Site be made by any separate contractor against Contractor, Owner, Engineer, Engineer’s Consultants, or the construction coordinator, Contractor shall promptly attempt to settle with such separate contractor by agreement, or to otherwise resolve the dispute by arbitration or at law.

B. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner, Engineer, Engineer’s Consultants, the construction coordinator
and the officers, directors, partners, employees, agents and other consultants and subcontractors of each and any of them from and against all claims, costs, losses and damages (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any separate contractor against Owner, Contractor, Engineer, Engineer’s Consultants, or the construction coordinator to the extent said claim is based on or arises out of the Contractor’s performance of the Work. Should a separate contractor cause damage to the Work or property of Contractor or should the performance of work by any separate contractor at the Site give rise to any other Claim, Contractor shall not institute any action, legal or equitable, against Owner, Engineer, Engineer’s Consultants, or the construction coordinator or permit any action against any of them to be maintained or continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from Owner, Engineer, Engineer’s Consultants or the construction coordinator on account of any such damage or Claim.

C. If Contractor is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor, and Owner and Contractor are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, Contractor may make a Claim for an extension of times in accordance with Article 12. An extension of the Contract Time shall be Contractor’s exclusive remedy with respect to Owner, Engineer, Engineer’s Consultants, and construction coordinator for any delay, disruption, interference, or hindrance caused by any separate contractor. This paragraph does not prevent recovery from Owner, Engineer, Engineer’s Consultant, or construction coordinator for activities that are their respective responsibilities.”

ARTICLE 8 – OWNER’S RESPONSIBILITIES

SC-8.11 Evidence of Financial Arrangements

A. Add the following new paragraph immediately after Paragraph 8.11.A:

“B. On request of Contractor prior to execution of any Change Order involving a significant increase in the Contract Price, Owner shall furnish to Contractor reasonable evidence that adequate financial arrangements have been made by Owner to enable Owner to fulfill the increased financial obligations to be undertaken by Owner as a result of such Change Order.”
ARTICLE 9 - ENGINEER’S STATUS DURING CONSTRUCTION

SC-9.09 Limitations on Engineer’s Authority and Responsibilities

A. Add the following new paragraph immediately after Paragraph 9.09.E:

“F. Resident Project Representative shall be authorized to observe all or any part of the Work, and to observe the preparation or manufacture of materials to be used. In case of any dispute arising between Contractor and Resident Project Representative as to materials furnished or the acceptability of the Work, the Resident Project Representative shall have the authority to disapprove or reject Work which Resident Project Representative believes to be defective, or that Resident Project Representative believes will not produce a completed Project that conforms to the Contract Documents. Resident Project Representative shall not be authorized to stop or suspend Work on the Project. Resident Project Representative shall not be authorized to revoke, alter, enlarge, relax or release any requirements of these Specifications, nor to approve or to accept any portion of the Work, nor issue instructions contrary to the Drawings and Specifications. Resident Project Representative shall in no case act as foreman or perform other duties for Contractor, or interfere with the management of the Work by Contractor. Any advice given by Resident Project Representative to Contractor shall in no circumstances be construed as binding Owner, Engineer, or Engineer’s Consultants in any way or releasing Contractor from fulfillment of the terms of the Agreement.”

ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

SC-11.01 Cost of the Work

A. Add the words “project managers” after the words “general managers,” in Paragraph 11.01.B.1.

SC-11.04 Rental Rates

Add the following new paragraphs immediately after Paragraph 11.03.D.3:

“11.04 Equipment Rental Rates for Extra and Cost-Plus Work

A. For any Contractor-owned machinery, trucks or equipment, or equipment authorized by the Engineer for use the Engineer will allow the Contractor will be allowed a rate that does not exceed the rental rate set forth in the current edition of the “Rental Rate Blue Book”, as published by K III Directory Corporation of San Jose, California (referred to herein as the rental Rate Blue Book). All Rate Adjustment Tables and amendments will be applied. If the Contractor submits a lower rate, it will be accepted by the Engineer.”
1. Should the proper completion of the Work require equipment of a type not covered by the above-mentioned schedule, the Engineer will allow the Contractor a reasonable rental rate based on that prevailing in the area of the Work and shall be incorporated in the Contract before the Work is begun. However, the Contractor must disclose to the Engineer the specific sources of any rates it proposes in this connection.

2. For machinery, trucks or equipment, which the Contractor must obtain by rental, the Contractor shall inform the Engineer of its need to rent the equipment and of the rental rate for that equipment prior to using it on the Work. If that use and rate are acceptable to the Engineer, the Contractor shall be paid the actual rental for the equipment, provided that rate does not exceed the rental rate set forth in the Rental Rate Blue Book, including all Rate Adjustment Tables and amendments. The Contractor shall provide the Engineer with a copy of the paid receipt for the rental expense incurred.

3. The estimated operating cost per hour will apply only to the actual time the equipment is operating. Operators will be paid as stated hereinbefore for labor except for certain trucks listed in the Rental Rate Blue Book as to which trucks said Rental Rate Blue Book indicates that the cost of the operators is included in the pertinent rates.

4. For equipment which is already on the Project, OWNER will pay the applicable hourly rate for the actual time the equipment is assigned to the Cost-Plus Work. The period of assignment for each piece of equipment shall start when the equipment commences to be used for the Work ordered by the Engineer, and shall continue until the time which the Engineer designates for termination of that work.

5. For equipment which has to be brought to the Project exclusively for use on Cost-Plus Work, Owner will pay all loading and unloading costs and all transportation costs to and from the Project Site; provided, however, the cost of return transportation from the Project Site shall not exceed that of moving the equipment to that Site. If such a piece of equipment is self-propelled, and is driven to the Project Site under its own power, then the Owner will pay only operating costs and labor costs for the transportation to and from the Project Site. The Owner will not pay for loading, unloading, and transportation costs, however, if the equipment is used for other than cost-plus work while on the Project Site, with the exceptions stated herein.

6. The Owner will pay the applicable rental rate for a minimum of 8 hours in each 24 hour day, excluding Saturdays, Sundays, and legal holidays during which the Contractor does no work. The daily usage period shall start at the time the Contractor begins to use the equipment for cost-plus work and when the
equipment is released by the Engineer from use for such work. The Owner will make payment to the Contractor at the applicable hourly rate for the actual time the equipment is being used for cost-plus work in excess of the minimum 8 hours per day. If, however, certain pieces of equipment remain idle during any day or portion of a day within such a rental period, the Owner will pay for those periods at 50 percent of the applicable rate (exclusive of operating costs) set forth in the Rental Rate Blue Book.

7. For rented equipment not owned by the Contractor or a subsidiary, affiliate or parent company (no matter how far up the chain of ownership) of the Contractor, the following maximum rates shall apply:

   a. The daily rate per hour shall apply when the equipment is specifically assigned to the Work by the Engineer for a period of 7 consecutive calendar days or less.

   b. The weekly rate per hour shall apply when the assigned time exceeds 7 consecutive calendar days but does not exceed 21 consecutive calendar days.

   c. The monthly rate per hour shall apply when the assigned time exceeds 21 consecutive calendar days.

8. The applicable daily, weekly, or monthly rate will be determined at the expiration of 21 calendar days or upon release of the equipment, whichever occurs first. Interruptions of the rental period, when equipment is used on other than assigned cost-plus work, will not constitute a warrant for a rental rate applicable to shorter periods occasioned by such interruptions.

9. For equipment owned by the Contractor or a subsidiary, affiliate, or parent company (no matter how far up the chain of ownership) of the Contractor, the maximum hourly rate to be used shall be the monthly rate as set forth in the current edition of the Rental Rate Blue Book, including all Rate Adjustment Tables and amendments divided by 176 (176 working hours per month).

10. All equipment used must, in the judgment of the Engineer, be in good working condition and suitable for the purpose intended; and the Engineer reserves the right to determine the size and number of units of equipment to be used. The manufacturer's ratings shall be the basis for all classifications. Trucks will be classified by cubic yard capacity to be determined by water level volume of the body as measured from the length, width, and height, without sideboards.
11. No percentage will be added to the amounts charged for equipment rental, whether based on the Rental Rate Blue Book, including all Rate Adjustment Tables and amendments, or on the agreed-upon rental rates for equipment not covered in the aforesaid schedule.”

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

SC-13.03  Tests and Inspections

A. Delete Paragraph 13.03.B and subparagraphs in their entirety and insert the following in its place:

“B. Contractor shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except as otherwise provided in the Contract Documents.”

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

SC-14.02  Progress Payments

A. Add the following language to the end of Paragraph 14.02.A.2:

“a. Contractor shall include with Application for Payment proof that all employee, subcontractor, and vendor obligations have been met from the previous Progress Payment. Contractor shall submit subcontractor and vendor release forms; and certified payroll reports which include labor classifications, pay rates, and fringe benefit rates for employees.”

SC-14.07  Final Payment

A. Add the following new sentence at the beginning of Paragraph 14.07.A.2:

“All applications for payment, consent of surety and release of liens shall be on the following forms:

AIA Form G702 Application and Certificate for Payment
AIA Form G706A Contractor’s Affidavit of Release of Liens
AIA Form G707 Consent of Surety to Final Payment”

END OF SECTION
DIVISION 1 – GENERAL REQUIREMENTS
SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Project includes the initial phase of repairs and reconstruction of stone walls and other site improvements at War Memorial Park.
   1. Project Location: River Street, West Bridgewater, MA.
   2. Owner: Town of West Bridgewater. A Preservation Restriction is also in place on the subject properties in accordance with an agreement between the Town of West Bridgewater and the Massachusetts Historical Commission dated June 23, 2010.
   3. Phase Work Items: Work items included in this phase of the repairs and improvements to the War Memorial Park, as reviewed and approved by the Massachusetts Historical Commission. Work excluded from the current contract phase has been crossed-out on the Contract Drawings.

   1. The Engineer is:
      Nils Wiberg, P.E., CFM
      Fuss & O'Neill, Inc.
      317 Iron Horse Way, Suite 204
      Providence, RI 02908

C. The Work includes, but is not limited to, repairing and reconstructing stone masonry walls along the internal system of mill races within War Memorial Park; stump removal; installation of permanent erosion and sedimentation controls; surface restoration, and appurtenant rehabilitative work as depicted and noted on the Contract Drawings. Mobilization, construction access, temporary erosion and sedimentation controls, protection of public and temporary control of water shall also be provided in accordance with the Contract Drawings and Specifications. Refer to Division 1 Section “Payment Items” for a description of the general work items covered under each payment item.

D. The Contractor shall maintain the historic integrity of the whole of War Memorial Park, a site listed in the National Register of Historic Places. Replacement materials and constructions methods shall match existing elements and components in accordance with historic preservation best practices, including the Secretary of the Interior’s Standards for the Treatment of Historic Properties and any requirements or stipulations established for the Project by the Massachusetts Historical Commission.

SUMMARY 01100 - 1
F:\P2009\0735\C40\Project Manual\Division 1\01100 Summary.doc
E. Maintain the historic integrity of the Ames Sluice Gate and other park structures. Where called for, provide replacement materials that match existing elements and components. Do not provide modern “off-the-shelf” replacement parts for repairs. Create molds of elements to be repaired or replaced and custom cast replacement parts.

1.2 DEFINITIONS

A. Furnish: Supply and deliver to the project site.

B. Install: Place in position for service or use.

C. Provide: Furnish and install, complete and ready for intended use.

1.3 EXISTING PERMITS

A. Comply with all the requirements of the following permits included in Exhibit A:

   1. Town of West Bridgewater Conservation Commission, Determination of Applicability / Order of Conditions

B. Contact the Owner’s representative to review any or all of the application packages used to obtain the permits listed in Paragraph 1.3.A above.

1.4 ACCESS TO SITE

A. Minimize damage to access routes, and restore damaged areas to their original condition or better.

B. Remove and restore to original condition all walls, fences, structures, utility lines, poles, guy wires, anchors, water control structures and other improvements required to be relocated for construction of the Work. Costs for such activity shall be borne by the Contractor unless otherwise indicated. Notify the Engineer, the Owner, and utilities of intended modification or disruption to their property prior to the start of construction and cooperate with them in the scheduling and performance of operations.

C. If the Contractor, by direct negotiation and bargain with any land owner, lessee or tenant, has secured any right to use more space or greater privileges in the space provided by the Owner for purposes incidental to the performance of the Contract, shall upon request furnish to the Engineer proper evidence that such additional rights have been properly secured and assurance that no damage to or claim upon the Owner or Engineer will arise therefrom. Neither the Owner nor the Engineer shall be liable in any way for any expense incurred by the Contractor in securing any such right to use additional property.

D. The Contractor shall be responsible for and reimburse the Owner and others for any and all losses, damage or expense which the Owner or those others may suffer, either directly or indirectly or through any claims of any person or party, for any trespass outside the spaces and rights of way provided by the Owner to the Contractor or any violation or disregard of the terms and conditions established for the use or occupancy of those rights.
or for negligence in the exercise of those rights. The Owner may retain or deduct from any sum or sums due or to become due to the Contractor such amount or amounts as may be proper to insure the Owner against loss or expense by reason of the failure of the Contractor to observe the limits and conditions of the rights-of-way, rights-of-access, easements, etc., provided by the Owner.

1.5 SITE CONDITIONS

A. Existing site features, including but not limited to, walls, trees, brush, fences, walkways, bridges, monuments, and other structures at the site have been located primarily from information furnished by others and site reconnaissance, and as such the depictions thereof on the Contract Drawings are considered approximate as to size and location. There may be additional structures, features that are not shown on the Contract Drawings. Locate all existing utilities and structures and protect same from damage or harm. Any utilities interfered with or damaged shall be restored at the expense of the Contractor and to the satisfaction of its Owner.

B. Ensure that construction activities do not impact the activities or properties of the Owner and its agents without prior coordination with and consent from these entities.

1.6 DIG SAFE

A. The Contractor shall be responsible for complying with all applicable Dig Safe rules and regulations.

B. Contact Dig Safe at 1-888-344-7233 at least 72 hours prior to the start of construction (excluding weekends and holidays) to mark out the utility locations.

1.7 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "MasterFormat" numbering system.

1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the Table of Contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

   a. The words “shall,” “shall be,” or “shall comply with,” depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 - PRODUCTS

2.1 TEMPORARY STEEL PLATES

   1. Shall be one-inch thick plates, 10-feet wide by 8-feet long.

PART 3 - EXECUTION

3.1 GENERAL

   A. The following is a general recommended sequence of construction operations. Perform wall reconstruction, wall repairs and other elements of the Work during the times and seasons set forth in the authorization granted by the Massachusetts Historical Commission, weather- and condition-permitting. The Contractor shall provide his own detailed construction schedule to the Engineer prior to the initiation of Work. Deviation from Contractor’s schedule will require the Contractor to submit notification of such change in schedule to the Engineer.

   1. Obtain required permits, authorizations and approvals from Federal, State and local authorities, as well as private entities including the Owner, having jurisdiction over the Project. Make required notifications to regulatory authorities. Provide copies of such permits, authorizations, approvals and notifications to the Engineer.

   2. Mobilize to the project Site and establish construction accessways and crossings. Install warning signage, barricades and other measures to exclude public from work areas and accessways during working hours and to protect the work and public during non-working hours.

   3. Install temporary erosion and sedimentation controls and other protective measures to ensure the safety of persons on the site and to mitigate impacts to environmental receptors.

   4. Coordinate with the Owner and Engineer to perform drawdown of the mill race system using the Ames Sluice Gate at the westerly project limits.

   5. Conduct stone masonry wall reconstruction/repair and slope regrading in a logical sequence. Provide temporary construction accesses where and when required to complete the Work, and at each location install and maintain temporary cofferdams and appurtenant water control materials to maintain dry working conditions.
6. Coordinate and sequence stump removal as appropriate so as to not impede the progress of wall reconstruction and repairs.

7. Provide permanent erosion control and stabilization measures, replace timber post and rail fence, and conduct other repairs and improvements as indicated on the Contract Drawings.

8. Perform surface restoration (including minor grading; provision and loam and seed; removing and resetting of timber rail fence and other park features) of all park areas disturbed by the Work.

9. Ensure that the Work is complete and in-place. Remove temporary erosion and sedimentation controls and temporary accesses, and demobilize from project Site.

3.2 PROJECT MEETINGS

A. Pre-construction Conference: Prior to the start of construction, a pre-construction conference may be held with the representatives of the Contractor, Engineer, Owner and other interested parties.

B. Progress Meetings: During progress of the Work, meetings may be required in order that scheduling and overall job coordination can be maintained. The Contractor shall be required to attend these meetings throughout the project duration.

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on the Contract Drawings. If substantive discrepancies are discovered, notify Engineer prior to proceeding with the Work.

B. Site Improvements: Locate and lay out site improvements, including but not limited to, limits of wall reconstruction/repair work items, slope regrading, walkway relocation, stump removal, and erosion control and stabilization measures.

C. Stake out proposed layout of slope and walkway regrading for review and acceptance or correction by the Engineer prior to initiating any Base Bid work.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

3.5 PROGRESS CLEANING

A. General: Clean Project site and work areas daily. Enforce requirements strictly. Dispose of materials lawfully.

1. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 degrees Fahrenheit.
B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

D. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials into sewers or waterways will not be permitted.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with supplier’s written instructions for temperature and relative humidity, where applicable.

3.7 PERMITS

A. Obtain all required local permits required for performance of the work and to furnish temporary facilities, including but not limited to curb cut/road opening permit, dumpster and/or sanitary facility permits, if/as required by respective Town of West Bridgewater officials having jurisdiction.

1. Fees required by inspectors under the jurisdiction of the Town of West Bridgewater Board of Selectmen will be waived. This does not remove the Contractor’s obligation to pull any required permits. Should more than one inspection be required due to a failed inspection, the Contractor shall be solely responsible for paying for any such additional inspection fees.

3.8 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

END OF SECTION
SECTION 01250 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.2 FIELD ORDER

A. Engineer will issue written supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Price or the Contract Time, on EJCDC Form C-942. A sample copy of a Field Order is included at the end of the Section.

1.3 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Price or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Engineer are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.

2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Price and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

c. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Price and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

4. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

5. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

1.4 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Engineer will issue a Change Order for signatures of Owner and Contractor on EJCDC Document C-941.

1.5 WORK CHANGE DIRECTIVE


   1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Price or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive.

   1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ATTACHED FORMS

   1. Proposal Request.
   2. Field Order (EJCDC Form C-942).
   4. Change Order (EJCDC Form C-941).

END OF SECTION
THIS PAGE

IS

INTENTIONALLY

LEFT BLANK
PROPOSAL REQUEST

Proposal Request No. _______

Project: Owner: Owner's Contract No.:

Contract: Date of Contract:

Contractor: Engineer's Project No.:

Please submit an itemized quotation for changes in the Contract Price or Contract Time incidental to the proposed modifications to the Contract Documents described herein.

Description:

Attachments: (List documents supporting description)

____________________________________________________

By: __________________________

____________________________________________________

ENGINEER
**Field Order**

**No. _____**

<table>
<thead>
<tr>
<th>Date of Issuance:</th>
<th>Effective Date:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Project:</th>
<th>Owner:</th>
<th>Owner's Contract No.:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Contract:</th>
<th>Date of Contract:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Contractor:</th>
<th>Engineer's Project No.:</th>
</tr>
</thead>
</table>

**Attention:**

You are hereby directed to promptly execute this Field Order issued in accordance with General Conditions Paragraph 9.05A., for minor changes in the Work without changes in Contract Price or Contract Times. If you consider that a change in Contract Price or Contract Times is required, please notify the Engineer immediately and before proceeding with this Work.

**Reference:**

- (Specification Section(s))
- (Drawing(s) / Detail(s))

**Description:**

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
<table>
<thead>
<tr>
<th>Attachments:</th>
<th>Engineer:</th>
</tr>
</thead>
</table>

**Receipt Acknowledged by (Contractor):**

<table>
<thead>
<tr>
<th>Date:</th>
<th></th>
</tr>
</thead>
</table>

Copy to Owner
Work Change Directive
No. _____

Date of Issuance: ____________________________ Effective Date: ____________________________

Project: ____________________________ Owner: ____________________________ Owner's Contract No.: ____________________________
Contract: ____________________________ Date of Contract: ____________________________
Contractor: ____________________________ Engineer's Project No.: ____________________________

You are directed to proceed promptly with the following change(s):

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Attachments (list documents supporting change):

Purpose for Work Change Directive:

☐ Authorization for Work described herein to proceed on the basis of Cost of the Work due to:

☐ Nonagreement on pricing of proposed change.

☐ Necessity to expedite Work described herein prior to agreeing to changes on Contract.

Estimated change in Contract Price and Contract Times:

Contract Price $ (increase/decrease) Contract Time (increase/decrease) days

If the change involves an increase, the estimated amounts are not to be exceeded without further authorization.

Recommended for Approval by Engineer: ____________________________ Date
Authorized for Owner by: ____________________________ Date
Accepted for Contractor by: ____________________________ Date
Approved by Funding Agency (if applicable): ____________________________ Date:
Change Order

No. __________

<table>
<thead>
<tr>
<th>Date of Issuance:</th>
<th>Effective Date:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Project:</th>
<th>Owner:</th>
<th>Owner's Contract No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract:</td>
<td>Date of Contract:</td>
<td></td>
</tr>
<tr>
<td>Contractor:</td>
<td>Engineer's Project No.:</td>
<td></td>
</tr>
</tbody>
</table>

The Contract Documents are modified as follows upon execution of this Change Order:

Description:

Attachments: (List documents supporting change):

<table>
<thead>
<tr>
<th>CHANGE IN CONTRACT PRICE:</th>
<th>CHANGE IN CONTRACT TIMES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Contract Price:</td>
<td>Original Contract Times:</td>
</tr>
<tr>
<td>$________________________</td>
<td>Substantial completion (days or date): ____________________</td>
</tr>
<tr>
<td></td>
<td>Ready for final payment (days or date): ____________________</td>
</tr>
</tbody>
</table>

[Increase] [Decrease] from previously approved Change Orders No.__________ to No.__________:

| $________________________ |
| Substantial completion (days): ____________________ |
| Ready for final payment (days): ____________________ |

Contract Price prior to this Change Order:

$________________________

[Increase] [Decrease] of this Change Order:

$________________________

Contract Price incorporating this Change Order:

$________________________

Contract Times prior to this Change Order:

Substantial completion (days or date): ____________________

Ready for final payment (days or date): ____________________

[Increase] [Decrease] of this Change Order:

$________________________

Contract Times with all approved Change Orders:

Substantial completion (days or date): ____________________

Ready for final payment (days or date): ____________________
Change Order Instructions

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.
SECTION 01275 – PAYMENT ITEMS

PART 1 - GENERAL

1.1 SUMMARY

   A. This Section describes the measurement and payment for the Work to be completed under each item in the Proposal Form. The descriptions may not reference all of the associated Work. Work specified but not designated as a separate Bid item is considered incidental to all Bid items. The Contractor shall review all work associated with each work item and shall have no claim for being unfamiliar with the requirements of these specifications.

   B. Payment Procedures are described in the Contract, General Conditions and related Documents.

1.2 DEFINITIONS

   A. Payment Items: the Owner's distribution of the Contract Sum through listed work items, as outlined in this Section, reviewed, and accepted by the Engineer.

      1. Each item is specified to include a defined scope of services. The payment items have been established for the Owner's convenience only and, not all materials, labor, equipment, or services of a payment item are guaranteed to be listed, specified or otherwise described herein.

      2. Include costs associated with items of work required to complete the defined scope of services within the appropriately specified payment item.

      3. Payment items include all necessary products, materials, equipment, plus costs for delivery, handling, storage, installation, all applicable fees and taxes (where applicable), administrative over-site, tools, labor, incidentals, research and testing, overhead, and profit.

      4. Add/deduct unit bid price items shall be paid only as accepted and where approved prior to the completion of the respective work.

      5. All work and associated costs described in the Contract Documents shall be included in the payment items described herein.

   B. Unit Price: An amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services identified in the Contract Documents.

   C. Lump Sum: When used as an item of payment, means complete payment for the work prescribed for that portion of the Work under the item, or all work prescribed in the Contract, as the case may be.

      1. Lump sum payment items are groupings of the Work as determined by the Owner only for the Owner's convenience. Such listings of payment items shall establish the minimum level of detail for the Schedule of Values.
2. Alternate lump sum payment items shall be accepted in any order or combination, at the sole discretion of the Town of West Bridgewater at contract award, subject to add/deduct unit price adjustments conforming to the actual quantity of work completed.

D. Complete In Place: When used in the measurement and payment provisions, means the completion of the contract item, including the furnishing of all materials, equipment, tools, labor, health and safety requirements, and work incidental thereto.

1.3 PROCEDURES

A. To ensure payment items are balanced, Mobilization/Demobilization for the base bid and alternate bids shall be limited to no more than five (5) percent of the total bid price for the base bid or alternative bid item, respectively. Such limit will not be prohibit the Contractor from seeking payment for documented expenditures (i.e., invoices or cancelled checks) in excess of this amount under other bid items during project startup and mobilization.

B. Add/deduct unit prices and lump sum items include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

C. Measurement and Payment: Refer to the Schedule of Payment Items at the end of this Section for the method of measurement and payment.

D. Notify Engineer at least 72-hours prior to the time at which necessary measurements must be taken. Notification must be in advance of obscuring pay item; do not proceed until such measurements have been taken in the presence of the Engineer.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL

A. The payment items listed below identify the major components of work identified and specified in the Contract Documents. Work that is not specifically called out within an individual payment item but is inherently required to complete the Work shall be considered as a part of that payment item.

B. The payment items listed below include references to Specification Sections of work to be completed under the payment item, however not all Sections of related work are guaranteed to be listed. Specification Sections are referenced below for the convenience of the Contractor only and are not intended to identify the sole or complete location of specified work required under the payment item.
3.2 BASE BID AND ALTERNATE BID PAYMENT ITEMS

A. Base Bid and Alternate Lump Sum payment items are listed below, corresponding to repair activities indicated for respective portions of the project site on the Contract Drawings. These items include the stated quantities of respective add/deduct unit bid price items as stated on the bid form:

1. Base Bid Lump Sum Bid: South Mill Race Wall Reconstruction and Repair (CS-102)
2. Alternate Lump Sum Bid Item Alt-1: South Mill Race – North Mill Race Junction Wall Reconstruction and Repair (CS-102 & CS-103)
3. Alternate Lump Sum Bid Item Alt-2: Foundation Area Wall Reconstruction (CS-108)
4. Alternate Lump Sum Bid Item Alt-3: North Mill Race Wall Reconstruction (CS-106)
5. Alternate Lump Sum Bid Item Alt-4: North Mill Race Wall Reconstruction (CS-106)
6. Alternate Lump Sum Bid Item Alt-5: South Mill Race Wall Reconstruction (CS-104)
7. Alternate Lump Sum Bid Item Alt-6: North Mill Race Wall Repair (CS-106)
8. Alternate Lump Sum Bid Item Alt-7: North Mill Race Wall Reconstruction (CS-106)
9. Alternate Lump Sum Bid Item Alt-8: North Mill Race Wall Reconstruction and Repair (CS-106)
10. Alternate Lump Sum Bid Item Alt-9: South Mill Race Wall Reconstruction (CS-104)

B. Reference Section 01100 Summary and other applicable Division 1 and higher Sections. All work shall include, but not be limited to, the following components, as applicable, with respective repair activities selected by the Owner for inclusion in the Contract.

1. Furnishing and placing products and materials for items of work indicated on the Contract Drawings for respective Base Bid and Alternate Bid Price Items, including, but not limited to, the following:
   a. Furnishing and installing topsoil and seed for restoration of disturbed areas behind repaired wall sections, or otherwise disturbed by contraction access or control of water activities.

2. Mobilization and Demobilization including, but not limited to, the following:
   a. Mobilization of all equipment, materials, temporary facilities/controls, warning signs/barricades required to protect the public from work areas, and other items necessary to complete the Work to the Site;
   b. Demobilization of all equipment, materials, temporary facilities/controls, and other items mobilized to the site for execution of the Work.
   c. Contractor's general requirements for completing the work, including temporary measures not specified elsewhere and miscellaneous costs associated with the Work including incidentals not stated herein.

3. Site Access, Safety and Security including, but not limited to, the following:
a. Provision of temporary construction accesses with appropriate barricades, warning signs and other protective measures necessary to complete the Work at locations throughout the site, capable of safely supporting all equipment, materials and other items conveyed along or across the access and protecting the public at all times during the project;

4. Site Access Across Arch Street Bridge including, but not limited to, the following:
   a. Provision, installation, maintenance and removal of 10’ x 8’ x 1” steel places across the Arch Street Bridge to safely support construction equipment during the project, if Contractor requires use of this bridge for access to areas of the site corresponding to any Alternate Bid items selected by the Owner in the portion of the park adjacent to the Town River or at the Stone Bridge.

5. Temporary Channel Crossing including, but not limited to, the following:
   a. Provision, installation, maintenance, and removal of temporary bridges to cross channels for access in support of construction activities at respective portions of the site.

6. Temporary Erosion and Sedimentation Control including, but not limited to, the following:
   a. Provision, installation, and maintenance of Baled Hay Erosion Checks at the locations indicated on the Contract Drawings, including removal and disposal of accumulated sediments, resetting and/or of any faulty or ineffective installations, and replacement of hay bales as required.
   b. Provision, installation, and maintenance of construction entrances, temporary scour protection, temporary erosion and sedimentation controls encompassing stockpiles, and other provisions as may be required to protect adjacent wetlands and watercourses, including removal and disposal of accumulated sediments, resetting and/or of any faulty or ineffective installations, and replacement controls as required to ensure proper function.
   c. Provision, installation, and maintenance of controls for treatment of dewatering discharges from excavations where required, including the proper installation, use, and maintenance of temporary dewatering discharge basin(s);
   d. Removal and disposal of all controls upon completion of the work;
   e. Grading and restoration of areas where temporary erosion and sedimentation controls have been installed, to the satisfaction of the Engineer.

7. Control of Water including, but not limited to, the following:
   a. Coordination with the Town of West Bridgewater for removal/insertion of weir boards at the dam spillway upstream of the project site, to control water levels in the Town River.
   b. Installation of weir boards and additional sand bags if required at Ames Sluice Gate for drawdown of water within system of mill races where work is to occur.
c. Installation, maintenance, resetting, and removal of water control system at active wall repair work areas, including sandbag cofferdams and bypass flow pipes.

d. Provision of additional water control measures as required to protect elements of the Work in progress during periods of high flows;

e. Provision of additional personnel, equipment, and other measures during periods of heavy rainfall and in advance of flood watches/warnings.

f. Removal and disposal of any accumulated debris and sediment at cofferdams, pipes and other controls.

8. Surface Restoration including, but not limited to, the following:

a. Removing, stockpiling, and resetting existing timber rail fence, monuments, and other park elements as indicated on the Contract Drawings and where required for the execution of other Items of the Work (including, but not limited to: tree removal, wall reconstruction);

b. Provision and grading topsoil and seed on all natural surfaces disturbed through the execution of other items of the Work (e.g. tree removal, wall reconstruction);

c. Installing loam and seed and establishing stable vegetation.

d. Provision of miscellaneous measures including soil amendments, mulches, and/or erosion-control blankets as required to ensure the establishment of satisfactory lawns.

C. Measurement and Payment:

1. Measurement: As measured by the Engineer, pro-rated with the Contractor’s progress of work in constructing respective items of work.

2. Payment: Work for respective bid items will be paid for on a Lump Sum basis, subject to additions or deductions corresponding to the actual quantity of respective add/deduct unit bid price items, complete and in place, as accepted by the Engineer.

3.3 ADD/DEDUCT UNIT BID PAYMENT ITEMS

A. Add/Deduct Unit Bid payment items are listed below, corresponding to repair activities indicated for respective portions of the project site on the Contract Drawings.

1. Wall Reconstruction

a. Reference Section 04902 – Stone Masonry Restoration; Section 02260 – Excavation Support and Protection; Section 02300 – Earthwork; Section 02925 – Surface Restoration; Section 02245 Control of Water

b. Wall Reconstruction includes, but is not limited to, the following:

1) Retaining a qualified Historic Mason for the oversight, submittal preparation; and execution of all work under this Item;
2) Preparation of submittals, including photographs, shop drawings, and mockups for review and approval as required prior to the execution of work under this Item;

3) Rebuilding existing stone retaining walls, abutments, and foundations laid in dry or mortared joints, as indicated on the Contract Drawings or where directed by the Engineer;

4) All appurtenant work as specified, indicated on the Contract Drawings, or otherwise required for the complete and accepted execution of Wall Reconstruction, including but not limited to: deconstruction and removal of existing wall stones, stockpiling of stones within active work area, reclamation of fallen stones, provision of new stone materials as required, excavation for reconstruction work including installation of compacted base, provision of excavation support and protection; installation of filter fabric, and backfilling and compaction using materials indicated.

5) Walls that are six feet or less to be completed with a compacted gravel base.
   a) Preparation of submittals, including photographs, shop drawings, and mockups for review and approval as required prior to the execution of work under this Item;

   c. Measurement: As measured per each square foot of exposed vertical wall face damaged and subject to reconstruction, measured from the bottom of exposed wall along the millrace channel or edge of river to the top of wall at each point along the repair area, prior to initiation of any repair work under this item.

      1) Such measurement shall be by the Contractor in the presence of the Engineer, notification for which shall be at least 72-hours prior to such measurement.

      2) All such survey measurements shall be clearly depicted on a scaled site plan, with supporting computations provided in electronic (spreadsheet) or otherwise in hard copies, and preconstruction photographs as requested by the Engineer. All plans and computations shall be certified as accurate by an Officer of the Contractor's corporation and transmitted for the Engineer's review and recommendation for payment.

      3) Areas repaired or otherwise temporarily dismantled outside areas depicted on the Contract Drawings for repair, or otherwise not instructed in writing by the Engineer, shall not be included in any measurement, and where the Engineer determines that such area(s) have been included in any measurement, such correction as deemed appropriate by the Engineer shall be applied under its recommendation for payment.
d. Payment: Wall Reconstruction will be paid for by the square foot of exposed vertical wall face damaged and subject to reconstruction, as accepted, complete in place.

2. Chink Wall Along Base:
   b. Chink Wall Along Base includes, but is not limited to, the following:
      1) Retaining a qualified Historic Mason for the oversight, submittal preparation; and execution of all work under this Item;
      2) Preparation of submittals, including photographs, shop drawings, and mockups for review and approval as required prior to the execution of work under this Item;
      3) Chinking of any voids greater than four inches in any two dimensions with approved stone materials as indicated on the Contract Drawings (Chink Wall; Chink Wall along Base) or where directed by the Engineer.
   c. Measurement: As measured per each square foot of exposed vertical wall face damaged and subject to reconstruction, measured from the bottom of exposed wall along the millrace channel or edge of river to the top of wall at each point along the repair area, prior to initiation of any repair work under this item.
      1) Such measurement shall be by the Contractor in the presence of the Engineer, notification for which shall be at least 72-hours prior to such measurement.
      2) All such survey measurements shall be clearly depicted on a scaled site plan, with supporting computations provided in electronic (spreadsheet) or otherwise in hard copies, and preconstruction photographs as requested by the Engineer. All plans and computations shall be certified as accurate by an Officer of the Contractor’s corporation and transmitted for the Engineer’s review and recommendation for payment.
      3) Areas repaired or otherwise temporarily dismantled outside areas depicted on the Contract Drawings for repair, or otherwise not instructed in writing by the Engineer, shall not be included in any measurement, and where the Engineer determines that such area(s) have been included in any measurement, such correction as deemed appropriate by the Engineer shall be applied under its recommendation for payment.
   d. Payment: Chink Wall will be paid for by the square foot of vertical wall face damaged and to be chinked, as accepted, complete in place.

3. Chink Wall:
   b. Chink Wall includes, but is not limited to, the following:
1) Retaining a qualified Historic Mason for the oversight, submittal preparation; and execution of all work under this Item;

2) Preparation of submittals, including photographs, shop drawings, and mockups for review and approval as required prior to the execution of work under this Item;

3) Chinking of any voids greater than four inches in any two dimensions with approved stone materials as indicated on the Contract Drawings (Chink Wall; Chink Wall along Base) or where directed by the Engineer.

c. Measurement: As measured per each square foot of exposed vertical wall face damaged and subject to reconstruction, measured from the bottom of exposed wall along the millrace channel or edge of river to the top of wall at each point along the repair area, prior to initiation of any repair work under this item.

   1) Such measurement shall be by the Contractor in the presence of the Engineer, notification for which shall be at least 72-hours prior to such measurement.

   2) All such survey measurements shall be clearly depicted on a scaled site plan, with supporting computations provided in electronic (spreadsheet) or otherwise in hard copies, and preconstruction photographs as requested by the Engineer. All plans and computations shall be certified as accurate by an Officer of the Contractor’s corporation and transmitted for the Engineer’s review and recommendation for payment.

   3) Areas repaired or otherwise temporarily dismantled outside areas depicted on the Contract Drawings for repair, or otherwise not instructed in writing by the Engineer, shall not be included in any measurement, and where the Engineer determines that such area(s) have been included in any measurement, such correction as deemed appropriate by the Engineer shall be applied under its recommendation for payment.

d. Payment: Chink Wall will be paid for by the square foot of vertical wall face damaged and to be chinked, as accepted, complete in place.

4. Reset Missing Stones:
   b. Reset Missing Stones includes, but is not limited to, the following:
      1) Retaining a qualified Historic Mason for the oversight, submittal preparation; and execution of all work under this Item;
      2) Preparation of submittals, including photographs, shop drawings, and mockups for review and approval as required prior to the execution of work under this Item;
      3) Resetting of missing stones as indicated on the Contract Drawings (Reset Missing Stones; Reset Missing Stones along Base) or where
directed by the Engineer, using stones reclaimed from the mill race, raceway, or sluiceway and where required approved stone materials furnished by the Contractor and delivered/installed at the site.

c. Measurement: As measured per each square foot of exposed vertical wall face damaged and subject to reconstruction, measured from the bottom of exposed wall along the millrace channel or edge of river to the top of wall at each point along the repair area, prior to initiation of any repair work under this item.

1) Such measurement shall be by the Contractor in the presence of the Engineer, notification for which shall be at least 72-hours prior to such measurement.

2) All such survey measurements shall be clearly depicted on a scaled site plan, with supporting computations provided in electronic (spreadsheet) or otherwise in hard copies, and preconstruction photographs as requested by the Engineer. All plans and computations shall be certified as accurate by an Officer of the Contractor’s corporation and transmitted for the Engineer’s review and recommendation for payment.

3) Areas repaired or otherwise temporarily dismantled outside areas depicted on the Contract Drawings for repair, or otherwise not instructed in writing by the Engineer, shall not be included in any measurement, and where the Engineer determines that such area(s) have been included in any measurement, such correction as deemed appropriate by the Engineer shall be applied under its recommendation for payment.

d. Payment: Reset Missing Stones will be paid for by the square foot of vertical void area damaged and to be repaired, as accepted, complete in place.

5. Reset Top Stones:


b. Reset Stones includes, but is not limited to, the following:

1) Retaining a qualified Historic Mason for the oversight, submittal preparation; and execution of all work under this Item;

2) Preparation of submittals, including photographs, shop drawings, and mockups for review and approval as required prior to the execution of work under this Item;

3) Resetting of missing top stones as indicated on the Contract Drawings or where directed by the Engineer, using stones reclaimed from the mill race, raceway, or sluiceway and where required approved stone materials furnished by the Contractor and delivered/installed at the site.

c. Measurement: As measured per linear foot of wall section to be repaired, prior to initiation of any repair work under this item.
1) Longitudinal measurements for area computations will be made horizontally as planimetric projections onto a surveyed site plan, shall not include adjustments for projections onto sloped surfaces.

2) Such measurement shall be by the Contractor in the presence of the Engineer, notification for which shall be at least 72-hours prior to such measurement.

3) All such survey measurements shall be clearly depicted on a scaled site plan, with supporting computations provided in electronic (spreadsheet) or otherwise in hard copies and preconstruction photographs as requested by the Engineer. All plans and computations shall be certified as accurate by an Officer of the Contractor’s corporation and transmitted for the Engineer’s review and recommendation for payment.

4) Lengths installed outside areas depicted on the Contract Drawings or otherwise not instructed in writing by the Engineer shall not be included in any measurement, and where the Engineer determines that such area(s) have been included in any measurement, such correction as deemed appropriate by the Engineer shall be applied under its recommendation for payment.

d. Payment: Reset Top Stones will be paid for by the linear foot of placed top stones damaged and to be repaired, as accepted, complete in place.

6. Excavate Stump includes, but is not limited to, the following:
   a. Removal and disposal of tree stump;
   b. Excavation and removal of root ball and roots to the required extents;
   c. Removal and disposal of roots and other plant matter/debris.
   d. Restoring disturbed areas, including furnishing/placing topsoil and seed to establish stable vegetation.
   e. Measurement: As measured per each stump removed, as accepted by the Engineer.
   f. Payment: Excavate Stump will be paid for per each stump removed.

7. Grind Stump includes, but is not limited to, the following:
   a. Grinding and removal of stump, root ball, roots and other plant matter/debris to the required extents;
   b. Restoring disturbed areas, including furnishing/placing topsoil and seed to establish stable vegetation.
   c. Measurement: As measured per each stump removed, as accepted by the Engineer.
   d. Payment: Grind Stump will be paid for per each stump removed.
SECTION 01290 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES

Coordination: Coordinate preparation of the Schedule of Values for Bid items with preparation of Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following, if required by the Owner:
   a. Application for Payment forms with Continuation Sheets (AIA Form G703).
   b. Submittals/Shop Drawings Schedule.

2. Submit three copies of the Schedule of Values to Engineer 10 days after effective date of Agreement. No payment will be made to Contractor before Schedule of Values has been submitted and accepted by Engineer.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the Schedule of Values:
   a. Project name and location.
   b. Name of Engineer.
   c. Engineer's project number.
   d. Contractor's name and address.
   e. Date of submittal.

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
   a. Related Specification Section or Division.
   b. Description of the Work.
   c. Change Orders (numbers) that affect value.
   d. Dollar value.
1) Percentage of the Contract Price to nearest one-hundredth percent, adjusted to total 100 percent.

3. Provide a breakdown of the Contract Price in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.

4. Round amounts to nearest whole dollar; total shall equal the Contract Price.

5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
   a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.

6. Where items are not broken down sufficiently to accurately determine the value of Work completed, Engineer will estimate the value of the Work completed and deduct a conservative value that will allow the Owner to easily complete the Work with the unpaid balance.
   a. When the required detail in the Schedule of Values is not provided by the Contractor, the Contractor agrees to accept the Engineer’s determination.

7. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

8. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Work Change Directives result in a change in the Contract Sum.

1.3 SCHEDULE OF PAYMENTS

A. Coordination: Coordinate preparation of the Schedule of Payments with preparation of Contractor's Construction Schedule and Schedule of Values.
   1. Such schedule shall be broken down by monthly pay period through Project completion and reflect items listed in the Schedule of Values.
   2. Submit three copies of the Schedule of Payments to Engineer 10 days after effective date of Agreement.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
1. Initial/Monthly Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is the 15th day of each month. The period covered by each Application for Payment starts on the day following the end of the preceding period and ends 15 days before the date for each progress payment.

C. Payment Application Forms: AIA Document G 702 or an approved equal.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.
   1. Entries shall match data on the Schedule of Values and Contractor’s Construction Schedule. Use updated schedules if revisions were made.
   2. Include amounts of Change Orders and Work Change Directives issued before last day of construction period covered by application.
   3. Itemized data and format provided on continuation sheets shall include schedules, line items, values as stipulated in the Schedule of Values as accepted by Owner.
      a. Continuation sheets shall include a total list of all scheduled component items of work with item number and scheduled dollar value for each item. Dollar values to be included in each column for each scheduled line item when Work has been performed or products stored. Round off values to nearest dollar or as may be specified for Schedule of Values.
      b. List each Change Order executed prior to date of submission at end of continuation sheets. List by Change Order number and description as to original component item of Work.

E. Transmittal: Submit three (3) signed and notarized original copies of each Application for Payment to Engineer with accompanying release of lien and certified payroll forms.
   1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
   2. Submit Applications to Engineer by means ensuring receipt within 24 hours.
   3. Product Ownership: All Work covered by Progress Payments shall, at the time of payment, become the property of the Owner.

F. Ownership: All Work covered by Progress Payments shall, at the time of payment, become the property of Owner.

G. Processing: With each Application for Payment the Contractor shall certify such Application for Payment represents a just estimate of costs reimbursable to Contractor under terms of the Contract and shall certify there are no Mechanic’s or Materialmen’s
Liens outstanding at the date of that Application for Payment, that all due and payable bills with respect to the Work have been paid to date or shall be paid from the proceeds of that Application for Payment, that there is no known basis for the filing of any Mechanic’s or Materialmen’s Lien against the Surety in connection with the Work, that Waivers and Bills Paid Affidavit forms from all Subcontractors and Materialmen have been, or will be, obtained in the form agreeable to the Owner, and that amount of the contract remaining to be expended is sufficient to complete the project.

H. Waivers and Mechanics Liens

1. Monthly Applications for Payment shall include Waivers of Mechanic’s Liens and Claims for all Work included in the period of construction covered by the Application for Payment and the previous month’s Application. Waivers of Liens and Claims from Subcontractors or Subcontractors and suppliers shall include the period of construction covered by the Application for Payment, the total amount paid prior to and including the previous month’s Application.

2. Partial Waivers of Liens shall be submitted on each item of work for the amount requested, prior to deduction for retainage, for each item.

3. Contractor shall submit final or full Waivers of Liens and Claims for completed items of work shown on the monthly Application for Payment.

4. Owner reserves the right to designate which entities involved in the Work must submit Waivers of Liens.

5. The Contractor’s final Application for Payment shall be submitted with, or preceded by final Waivers from every entity involved with the performance of work, supplying of materials or the providing of professional services covered by the Application who could lawfully be entitled to a Lien.

6. Waivers of Liens shall be provided on forms, and executed in a manner acceptable to the Owner.

I. Prevailing Wages

1. Monthly Applications for Payment shall include certified prevailing wage forms for all Contractor’s applicable employees, and applicable subcontractor employees, corresponding to the payment period for the subject Application for Payment.

2. The Owner reserves the right to withhold payment for missing, incomplete or inaccurate certified payroll forms.

3. It is the Contractor’s sole responsibility to provide full and complete forms for its employees and subcontractors corresponding to the payment period and respective work items addressed by the application. Failure to comply with this requirement shall not be cause for any cessation of work.

J. Initial/Monthly Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following, which shall be updated for Monthly Applications for Payment, as applicable:
1. Schedule of Values.
2. Contractor's Construction Schedule (preliminary if not final), updated monthly.
3. Schedule of unit prices.
4. Submittals Schedule (preliminary if not final).
5. Name of Contractor Superintendent.
6. Copies of authorizations and licenses from governing authorities for performance of work.
7. Any material stored off site must carry additional insurance (All Risk Ryder) stating Owner as insured. All material is to be inspected by Engineer personnel before billing can be approved. Bill of Sale and receipts for items being billed at cost only are required and 25% retainage will be held for off-site stored materials. Paperwork must accompany request two weeks prior to billing to insure adequate time to schedule inspection.
9. Certificates of insurance and insurance policies.

K. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
   1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
   2. Submit Warranties and maintenance agreements, as applicable.
   3. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

L. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
   1. Evidence of completion of Project closeout requirements.
   2. Completion of items specified by the Engineer for correction after Substantial Completion.
   3. Required Project Records including permit drawings, as constructed drawings both on hard copy and in electronic format.
   4. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
   5. Updated final statement, accounting for final changes to the Contract Sum.
8. AIA Document G707, “Consent of Surety to Final Payment.”
9. List of unsettled claims, if any.
10. Evidence that claims have been settled, if any.
11. Final, liquidated damages settlement statement, if any.
12. Removal of all temporary facilities and services
13. Removal of all surplus materials, rubbish, and similar elements.

1.5 CHANGE PROCEDURES

A. See Section 01250 - Contract Modification Procedures.

1.6 DEFECT ASSESSMENT

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

B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct an appropriate remedy or adjust payment.

C. The defective Work may remain, but the unit sum will be adjusted to a new sum at the discretion of the Engineer.

D. The defective Work will be partially repaired to the instructions of the Engineer, and the unit sum will be adjusted to a new sum at the discretion of the Engineer.

E. The individual Specification Sections may modify these options or may identify a specific formula or percentage sum reduction.

F. The authority of the Engineer to assess the defect and identify a payment adjustment, is final.

G. Non-Payment for Rejected Products: Payment will not be made for rejected products for any of the following:

1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from the transporting vehicle.
4. Products placed beyond the lines and levels of the required Work.
5. Products remaining on hand after completion of the Work.
PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION
SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations for the Project including, but not limited to, the following:
   1. General Project coordination procedures.
   2. Coordination Drawings.
   3. Administrative and supervisory personnel.
   4. Project meetings.

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 1 Section “Summary” for preparing and submitting the Contractor's Construction Schedule.
   2. Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
   3. Division 1 Section "Closeout Procedures" for coordinating Contract closeout.

1.3 COORDINATION

A. Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
   1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
   2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.
B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Project closeout activities.

1.3 SUBMITTALS

A. Staff Names: Within five days of starting construction operations, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Insert special requirements that exceed requirements contained in the General and Supplementary Conditions for superintendent and assistants.

1.4 PROJECT MEETINGS

A. General: Engineer will schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Engineer will inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
2. Agenda: Engineer will prepare the meeting agenda and distribute the agenda to all invited attendees.
3. Minutes: Engineer will record significant discussions and agreements achieved, and distribute the meeting minutes to everyone concerned, including Owner, within 10 days of the meeting.

B. Preconstruction Conference: Engineer will schedule a preconstruction conference before start of construction, at a time convenient to Owner, Contractor, and Engineer, but no
later than 15 days after execution of the Agreement. Conference will be held at Project Site
as indicated on Invitation to Bid.

1. Attendees: Authorized representatives of Owner, Engineer, and their consultants;
and Contractor and its superintendent; shall attend the conference. All participants
at the conference shall be familiar with Project and authorized to conclude matters
relating to the Work.

2. Agenda: Discuss items of significance that could affect progress, including the
following:
   a. Tentative construction schedule.
   b. Critical work sequencing.
   c. Designation of responsible personnel.
   d. Procedures for processing field decisions and Change Orders.
   e. Procedures for processing Applications for Payment.
   f. Distribution of the Contract Documents.
   g. Submittal procedures.
   h. Preparation of Record Documents.
   i. Use of the premises.
   j. Responsibility for temporary facilities and controls.
   k. Parking availability.
   l. Office, work, and storage areas.
   m. Equipment deliveries and priorities.
   n. First aid.
   o. Security.
   p. Progress cleaning.
   q. Working hours.
   r. Historical and environmental requirements (MHC and Conservation
      Commission)

3. Execution of Owner-Contractor Agreement including executed bonds and insurance
certificates may be completed immediately prior to pre-construction conference.

C. Progress Meetings: Engineer will conduct progress meetings at intervals to be defined by
the Engineer.

1. Attendees: In addition to representatives of Owner and Engineer, each contractor,
subcontractor, supplier, and other entity required to finalize discussions regarding
current progress or involved in planning, coordination, or performance of future
activities shall be represented at these meetings. All participants at the conference
shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
   a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
   b. Review present and future needs of each entity present, including the following:
      1) Interface requirements.
      2) Sequence of operations.
      3) Status of submittals.
      4) Deliveries.
      5) Access.
      6) Temporary facilities and controls.
      7) Work hours.
      8) Hazards and risks.
      9) Progress cleaning.
      10) Quality and work standards.
      11) Change Orders.
      12) Documentation of information for payment requests.

3. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
   a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION
SECTION 01330 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

B. Related Sections include the following:

1. Division 1 Section “Closeout Procedures” for submitting warranties Project Record Documents and operation and maintenance manuals.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Engineer's responsive action.

B. Informational Submittals: Written information that does not require Engineer's approval. Submittals may be rejected for not complying with requirements.

C. Addresses: Include mailing address, telephone number, facsimile number, and e-mail address.

1.4 SUBMITTAL PROCEDURES

A. Master List Submittal: Submit a master list of the required submittals with a proposed date for each item to be submitted. Show the date submittal was sent, days since submittal was sent, status of submittal, date submittal was received in return, and any date associated with resubmittals. Update master list with each submission and response. Issue copy of master list at least monthly to the Architect.

B. General: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Engineer for Contractor's use in preparing submittals, unless requested to by the Contractor.

C. Method of Transmitting Submittals: Electronic transmission of submittals, including a facsimile and e-mail process, will not be allowed.
D. Clarity: Provide neat, clean and legible printed materials that can be easily reproduced by normal photocopying or blueprinting process. Illegible submittals will be returned unreviewed.

E. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
   2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
      a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

F. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal.
   1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
   2. Concurrent Review: Where concurrent review of submittals by Engineer's consultants, the Owner, or other parties is required, allow 30 days for initial review of each submittal.
   3. If intermediate submittal is necessary, process it in same manner as initial submittal.
   4. Allow 15 calendar days for processing each resubmittal.
   5. No extension of the Contract Time or claims for delay will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.

G. Identification: Place a permanent label or title block on each submittal for identification.
   1. Indicate name of firm or entity that prepared each submittal on label or title block.
   2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
   3. Include the following information on label for processing and recording action taken:
      a. Project name.
      b. Date.
      c. Name and address of Engineer.
      d. Name and address of Contractor.
      e. Name and address of subcontractor.
f. Name and address of supplier including name and telephone number of contact.
g. Name of manufacturer including name and telephone number of contact.
h. Unique identifier, including revision number.
i. Number and title of appropriate Specification Section.
j. Drawing number and detail references, as appropriate.
k. Other necessary identification.

H. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals. Provide list or narrative of deviations on Submittal Transmittal form.

I. Additional Copies: Unless additional copies are required for final submittal, and unless Engineer observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.
1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Engineer.
2. Additional copies submitted for maintenance manuals will be marked with action taken and will be returned.

J. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will return submittals, without review received from sources other than Contractor.
1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.
3. Transmittal Form: Use sample form at end of Section.

K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

L. Use for Construction: Use only final submittals with mark indicating action taken by Engineer in connection with construction.
1.5 QUALITY ASSURANCE

A. Where “Standard Specifications” is used, it shall mean the “State of Massachusetts Department of Transportation, Standard Specifications for Highways and Bridges, 1988 English Edition” and all Supplemental Specifications thereto.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

1. Number of Copies: Submit five copies of each submittal, unless otherwise indicated. Mark up and retain one returned copy as a Record Document.

   a. Submit a preliminary single copy of each submittal where selection of options, color, pattern, texture, or similar characteristics is required. Engineer will return submittal with options selected.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.

2. Mark each copy of each submittal to show which products and options are applicable.

3. Include the following information, as applicable:

   a. Manufacturer's written recommendations.
   b. Manufacturer's product specifications.
   c. Manufacturer's installation instructions.
   d. Standard color charts.
   e. Manufacturer's catalog cuts.
   f. Standard product operating and maintenance manuals.
   g. Compliance with recognized trade association standards.
   h. Compliance with recognized testing agency standards.
   i. Application of testing agency labels and seals.
   j. Notation of coordination requirements.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Include the following information, as applicable:
   a. Dimensions.
   b. Identification of products.
   c. Fabrication and installation drawings.
   d. Roughing-in and setting diagrams.
   e. Shopwork manufacturing instructions.
   f. Templates and patterns.
   g. Schedules.
   h. Design calculations.
   i. Compliance with specified standards.
   j. Notation of coordination requirements.
   k. Notation of dimensions established by field measurement.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.

D. Samples: Prepare physical units of materials or products, including the following:

1. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Include cost and wearing capability of each color and pattern.

2. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

3. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Engineer's sample where so indicated. Attach label on unexposed side that includes the following:
   a. Generic description of Sample including type, quality or grade designation.
   b. Product name or name of manufacturer.
   c. Sample source.
   d. Name of Project.
   e. Name of Contractor or subcontractor.
4. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, provide the following:
   a. Size limitations.
   b. Compliance with recognized standards.
   c. Availability.
   d. Delivery time.

5. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
   a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least two sets of paired units that show approximate limits of the variations.
   b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, detail’s of assembly, connections, operation, and similar construction characteristics.

6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise not designated as the Owner's property, are the property of Contractor.

E. Product Schedule or List: Prepare a written summary indicating types of products required for the Work and their intended location.

F. Delegated-Design Submittal: Comply with requirements in Division 1 Section “Quality Requirements.”

G. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
   1. Name, address, and telephone number of entity performing subcontract or supplying products.
   2. Number and title of related Specification Section(s) covered by subcontract.
   3. Drawing number and detail references, as appropriate, covered by subcontract.
2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.
   1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated.
   2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
   3. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements."

B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of engineers and the Owner's, and other information specified.

C. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.

D. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.

E. Material or Product Certificates: Prepare written statements on manufacturer's letterhead certifying that material or product complies with requirements. Use attached sample Material Certificate, or provide certificate that includes the following information.
   1. Project to which material is consigned.
   2. Name of contractor receiving material.
   3. Item number and description of material.
   4. Quantity of material represented by the certificate.
   5. Means of identifying consignment including label, marking, or lot number.
   6. Date and method of shipment.
   7. Signature of Supplier’s authorized agent.

F. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
G. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

H. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.

I. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment (e.g. for beaver deceiving fencing and access hatches for box culvert structures). Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:

1. Preparation for installation.
2. Sequence of installation or erection.
3. Required installation tolerances.
4. Required adjustments.
5. Recommendations for cleaning, maintenance, and protection.

J. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

K. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures."

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark each copy of each submittal with approval stamp before submitting to Engineer.

B. Approval Stamp: Stamp each submittal with a uniform approval stamp.

C. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents. See attached Submittal Transmittal for sample of statement.
3.2 ENGINEER'S ACTION

A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and submittal transmittal and will return them without action.
   1. Engineer may elect not to review partial or incomplete submittals and will return such submittals with no action taken.

B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
   1. Furnish as Submitted: Submittal appears to conform to Contract Documents and Contractor may proceed with ordering and installation.
   2. Furnish as Noted: Same as “Furnish as Submitted” accept that the Contractor must comply with modifications or notes added to the submittal by the Engineer.
   3. Rejected: Submittal must be revised and resubmitted.

C. Informational Submittals: Engineer will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.

D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION
To: Fuss & O'Neill, Inc.  
317 Iron Horse Way, Suite 204  
Providence, RI 02908  
ATTN: Rachael Weiter, E.I.T.

From: [specific name]

PROJECT: ___________________________ SUBMITTAL NO.: ___________________________

(List Section No., Article No., Paragraph)  
(Revision: 1st, 2nd, 3rd, etc.)

Transmitted herewith for review and comment are the following:

<table>
<thead>
<tr>
<th>Copies</th>
<th>Dwg. No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MANUFACTURER / SUPPLIER

Name: ___________________________  
Address: ___________________________

Telephone No.: ____________________ Facsimile No.: ____________________

For Additional Information, Contact: ___________________________

E-mail Address: ___________________________

I hereby certify that I have carefully examined the enclosed submittal and have determined and verified all field measurements, construction criteria, materials, catalog numbers and similar data, coordinated the submittal with other submissions and the work of other trades and contractors, and that to the best of my knowledge and belief, the enclosed submittal is in full compliance with the Contract Documents, except for the following deviations:

BY: ___________________________

Signature: ___________________________

Title: ___________________________
WE HEREBY CERTIFY THAT

(Date: ______________________)

(Description, Kind of Material, Product Name, Model No.)

FURNISHED TO

(Name of Contractor) (Prime or Subcontractor)

FOR USE ON

(Project Name)

OWNER

(Project Owner)

IDENTIFIED BY:

(Label, Marking, Seal No., Consignment, or Waybill No.)

SHIPPED VIA:

(Method of Shipment, Car No., Truck No.)

SHIPPED ON: DELIVERED ON:

MEETS THE REQUIREMENTS OF THE CONTRACT DOCUMENTS FOR THE SUBJECT PROJECT IN ALL RESPECTS. PROCESSING, PRODUCT TESTING AND INSPECTION CONTROL OF RAW MATERIALS ARE IN CONFORMANCE WITH APPLICABLE SPECIFICATIONS, DRAWINGS AND STANDARDS OF ARTICLES FURNISHED. ARTICLES FURNISHED COMPLY WITH THE FOLLOWING STANDARD SPECIFICATIONS:

All records and documents pertinent to this certificate and not submitted herewith will be maintained available by the undersigned for a period of not less than 3 years from the date of this certificate.

(Name of Manufacturer)

(Authorized Representative’s Signature)

(Title)
## Equipment Record Sheet

<table>
<thead>
<tr>
<th>PROJECT:</th>
<th>SUBMITTAL NO.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(list Section No., Article No., and Paragraph)</td>
<td>(Revision: 1st, 2nd, 3rd, etc.)</td>
</tr>
</tbody>
</table>

### Equipment Manufacturer

<table>
<thead>
<tr>
<th>TYPE</th>
<th>SERVICE REPRESENTATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Mfr.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>Motor Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SERIAL NO.</th>
<th>Volts</th>
<th>Amps</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAPACITY</th>
<th>Phase</th>
<th>Cycles</th>
<th>RPS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Special Notes and Remarks:

- - - - -

- - - - -

- - - - -

- - - - -

- - - - -
SECTION 01400 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Document requirements.

3. Requirements for Contractor to provide quality-control services required by Engineer, the Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:

1. Divisions 2 through 4, Sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Engineer.

C. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
1.4 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.

1.5 SUBMITTALS

A. Qualification Data: For testing agencies specified in “Quality Assurance” Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

D. Reports: Prepare and submit certified written reports that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Ambient conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

E. Permits, Licenses, and Certificates: For the Owner’s records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

C. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

D. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.

1.7 QUALITY CONTROL

A. The Owner Responsibilities: Where quality-control services are indicated as the Owner’s responsibility, the Owner will engage a qualified testing agency to perform these services.
1. The Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.

2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by authorities having jurisdiction.

   1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
      a. Contractor shall not employ the same entity engaged by the Owner, unless agreed to in writing by the Owner.

   2. Notify testing agencies and Engineer at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

   3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

   4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

   5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

   1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

   2. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.

   3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

   4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
5. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections, at site or at source of products, including storage and curing of test samples.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field-curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION

3.1 TESTING LABORATORY SERVICES

A. Contractor shall employ and pay for the services of an independent Testing Laboratory to perform specified testing and provide written verification of compliance to the Owner in a timely fashion. The employment of the Laboratory shall in no way relieve the Contractor's obligations to perform the work of the Contract in strict accordance with the Contract Documents.

B. The Owner shall not be liable for any costs resulting from extra or special testing it orders, or any project delays, if Contractor fails to perform its work in accordance with these specifications.
3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

   1. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION
SECTION 01410 - TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.1  SUMMARY

A. This Section consists of requirements for the services of Independent Testing Laboratories to perform specified testing of work and materials at the Project site or at point of manufacture.

1.2  REQUIREMENTS

A. The Contractor shall pay all charges of the Testing Laboratory. Employment of Testing Laboratory shall in no way relieve Contractor of his obligation to perform work in accordance with Contract.

B. The Contractor will select and employ an Independent Testing Laboratory, approved by the Engineer and holding current certification with the State of Rhode Island, prior to the commencement of the Work, to perform soil testing services as well as other field testing services required by the Contract Documents. Laboratories shall also meet qualifications listed in Division 2 Sections for the types of testing to be conducted.

1.3  SUBMITTALS

A. Contractor shall submit for Engineer’s approval the name and qualifications of the Independent Testing Laboratory prior to the commencement of work.

PART 2 - PRODUCTS

A. Not used.

PART 3 - EXECUTION

3.1  LABORATORY DUTIES

A. Demonstrate expertise in providing services as specified in the Contract Documents.

B. Test the samples submitted by Contractor.

C. Cooperate with Owner and Contractors; provide qualified personnel promptly on notice. Perform specified inspections, sampling and testing of materials and methods of construction; ascertain compliance with requirements of Contract Documents.

D. The Testing Laboratory shall perform specified inspections, sampling, testing of materials and methods of construction as described in the Contract Documents.

E. The Testing Laboratory shall promptly notify the Engineer of observed irregularities or deficiencies of work or products and shall perform additional testing as required. The Testing Laboratory shall promptly submit two (2) copies of written reports for each test and inspection to the Engineer and one copy to the Contractor. Each report shall include:
1. Date issued.
2. Project title and number.
3. Testing laboratory name, address, and telephone number.
4. Name and signature of field and/or laboratory inspector.
5. Date, time, and location of sampling or inspection.
6. Record of temperature and weather conditions.
7. Date of test.
8. Identification of products and Specification Section.
9. Location of sample or test in the Project. Sample locations shall be shown on site plan sketch.
10. Type of inspection or test.
11. Results of test and compliance with Contract Documents.
12. Interpretation of test results.

F. The Testing Laboratory shall not be authorized to release, revoke, alter or enlarge upon any requirements of the Contract Documents and Laboratory shall not approve or accept any portion of the Work that does not conform to these Specifications.

G. Laboratory may not assume any duties of the Contractor; and the Laboratory has no authority to stop work.

3.2 CONTRACTOR'S RESPONSIBILITY

A. Cooperate with Laboratory personnel and provide access to work and facilitate the execution of the Laboratory's required services.

B. Provide to Laboratory representative samples of materials to be tested in required quantities.

C. Furnish labor and facilities to provide access to work to be tested, to obtain and handle samples at the site, and to facilitate inspections and tests.

D. Notify Laboratory sufficiently in advance of operations to allow for its assignment of personnel and schedule of tests.

E. Arrange with Laboratory, and pay for, any additional samples and testing required for Contractor's convenience.

F. Arrange with Laboratory, and pay for, any additional inspections, sampling and testing required when initial tests indicate that work does not comply with Contract Documents.

G. Arrange for and conduct any inspections required by State and/or local building, fire protection, safety, health or environmental officials.

H. Testing shall be provided by the Contractor; the Contractor will supply any laborers and equipment necessary for performing the testing at no additional cost. This work may include, but is not limited to providing materials and samples and revising or repairing work to meet the intent of the plans and specifications. The Contractor is also responsible for any costs associated with conformance testing performed by an Independent Laboratory.
END OF SECTION
SECTION 01420 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. “Approved”: When used to convey Engineer's action on Contractor's submittals, applications, and requests, “approved” is limited to Engineer's duties and responsibilities as stated in the Conditions of the Contract.

C. “Directed”: A command or instruction by Engineer. Other terms including “requested,” “authorized,” “selected,” “approved,” “required,” and “permitted” have the same meaning as “directed.”

D. “Indicated”: Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including “shown,” “noted,” “scheduled,” and “specified” have the same meaning as “indicated.”

E. “Regulations”: Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. “Installer”: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as “carpentry” does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as “carpenter.” It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

G. “Experienced”: When used with an entity, “experienced” means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

H. “Project Site”: Space available for performing construction activities. The extent of Project site is within the contract limit as shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as
if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.

C. Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Engineer for a decision before proceeding.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

E. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADAAG</td>
<td>Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities Available from Access Board (800) 872-2253 <a href="http://www.access-board.gov">www.access-board.gov</a> (202) 272-5434</td>
</tr>
</tbody>
</table>
ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research's “Encyclopedia of Associations” or in Columbia Books' “National Trade & Professional Associations of the U.S.”

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA Aluminum Association, Inc. (The) (202) 862-5100
www.aluminum.org
<table>
<thead>
<tr>
<th>Organization</th>
<th>Description</th>
<th>Phone Number</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAADM</td>
<td>American Association of Automatic Door Manufacturers</td>
<td>(216) 241-7333</td>
<td><a href="http://www.aaadm.com">www.aaadm.com</a></td>
</tr>
<tr>
<td>AABC</td>
<td>Associated Air Balance Council</td>
<td>(202) 737-0202</td>
<td><a href="http://www.aabchq.com">www.aabchq.com</a></td>
</tr>
<tr>
<td>AAMA</td>
<td>American Architectural Manufacturers Association</td>
<td>(847) 303-5664</td>
<td><a href="http://www.aamanet.org">www.aamanet.org</a></td>
</tr>
<tr>
<td>AAN</td>
<td>American Association of Nurserymen</td>
<td></td>
<td>(See ANLA)</td>
</tr>
<tr>
<td>AASHTO</td>
<td>American Association of State Highway and Transportation Officials</td>
<td>(202) 624-5800</td>
<td><a href="http://www.aashto.org">www.aashto.org</a></td>
</tr>
<tr>
<td>AATCC</td>
<td>American Association of Textile Chemists and Colorists (The)</td>
<td>(919) 549-8141</td>
<td><a href="http://www.aatcc.org">www.aatcc.org</a></td>
</tr>
<tr>
<td>ABMA</td>
<td>American Bearing Manufacturers Association</td>
<td>(202) 367-1155</td>
<td><a href="http://www.abma-dc.org">www.abma-dc.org</a></td>
</tr>
<tr>
<td>ACI</td>
<td>American Concrete Institute/ACI International</td>
<td>(248) 848-3700</td>
<td><a href="http://www.aci-int.org">www.aci-int.org</a></td>
</tr>
<tr>
<td>ACPA</td>
<td>American Concrete Pipe Association</td>
<td>(972) 506-7216</td>
<td><a href="http://www.concrete-pipe.org">www.concrete-pipe.org</a></td>
</tr>
<tr>
<td>AEIC</td>
<td>Association of Edison Illuminating Companies, Inc. (The)</td>
<td>(205) 257-2530</td>
<td><a href="http://www.aeic.org">www.aeic.org</a></td>
</tr>
<tr>
<td>AFPA</td>
<td>American Forest &amp; Paper Association</td>
<td></td>
<td>(See AF&amp;PA)</td>
</tr>
<tr>
<td>AF&amp;PA</td>
<td>American Forest &amp; Paper Association</td>
<td>(800) 878-8878</td>
<td><a href="http://www.afandpa.org">www.afandpa.org</a></td>
</tr>
<tr>
<td>AGA</td>
<td>American Gas Association</td>
<td>(202) 824-7000</td>
<td><a href="http://www.gas.org">www.gas.org</a></td>
</tr>
<tr>
<td>AGC</td>
<td>Associated General Contractors of America (The)</td>
<td>(703) 548-3118</td>
<td><a href="http://www.agc.org">www.agc.org</a></td>
</tr>
<tr>
<td>AHA</td>
<td>American Hardboard Association</td>
<td>(847) 934-8800</td>
<td><a href="http://www.hardboard.org">www.hardboard.org</a></td>
</tr>
<tr>
<td>AHAM</td>
<td>Association of Home Appliance Manufacturers</td>
<td>(202) 872-5955</td>
<td><a href="http://www.aham.org">www.aham.org</a></td>
</tr>
<tr>
<td>Code</td>
<td>Organization</td>
<td>Phone 1</td>
<td>Phone 2</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>AI</td>
<td>Asphalt Institute</td>
<td>(859) 288-4960</td>
<td></td>
</tr>
<tr>
<td>AIA</td>
<td>American Institute of Architects (The)</td>
<td>(800) 242-3837</td>
<td>(202) 626-7300</td>
</tr>
<tr>
<td>AISC</td>
<td>American Institute of Steel Construction</td>
<td>(800) 644-2400</td>
<td>(312) 670-2400</td>
</tr>
<tr>
<td>AISI</td>
<td>American Iron and Steel Institute</td>
<td>(202) 452-7100</td>
<td></td>
</tr>
<tr>
<td>AITC</td>
<td>American Institute of Timber Construction</td>
<td>(303) 792-9559</td>
<td></td>
</tr>
<tr>
<td>ALCA</td>
<td>Associated Landscape Contractors of America</td>
<td>(800) 395-2522</td>
<td>(703) 736-9666</td>
</tr>
<tr>
<td>ALSC</td>
<td>American Lumber Standard Committee</td>
<td>(301) 972-1700</td>
<td></td>
</tr>
<tr>
<td>AMCA</td>
<td>Air Movement and Control Association</td>
<td>(847) 394-0150</td>
<td></td>
</tr>
<tr>
<td>ANLA</td>
<td>American Nursery &amp; Landscape Association</td>
<td>(202) 789-2900</td>
<td></td>
</tr>
<tr>
<td>ANSI</td>
<td>American National Standards Institute</td>
<td>(202) 293-8020</td>
<td></td>
</tr>
<tr>
<td>AOAC</td>
<td>Association of Official Agricultural Chemists</td>
<td>(800) 379-2622</td>
<td></td>
</tr>
<tr>
<td>AOSA</td>
<td>Association of Official Seed Analysts</td>
<td>(505) 522-1437</td>
<td></td>
</tr>
<tr>
<td>APA</td>
<td>APA - The Engineered Wood Association</td>
<td>(253) 565-6600</td>
<td></td>
</tr>
<tr>
<td>APA</td>
<td>Architectural Precast Association</td>
<td>(941) 454-6989</td>
<td></td>
</tr>
<tr>
<td>API</td>
<td>American Petroleum Institute</td>
<td>(202) 682-8000</td>
<td></td>
</tr>
<tr>
<td>ARI</td>
<td>Air-Conditioning &amp; Refrigeration Institute</td>
<td>(703) 524-8800</td>
<td></td>
</tr>
<tr>
<td>ASCA</td>
<td>Architectural Spray Coaters Association</td>
<td>(609) 848-6120</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>Description</td>
<td>Contact Information</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>---------------------</td>
<td></td>
</tr>
<tr>
<td>ASCE</td>
<td>American Society of Civil Engineers</td>
<td>(800) 548-2723, (703) 295-6300</td>
<td></td>
</tr>
<tr>
<td>ASHRAE</td>
<td>American Society of Heating, Refrigerating and Air-Conditioning Engineers</td>
<td>(800) 527-4723, (404) 636-8400</td>
<td></td>
</tr>
<tr>
<td>ASME</td>
<td>ASME International</td>
<td>(800) 843-2763, (212) 591-7722</td>
<td></td>
</tr>
<tr>
<td>ASSE</td>
<td>American Society of Sanitary Engineering</td>
<td>(440) 835-3040</td>
<td></td>
</tr>
<tr>
<td>ASTM</td>
<td>ASTM International</td>
<td>(610) 832-9585</td>
<td></td>
</tr>
<tr>
<td>AWCI</td>
<td>AWCI International</td>
<td>(703) 534-8300</td>
<td></td>
</tr>
<tr>
<td>AWCMA</td>
<td>American Window Covering Manufacturers Association</td>
<td>(See WCMA)</td>
<td></td>
</tr>
<tr>
<td>AWI</td>
<td>Architectural Woodwork Institute</td>
<td>(800) 449-8811, (703) 733-0600</td>
<td></td>
</tr>
<tr>
<td>AWPA</td>
<td>American Wood-Preservers' Association</td>
<td>(817) 326-6300</td>
<td></td>
</tr>
<tr>
<td>AWS</td>
<td>American Welding Society</td>
<td>(800) 443-9353, (305) 443-9353</td>
<td></td>
</tr>
<tr>
<td>AWWA</td>
<td>American Water Works Association</td>
<td>(800) 926-7337, (303) 794-7711</td>
<td></td>
</tr>
<tr>
<td>BHMA</td>
<td>Builders Hardware Manufacturers Association</td>
<td>(212) 297-2122</td>
<td></td>
</tr>
<tr>
<td>BIA</td>
<td>Brick Industry Association (The)</td>
<td>(703) 620-0010</td>
<td></td>
</tr>
<tr>
<td>CLFMI</td>
<td>Chain Link Fence Manufacturers Institute</td>
<td>(301) 596-2583</td>
<td></td>
</tr>
<tr>
<td>CPPA</td>
<td>Corrugated Polyethylene Pipe Association</td>
<td>(800) 510-2772, (202) 462-9607</td>
<td></td>
</tr>
<tr>
<td>CRSI</td>
<td>Concrete Reinforcing Steel Institute</td>
<td>(847) 517-1200</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>Description</td>
<td>Website</td>
<td>Phone Numbers</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>---------</td>
<td>---------------</td>
</tr>
<tr>
<td><a href="http://www.crsi.org">www.crsi.org</a></td>
<td>Construction Specifications Institute (The)</td>
<td></td>
<td>(800) 689-2900, (703) 684-0300</td>
</tr>
<tr>
<td>CSI</td>
<td>Construction Specifications Institute (The)</td>
<td><a href="http://www.csinet.org">www.csinet.org</a></td>
<td></td>
</tr>
<tr>
<td>FM</td>
<td>Factory Mutual System</td>
<td>(See FMG)</td>
<td></td>
</tr>
<tr>
<td>FMG</td>
<td>FM Global</td>
<td>(Formerly: FM - Factory Mutual System)</td>
<td>(401) 275-3000</td>
</tr>
<tr>
<td>FMG</td>
<td>FM Global</td>
<td><a href="http://www.fmglobal.com">www.fmglobal.com</a></td>
<td></td>
</tr>
<tr>
<td>GRI</td>
<td>Geosynthetic Research Institute</td>
<td><a href="http://www.drexel.edu/gri">www.drexel.edu/gri</a></td>
<td>(215) 895-2343</td>
</tr>
<tr>
<td>NECA</td>
<td>National Electrical Contractors Association</td>
<td><a href="http://www.necanet.org">www.necanet.org</a></td>
<td>(301) 657-3110</td>
</tr>
<tr>
<td>NEMA</td>
<td>National Electrical Manufacturers Association</td>
<td><a href="http://www.nema.org">www.nema.org</a></td>
<td>(703) 841-3200</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Association</td>
<td><a href="http://www.nfpa.org">www.nfpa.org</a></td>
<td>(800) 344-3555, (617) 770-3000</td>
</tr>
<tr>
<td>NLGA</td>
<td>National Lumber Grades Authority</td>
<td><a href="http://www.nlga.org/">www.nlga.org/</a></td>
<td>(604) 524-2393</td>
</tr>
<tr>
<td>NRMCA</td>
<td>National Ready Mixed Concrete Association</td>
<td><a href="http://www.nrmca.org">www.nrmca.org</a></td>
<td>(888) 846-7622, (301) 587-1400</td>
</tr>
<tr>
<td>PCI</td>
<td>Precast/Prestressed Concrete Institute</td>
<td>wwwpci.org</td>
<td>(312) 786-0300</td>
</tr>
<tr>
<td>RCI</td>
<td>Resilient Floor Covering Institute</td>
<td><a href="http://www.rfci.com">www.rfci.com</a></td>
<td>Contact by mail only</td>
</tr>
<tr>
<td>RIS</td>
<td>Redwood Inspection Service</td>
<td><a href="http://www.calredwood.org">www.calredwood.org</a></td>
<td>(888) 225-7339, (415) 382-0662</td>
</tr>
<tr>
<td>SAE</td>
<td>SAE International</td>
<td><a href="http://www.sae.org">www.sae.org</a></td>
<td>(724) 776-4841</td>
</tr>
<tr>
<td>SSPC</td>
<td>SSPC: The Society for Protective Coatings</td>
<td><a href="http://www.sspc.org">www.sspc.org</a></td>
<td>(877) 281-7772, (412) 281-2331</td>
</tr>
<tr>
<td>STI</td>
<td>Steel Tank Institute</td>
<td><a href="http://www.steeltank.com">www.steeltank.com</a></td>
<td>(847) 438-8265</td>
</tr>
<tr>
<td>TIA/EIA</td>
<td>Telecommunications Industry Association/Electronic</td>
<td></td>
<td>(703) 907-7700</td>
</tr>
</tbody>
</table>
C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

BOCA BOCA International, Inc. (708) 799-2300
www.bocai.org

CABO Council of American Building Officials (See ICC)

IAPMO International Association of Plumbing and Mechanical Officials (The) (909) 595-8449
www.iapmo.org

ICBO International Conference of Building Officials (800) 284-4406
www.icbo.org (562) 699-0541

ICC International Code Council, Inc. (Formerly: CABO - Council of American Building Officials) (703) 931-4533
www.intlcode.org

SBCCI Southern Building Code Congress International, Inc. (205) 591-1853
www.sbc ci.org

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are
E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

MaDEP Massachusetts Department of Environmental Protection
www.mass.gov/dep/ (508) 946-2700

MaDOT Massachusetts Department of Transportation
www.massdot.state.ma.us (617) 973-7000

MHC Massachusetts Historical Commission
www.sec.state.ma.us/mhc/ (617) 727-8470

UMASS University of Massachusetts
UMASS Extension (Amherst)
www.umass.edu/ (413) 545-2311

MaDEP Massachusetts Department of Environmental Protection
www.mass.gov/dep/ (508) 946-2700

MaDOT Massachusetts Department of Transportation
www.massdot.state.ma.us (617) 973-7000

MHC Massachusetts Historical Commission
www.sec.state.ma.us/mhc/ (617) 727-8470

UMASS University of Massachusetts
UMASS Extension (Amherst)
www.umass.edu/ (413) 545-2311
PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION
SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for temporary facilities and controls, including support facilities, and security and protection facilities.

B. Support facilities include, but are not limited to, the following:
   1. Temporary signs.
   2. Field offices.
   3. Construction aids and miscellaneous services and facilities.

C. Security and protection facilities include, but are not limited to, the following:
   1. Temporary site enclosure or barrier fence around all access locations and work areas.
   2. Barricades, warning signs, and lights as required to protect the public throughout the period of construction.

D. Dust control.
   1. Conduct construction operations and activities to minimize the creation and dispersion of dust. If the Engineer determines that water is required for more effective dust control, provide such measures at no additional cost.

E. Related Sections include the following:
   1. Division 1 Section “Temporary Erosion and Sedimentation Control” for temporary erosion control measures.

1.2 USE CHARGES

A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Engineer and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
   1. Owner's construction forces.
   2. Engineer.
   3. Testing agencies.
1.3 PROJECT CONDITIONS

A. Temporary Utility Services: Coordinate with the owner of each utility for temporary access to on-site utilities. The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
   1. Keep temporary services and facilities clean and neat.
   2. Relocate temporary services and facilities as required by progress of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Engineer. Provide materials suitable for use intended including:
   1. Temporary barricades.
   2. Construction fencing.

B. Fencing:
   1. Work Area Protection:
   2. Access Locations and Routes:
      a. Orange plastic mesh construction fencing, 36” min. height, staked at 6’ spacing or as needed to maintain required min. height along entire length of installation.

C. Water: Potable.

2.2 TEMPORARY SIGNAGE

A. Temporary Signs: Exterior-type Grade B-B high-density plywood in sizes and thicknesses indicated.
   1. Supports: Posts or framing of preservative-treated wood or steel.
   2. Paint sign panel and applied graphics with exterior-grade alkyd gloss enamel over exterior primer.
2.3 EQUIPMENT
   A. General: Provide equipment suitable for use intended.
   B. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

2.4 DUST CONTROL
   A. Water: Potable.
   B. Do not use calcium chloride.

PART 3 - EXECUTION

3.1 GENERAL
   A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
   B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 SIGNAGE AND FENCING
   A. See “General Conditions of the Contract, Article 6.13, Safety and Protection” for additional requirements regarding Contractor’s responsibility to furnish, install and maintain adequate warning signage and barricades at respective access and work locations and phases of the work to protect the public during working and non-working hours.
   B. Remove and dispose off-site all signage and fencing installed for the project.

3.3 TEMPORARY UTILITY INSTALLATION
   A. Sanitary Facilities: Provide temporary toilets. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
      1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
      2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy.

3.4 SUPPORT FACILITIES INSTALLATION
   A. General: Comply with the following:
1. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion.

B. Temporary Accesses: Construct and maintain temporary access routes and construction accesses adequate to support vehicle/equipment loads throughout the Contract Times in all weather conditions without causing temporary or permanent damage to adjacent vegetation (outside the contract limits of disturbance) to remain. Locate temporary access routes where shown on the Contract Drawings or as directed by the owner. Extend temporary routes and staging areas within construction limits of disturbance indicated, only as necessary for construction operations.

1. Coordinate elevations of temporary accesses to maintain drainage function from upgradient areas. Routes and associated work shall not result in ponding or other diversion of flow onto adjacent areas or properties that causes scouring or excessive flooding. Drainage patterns shall match patterns existing prior to construction.

2. Provide a reasonably level, graded, well-drained subgrade of satisfactory soil material, compacted to not less than 95 percent of maximum dry density in the top 6 inches.

3. Provide gravel paving course of subbase material not less than 3 inches thick; roller compacted to a level, smooth, dense surface.

4. Place fabric and crushed stone according to Division 1 Section “Temporary Erosion and Sediment Control.”

5. Restore construction access routes after temporary use in accordance with Division 2 Section “Surface Restoration.”

6. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

C. Construct construction accesses in locations shown on the Contract Drawings. Constructing construction access ways in other locations is not acceptable unless approved by the Engineer.

D. Project Identification Signs: Prepare Project identification sign, and install signs where indicated to inform public and persons seeking entrance to Project. Do not permit installation of unauthorized signs.

1. Engage an experienced sign painter to apply graphics for Project identification signs. Comply with details indicated.

E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste.

1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.
3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Stormwater Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.

C. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from construction damage. Protect tree root systems from damage, flooding, and erosion.

D. Site Enclosure: Before construction operations begin, install temporary fence or barricade preventing entry into construction area. Locate where indicated, or enclose entire Project site or portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering construction area except by entrance gates.

E. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.

1. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch-thick exterior plywood.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.

B. Termination and Removal: Remove each temporary facility when need for its service has ended or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.

2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or
replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.

3. At Substantial Completion, clean and renovate permanent facilities used during construction period.

C. Control dust and wind erosion. Control dust to prevent a hazard to traffic on adjacent roadways. Dust control includes sprinkling of water on exposed soils and haul roads.
3.7 DUST CONTROL

A. Apply water uniformly over the surface when dust becomes a nuisance or when directed by the Engineer. Provide shut-off valve in convenient location on water truck, to allow for regulating water flow.

END OF SECTION
SECTION 01572 – TEMPORARY EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes furnishing, placing, and maintaining sedimentation control measures as shown on the Drawings, as directed by the Engineer, and where necessary to reduce sediment content of runoff. Control measures are to remain in place until after completion of construction. Measures include the following:

1. Silt fence.
2. Straw wattles.
3. Coir Roll
4. Erosion Control Blanket
5. Construction entrance.
6. Temporary dewatering discharge basin.
7. Temporary scour protection.

B. Related Sections include the following:

1. Division 1 Section “Temporary Facilities and Controls” for dust control measures.
2. Division 2 Section “Earthwork.”
3. Division 2 Section “Control of Water.”
4. Division 2 Section “Surface Restoration.”

1.2 SUBMITTALS

A. Product Data: For the following:

2. Silt fence.
3. Erosion Control Blanket
4. Straw wattles.

B. Material Certificates:

3. Riprap.
1.3 QUALITY ASSURANCE


PART 2 - PRODUCTS

2.1 SILT FENCE

A. Synthetic Filter Fabric: Woven geotextile, 36 inches maximum height, conforming to the following:

<table>
<thead>
<tr>
<th>Properties</th>
<th>Requirement</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grab Tensile Strength (ASTM D4632):</td>
<td>124</td>
<td>Lbs</td>
</tr>
<tr>
<td>Grab Tensile Elongation (ASTM D4632):</td>
<td>15</td>
<td>Percent</td>
</tr>
<tr>
<td>Puncture Strength (ASTM D4833):</td>
<td>65</td>
<td>Lbs</td>
</tr>
<tr>
<td>Flow Rate (ASTM D4491):</td>
<td>20</td>
<td>Gal/Min/Sq. Ft.</td>
</tr>
</tbody>
</table>

UV Resistance(at 500 hours)
(Retained strength) (ASTM D4355): 80 Percent

B. Product and Manufacturer:
   1. Harris Silt Fence by Amoco Fabrics and Filters.
   2. Mutual MISF 1855 by Mutual Industries, Inc.
   3. Or equal.

2.2 POSTS

A. Hardwood Stakes: 1-inch by 1-inch by 42-inch minimum.

2.3 SILT FENCE FASTENERS

A. Staples, tie wires or hog rings, as recommended by manufacturer.
   1. Staples: Heavy-duty wire, 1-inch long minimum.

2.4 STRAW WATTLES

A. Wattles shall be 12-inch Sedixmax-SW12 manufactured by North American Green or approved equal.
2.5 EROSION CONTROL BLANKET
   A. Erosion control blanket shall be Rolanka BioD-Mat 70 or approved equal.

2.6 CONSTRUCTION ENTRANCE
   A. 2” Crushed Stone: Standard Specifications, Section M2.01.7, dense-graded crushed stone for sub-base.
   B. Non-woven Geotextile Fabric: As indicated on Contract Drawings.

2.7 GEOTEXTILE FABRIC
   A. As indicated on Contract Drawings.

2.8 RIPRAP
   A. Material: Standard Specifications, Section M2.02.0, conforming to size requirements indicated on Contract Drawings.

PART 3 - EXECUTION

3.1 GENERAL
   A. Minimize environmental damage during construction. Prevent discharge of fuel, oil, lubricants, and other fluids. Mitigate effects of discharge.
   B. Install erosion and sediment control measures prior to clearing, demolition or construction.
   C. Construct erosion and sediment control measures in accordance with standards and specifications of the “Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas”, local regulations, and as follows:
      1. Attend a preconstruction meeting with the Engineer and wetland agent, to review permit conditions and construction methods.
      2. Submit complete and detailed erosion control plan prior to the preconstruction meeting, detailing the following items:
         a. Impacts due to soil erosion, sedimentation and discharge of turbid water to receiving areas. While soil and erosion controls can address some of these issues, continuous site inspections to address potential problem areas and immediate site stabilization, either through vegetation establishment or temporary/permanent pavement are key components. The final erosion control plan shall include a detailed construction sequence, erosion controls to be established within work limits (not just adjacent to wetlands/watercourses),
outlet/discharge area controls, dewatering methods, stockpiling and staging areas and appropriate methods of temporary and final stabilization. Areas of wetland stabilization shall be consistent with existing vegetative types.

3. Provide additional sedimentation and erosion controls as required to address field conditions.

4. Do not discharge turbid water from dewatering to mill races, raceways, or watercourses.

5. Weekly and prior to any anticipated rain event, inspect site. Ensure that erosion controls are properly maintained and functioning.

6. Construction yards outside of the work limits may require a separate wetland application, depending on the location.

7. Supply a 24-hour contact name and number as part of the erosion control plan.

D. Install additional control measures, if deemed necessary by the State, Town, or Owner.

E. Implement and maintain erosion and sediment controls shown on the Drawings. Inform parties engaged on the construction site of the requirements and objectives of the plan. Notify the proper Town agency of transfer of this responsibility.

F. Protect any catch basins with straw wattle sediment controls throughout construction until disturbed areas are stabilized.
   1. Remove and dispose of sediment from control structures.

G. Do not discharge directly into wetlands or watercourses where dewatering is necessary. Utilize methods and devices as permitted by authorities having jurisdiction and appropriate regulations to minimize and retain suspended solids including pumping water into a temporary dewatering discharge basin, providing surge protection at inlet and outlet of pumps, floating pump intake.
   1. If pumping operation results in turbidity problems, stop pumping until means of controlling turbidity are determined and implemented.

H. Where control measures are required for longer than 60 days, use silt fence instead of hay bales.

I. Stockpiles
   2. Surround stockpiles by a sediment barrier.
   3. Stabilize stockpiles left bare for more than 15 days with temporary vegetation or mulch.

J. Final Grading
1. If final grading is delayed for more than 30 days after land disturbances cease, stabilize soils with temporary vegetation or mulch.

K. Planting Season for Temporary Vegetation
   1. March 1 to June 15 and August 1 to October 1.
   2. After September 15, stabilize areas with straw wattle check, filter fabric, or woodchip mulch.

L. Areas to Be Left Bare Prior to Finished Grading and Seeding
   1. Within Planting Seasons
      a. Temporarily seed with Perennial Ryegrass
      b. Apply at a rate of 2 pounds per 1000 sq. ft. at a depth of 1/2 inch.
      c. Where grass predominates, fertilize according to a soil test at a minimum application rate of one pound per acre.
   2. Outside of Planting Seasons
      a. Apply air-dried wood chip mulch, free of coarse matter.
      b. Apply at a rate of 185 to 275 pounds per 1000 sq. ft.

3.2 CONTROL SYSTEM

A. Silt Fence
   1. Install fencing where directed by the Engineer. Maintain pitch of 2 to 20 degrees, with inclination toward potential silt source.
   2. Install bottom 6 inches of fabric by trenching and burying the fabric into the notched ground.
   3. Drive posts into ground a minimum of 12 inches.
   4. Locate fabric splices at posts only. Provide 6-inch overlap and seal.

B. Straw Wattles
   1. Install in accordance with manufacturer’s written instructions and the Drawings

C. Erosion Control Blanket
   1. Install in accordance with manufacturer’s written instructions and the Drawings

D. Construction Entrance
   1. Install at indicated site entrance locations adjacent to off-site paved areas.

3.3 TEMPORARY DEWATERING DISCHARGE BASIN

A. Install at locations as shown on the Drawings or where directed by the Engineer.
B. Install in advance of construction and maintain throughout period of construction activities requiring discharge of dewatering wastewaters.

3.4 MAINTENANCE

A. Control System
   1. Inspect control system immediately after each rainfall and daily during prolonged rainfall. Make repairs immediately.
   2. Remove and dispose of accumulated sediments when sediment reaches approximately one-third the height of the control system, or when directed by the Engineer.
   3. Replace control system promptly if fabric decomposes or system becomes ineffective prior to the expected usable life.
   4. Maintain or replace system until no longer necessary for the intended purpose.

B. Construction Entrance
   1. Maintain in good condition throughout construction period.
   2. Sweep adjacent roadways daily to remove tracked material from pavement.

3.5 REMOVAL

A. Remove and dispose of all control systems, including accumulated sediment, after construction is complete and disturbed areas stabilized with new growth, or as otherwise directed by the Engineer.

END OF SECTION
SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following administrative and procedural requirements: selection of products for use in Project; product delivery, storage, and handling; manufacturers’ standard warranties on products; special warranties; product substitutions; and comparable products.

1.2 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term “product” includes the terms “material,” “equipment,” “system,” and terms of similar intent.

1. Named Products: Items identified by manufacturer’s product name, including make or model number or other designation, shown or listed in manufacturer’s published product literature that is current as of date of the Contract Documents.

2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer’s product is named and accompanied by the words “basis of design,” including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

D. Manufacturer’s Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

E. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer’s warranty or to provide more rights for Owner.
1.3  PRODUCTS

A. Furnish products of qualified manufacturers suitable for the intended use. Furnish products of each type by a single manufacturer unless specified otherwise.

B. Do not use materials and equipment removed from the existing premises, except as specifically permitted by the Contract Documents.

C. Furnish interchangeable components of the same manufacturer for the components being replaced.

1.4  SUBMITTALS

A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer’s name and proprietary product names for each product.
   1. Coordinate product list with Contractor’s Construction Schedule and the Submittals Schedule.
   2. Form: Tabulate information for each product under the following column headings:
      a. Specification Section number and title.
      b. Generic name used in the Contract Documents.
      c. Proprietary name, model number, and similar designations.
      d. Manufacturer’s name and address.
      e. Supplier’s name and address.
      f. Installer’s name and address.
      g. Projected delivery date or time span of delivery period.
      h. Identification of items that require early submittal approval for scheduled delivery date.
   3. Initial Submittal: Within 10 days after date of commencement of the Work, submit 3 copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.
      a. At Contractor’s option, initial submittal may be limited to product selections and designations that must be established early in Contract period.
   4. Completed List: Within 30 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
   5. Engineer’s Action: Engineer will respond in writing to Contractor within 15 days of receipt of completed product list. Engineer’s response will include a list of unacceptable product selections and a brief explanation of reasons for this action.
Engineer’s response, or lack of response, does not constitute a waiver of requirement that products comply with the Contract Documents.

B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
   a. Statement indicating why specified material or product cannot be provided.
   b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
   c. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
   d. Samples, where applicable or requested.
   e. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
   f. Summary of impacts to Contractor’s Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer’s letterhead, stating lack of availability or delays in delivery.
   g. Cost information, including a proposal of change, if any, in the Contract Sum.
   h. Contractor’s certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
   i. Contractor’s waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

2. Engineer’s Action: If necessary, Engineer will request additional information or documentation for evaluation within 7 working days of receipt of a request for substitution. Engineer will notify Contractor of acceptance or rejection of proposed substitution within 15 working days of receipt of request, or 7 working days of receipt of additional information or documentation, whichever is later.
   a. Form of Acceptance: Change Order.
   b. Use product specified if Engineer cannot make a decision on use of a proposed substitution within time allocated.

C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section “Submittal Procedures.” Show compliance with requirements.
1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer’s written instructions and the following:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to Project site in an undamaged condition in manufacturer’s original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Promptly inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

5. Store products to permit access for inspection and measurement of quantity or counting of units. Store with seals and labels intact and legible. Periodically inspect to verify that the products are undamaged and are maintained in acceptable condition.

6. Store materials in a manner that will not endanger site structures. Store sensitive products (that are subject to damage by the elements) under cover in weather tight, climate controlled (if applicable), enclosures in an environment favorable to the product. For exterior storage of fabricated products, place on sloped supports above the ground with ventilation adequate to prevent condensation.

7. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent the condensation and degradation of products.

8. Store and protect the products in accordance with the manufacturers’ instructions. Comply with product manufacturer’s written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

9. Protect stored products from damage.


B. Storage: Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner’s construction forces. Coordinate location with Owner.
C. Handling: Provide equipment and personnel to handle the products by methods to prevent soiling, disfigurement, or damage.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer’s disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
   1. Manufacturer’s Standard Form: Modified to include Project-specific information and properly executed.
   2. Refer to Divisions 2 through 4 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 1 Section “Closeout Procedures.”

PART 2 - PRODUCTS

2.1 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.

B. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, that are new at time of installation.
   1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
   2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
   3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
   4. Where products are accompanied by the term “as selected,” Engineer will make selection.
   5. Where products are accompanied by the term “match sample,” sample to be matched is Engineer’s.
7. Or Equal: Where products are specified by name and accompanied by the term “or equal” or “or approved equal” or “or approved,” comply with provisions in “Comparable Products” Article to obtain approval for use of an unnamed product.

C. Product Selection Procedures: Procedures for product selection include the following:

1. Product: Where Specification paragraphs or subparagraphs titled "Product" name a single product and manufacturer, provide the product named.
   a. Substitutions may be considered, unless otherwise indicated.

2. Manufacturer/Source: Where Specification paragraphs or subparagraphs titled “Manufacturer” or “Source” name single manufacturers or sources, provide a product by the manufacturer or from the source named that complies with requirements.
   a. Substitutions may be considered, unless otherwise indicated.

3. Products: Where Specification paragraphs or subparagraphs titled “Products” introduce a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
   a. Substitutions may be considered, unless otherwise indicated.

4. Available Products: Where Specification paragraphs or subparagraphs titled “Available Products” introduce a list of names of both products and manufacturers, provide one of the products listed or another product that complies with requirements. Comply with provisions in “Comparable Products” Article to obtain approval for use of an unnamed product.

5. Available Manufacturers: Where Specification paragraphs or subparagraphs titled “Available Manufacturers” introduce a list of manufacturers’ names, provide a product by one of the manufacturers listed or another manufacturer that complies with requirements. Comply with provisions in “Comparable Products” Article to obtain approval for use of an unnamed product.
   a. Substitutions may be considered, unless otherwise indicated.

6. Allowances: Refer to individual Specification Sections for allowances that control product selection and for procedures required for processing such selections.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Engineer will consider requests for substitution if received within 20 calendar days before that item of work is to be installed. Requests received after that time may be considered or rejected at discretion of Engineer.

B. Conditions: Engineer will consider Contractor’s request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:
1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

2. Requested substitution does not require extensive revisions to the Contract Documents.

3. Requested substitution is consistent with the Contract Documents and will produce indicated results.

4. Substitution request is fully documented and properly submitted.

5. Requested substitution will not adversely affect Contractor’s Construction Schedule.

6. Requested substitution has received necessary approvals of authorities having jurisdiction.

7. Requested substitution is compatible with other portions of the Work.

8. Requested substitution has been coordinated with other portions of the Work.

9. Requested substitution provides specified warranty.

10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

11. Substitutions may be considered only when a product is no longer in production following the date of receipt of the Purchase Order for this Contract. Submit certification both that specified product was carried in Bid, and is no longer obtainable.

C. Document each request with complete data substantiating the compliance of a proposed Substitution with the Contract Documents.

D. A request constitutes a representation that the Bidder:

1. Has investigated the proposed Product and determined that it meets or exceeds the quality level of the specified product.

2. Will provide the same warranty for the Substitution as for the specified Product.

3. Will coordinate the installation and make changes to other Work which may be required for the Work to be complete with no additional cost to the Owner.

4. Waives claims for additional costs or time extension which may subsequently become apparent.

5. Will reimburse the Owner and the Architect for review or redesign services associated with re-approval by the authorities having jurisdiction.

E. Substitution Submittal Procedure, If Permitted Following Contract Award:
1. Submit three copies of a request for Substitution for consideration, no later than 20 working days following date of receipt of the Purchase Order for this Contract. Limit each request to one proposed Substitution.

2. Submit the Shop Drawings, Product Data, and the certified test results attesting to the proposed product equivalence. The burden of proof is on the proposer.

3. The Architect will notify the Contractor in writing of a decision to accept or reject the request.

2.3 COMPARABLE PRODUCTS

A. Where products or manufacturers are specified by name, submit the following, in addition to other required submittals, to obtain approval of an unnamed product:

1. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

2. Evidence that proposed product provides specified warranty.

3. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.

4. Samples or other documentation proving equal substitution or compliance with Drawings and Technical Specifications, if requested.

PART 3 - EXECUTION (Not used)

END OF SECTION
SECTION 01700 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

2. Review and adjustment/acceptance of construction layout for Base Bid slope regrading and walkway relocation
4. Progress cleaning.
5. Protection of installed construction.
6. Correction of the Work.

B. Related Sections include the following:

1. Division 1 Section “Project Management and Coordination” for procedures for coordinating field engineering with other construction activities.
2. Division 1 Section “Submittal Procedures.”
3. Division 1 Section "Closeout Procedures" for submitting final Project Record Documents, recording of Owner-accepted deviations, and final cleaning.

1.3 SUBMITTALS

A. Certificates: Submit copy of current registration certificate for professional engineer to be employed, if required, for delegated design of temporary bridge/channel crossing at the main parking area.

1.4 QUALITY ASSURANCE

A. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated.
PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site Work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
   a. Description of the work.
   b. List of detrimental conditions, including substrates.
   c. List of unacceptable installation tolerances.
   d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

3. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Engineer. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding with the Work, verify layout information shown on the Construction Drawings, in relation to existing site features. If discrepancies are discovered, notify Engineer prior to proceeding with the Work.

B. Site Improvements: Locate and lay out site improvements, including wall repair and reconstruction, slope regrading, walkway relocation, site clearing, and permanent erosion and sedimentation controls.

C. Clearly mark and review construction layout for slope regrading and walkway relocation with in the field with the Engineer. Make adjustments were required for final review and acceptance prior to initiating work.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level. Where existing walls have vertical cant adjacent to repair areas, match cant of those locations, or as otherwise directed by the Engineer.

2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.

B. Comply with manufacturers’ written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

F. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
3.5 PROGRESS CLEANING

A. Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

B. Maintain Project site free of waste materials and debris.

C. Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

F. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

G. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
   1. Thoroughly clean surfaces before applying paint or other finishing materials.

H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials into waterways will not be permitted.

I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

3.7 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
   1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

END OF SECTION
SECTION 01770 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Inspection procedures.
   2. Record Documents including administrative and procedural requirements including record product data.
   3. Final cleaning.

B. Related Sections include the following:
   1. Divisions 2 through 4, Sections for specific closeout and special cleaning requirements for products of those Sections.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:
   1. Number of Copies: Submit two sets of marked-up Record Prints.
   2. Submit copies of Record Drawings as follows:
      a. Initial Submittal: Submit three set of marked-up Record Prints. Engineer will initial and date each plot and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Engineer will return plots and prints for organizing into sets, printing, binding, and final submittal.
      b. Final Submittal: Submit three sets of marked-up Record Prints and a CD-ROM. Plot and print each Drawing, whether or not changes and additional information were recorded.

B. Record Product Data: Submit one copy of each Product Data submittal.
1.4 CLOSEOUT PROCEDURES

A. Submit a written certification that the Contract Documents have been reviewed, the Work has been inspected, and that the Work is complete in accordance with the Contract Documents and is ready for the Engineer's review.

B. Provide submittals to Engineer that are required by authorities having jurisdiction.

C. Provide submittals to Engineer that are required by authorities having jurisdiction, including the following closeout documents:

D. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.5 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
   1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
   2. Complete final cleaning requirements.

B. Inspection: When the Work is ready for its intended use, submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor’s list or additional items identified by Engineer that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the work identified in previous inspections as incomplete is completed or corrected.
   2. Results of completed inspection will form the basis of requirements for Final Completion.

1.6 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
   1. Submit a final Application for Payment according to Division 1 Section “Payment Procedures.”
2. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will notify Contractor of construction that must be completed or corrected before final payment will be issued.

   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

   A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1.8 PRODUCT WARRANTIES AND PRODUCT BONDS

   A. Obtain warranties and bonds executed in duplicate by the responsible subcontractors, suppliers, and manufacturers, within 10 days after the completion of the applicable item of work.

   B. Execute and assemble the transferable warranty documents and bonds from the subcontractors, suppliers, and manufacturers.

   C. Verify that the documents are in the proper form, contain full information, and are notarized.

   D. Co-execute the submittals when required.

   E. Include a Table of Contents and assemble in a three D side ring binder with a durable plastic cover.

   F. Submit prior to the final Application for Payment.

   G. Time of Submittals:

      1. Make other submittals within 10 days after the Date of Substantial Completion, prior to the final Application for Payment.
2. For items of Work for which acceptance is delayed beyond the Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty or bond period.

1.9 RECORD DOCUMENTS

A. General: Do not use Record Documents for construction purposes. Protect Record Documents from deterioration and loss. Provide access to Record Documents for Engineer’s reference during normal working hours.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
   a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
   b. Accurately record information in an understandable drawing technique.
   c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
   d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.

2. Content: Types of items requiring marking include, but are not limited to, the following:
   a. Dimensional changes to Drawings.
   b. Revisions to details shown on Drawings.
   c. Depths of foundations.
   d. Locations and depths of underground utilities.
   e. Actual equipment locations.
   f. Changes made by Change Order or Construction Change Directive.
   g. Changes made following Engineer's written orders.
   h. Details not on the original Contract Drawings.
   i. Field records for variable and concealed conditions.
j. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.

4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.

5. Mark important additional information that was either shown schematically or omitted from original Drawings.

6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Engineer.

1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.

2. Refer instances of uncertainty to Engineer for resolution.

3. The Owner will furnish Contractor one set of the Contract Drawings for use in recording information.

C. Format: Identify and date each Record Drawing; include the designation "RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2. Identification: As follows:
   a. Project name.
   b. Date.
   c. Designation "RECORD DRAWINGS."
   d. Name of Engineer.
   e. Name of Contractor.

2.2 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.3 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Examples include:

1. Documentation of bedding material and foundation depths.
2. Buried utilities.
3. Special measurements.
4. Test and Inspections.
5. Surveys.
7. Inspections by authorities having jurisdiction.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and federal, State, and local environmental and antipollution regulations.

B. Cleaning:

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
   a. Clean areas disturbed by construction activities of rubbish, surplus soil, waste material, litter, and other foreign substances.
   b. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
   c. Remove tools, construction equipment, machinery, and surplus material from Project site.
   d. Leave Project clean.
   e. Remove debris from limited access spaces, including trenches, equipment vaults, manholes, and similar spaces.
C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury stumps, debris or excess materials brought to the site on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

D. If the Contractor fails to provide final cleaning, the Owner may do so and the cost thereof will be charged to the Contractor.

3.2 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.

END OF SECTION
DIVISION 2-4
SECTION 02245 – CONTROL OF WATER

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Temporary water control measures and systems for Normal Water Control and Flood Water Control including design and sequencing, construction, installation, maintenance, and removal of temporary protective facilities and appurtenances required to convey surface or subsurface water beyond or around the work area. Temporary measures and appurtenances may include:
      a. surface and subsurface dams (including cofferdams);
      b. flow diversions;
      c. special linings for erosion protection;
      d. pipes;
      e. barriers;
      f. sedimentation pools;
      g. prefabricated sediment containment devices; and
      h. watertight seals.
   2. Drawdown of water in the system of mill races and maintaining water level throughout construction.
   3. Dewatering of areas for the repair and/or reconstruction of stone masonry walls, and appurtenant work.
   4. Safe conveyance of water and flood flows.
   5. Protection of existing structures, constructed improvements, work in progress, and downstream areas during significant rainfall and high water.

B. Construct water control system in phases as required to maintain stream flows in adjacent and downstream watercourses and to protect existing structures.

C. Related Sections include the following:
   1. Division 1 Section “Temporary Erosion and Sedimentation Control.”
   2. Division 2 Section “Earthwork.”
   3. Division 3 Section “Cast-in-Place Concrete.”
   4. Division 4 Section “Stone Wall Repair and Reconstruction”
1.2 DEFINITIONS

A. Conveyance Measures: Temporary systems for conveying Normal Water flows from impoundment area to downstream areas, with a minimum capacity to safely pass a 2-year return frequency flow event for the watershed.

B. Flood Water Control: Measures in addition to Normal Flood Control measures as necessary to prevent erosion and damage to mill race walls, footbridges, and other site features.

C. Impoundment Area: Cofferdammed area of pond, lake, or canal water remaining after drawdown.

D. Normal Water Control: Control of seasonal water flows as required to maintain flow, and to access and proceed with construction operations.

1.3 PERFORMANCE REQUIREMENTS

A. General

1. Design, furnish, install, monitor, and maintain water control system capable of supporting and resisting hydrostatic pressure and flood flow.

   a. Provide professional engineering services needed to assume engineering responsibility, including preparation of Shop Drawings and a comprehensive engineering analysis by a qualified professional engineer.

2. Install water control system without damaging existing structures and other adjacent improvements.

3. Coordinate with the Owner and Engineer for the installation of weir boards at the Ames Sluice Gate to control water entering the mill race system.

B. Normal Water Control Measures:

1. Minimum Capacity: Minimize inflow to canal to the greatest extent possible through the installation of weir boards at the Ames Sluice Gate, supplemented by additional temporary sandbags as necessary to minimize leakage.

2. Install and maintain water control system at area of active wall repair / reconstruction as indicated on the Contract Drawings. Remove and reset work area water control system in sequence with the progress of Work along each mill race.

3. Install and maintain additional cofferdamming measures as necessary at the terminal ends of mill races, raceways, and flumes to prohibit backwater from the adjacent river from entering areas of Work.

C. Flood Water Control Measures:

1. Have materials and measures readily available for rapid implementation upon the threat or occurrence of food water flow in excess of Normal water flows. Protect
erodible areas from erosion and protect components of the mill race system from damage.

1.4 SUBMITTALS

A. Water Control System Plan: Include the following.
   1. Materials.
   2. Schedule of operations.
   4. Flood Water Control measures.
   5. Emergency plan.
   6. List of emergency contact personnel and 24-hour contact number(s).
   7. Submit field-required modifications to approved water control plan to Engineer, prior to actual construction of modification.

B. Submittals For Information
   1. Shop Drawings: Signed and sealed by the qualified professional engineer responsible for their preparation. Include plans, sections, and details of Normal and Flood water control systems and accessory items, locations of discharge lines; and means of discharge and disposal of water.
   2. Hydrologic and Hydraulic Computations: In support of required facilities and appurtenances, signed and sealed by the qualified professional engineer responsible for their preparation.
   3. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements before installation of water control system, and after drawdown.

1.5 PROJECT CONDITIONS

A. Ensure that any fauna (fish or waterfowl) have vacated the mill race system prior to the commencement of drawdown at the Ames Sluice Gate. Incorporate additional controls during drawdown and dewatering.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide materials that are either new or in serviceable condition, and utilize manufactured items for their intended use.

B. Control System and Measures: Provide as necessary and in accordance with the Water Control System Plan submittal.
C. Sandbags: Burlap or polypropylene, approximately one cubic yard (three feet in each dimension). Provide smaller sandbags as required to minimize leakage.

PART 3 - EXECUTION

3.1 GENERAL

A. Do not begin Work within the mill race system until water level drawdown has been achieved by through the installation of control measures at the Ames Sluice Gate, and water level depths within the active wall repair / reconstruction work area have been minimized the greatest extent practicable.

3.2 PREPARATION

A. Investigate and verify existing surface and subsurface ground water conditions at each site.

B. Evaluate type of protective facility, appurtenances, and measures required. Develop and submit Water Control System Plan.

3.3 PROTECTION – FLOOD WATER CONTROL

A. Since water level is dependent on the flow in the contributing watershed and releases from upstream dams, water level can be expected to vary. The potential for major flood events is always a possibility. Ensure the safety of the mill race system, work in progress, and downstream areas.

1. Provide additional measures as needed to control resulting increases in water surface elevations and water flows, and to convey flood flows to downstream watercourses, without damage or risk of failure to mill race walls, footbridges, and other site features.

B. Maintain personnel and equipment on-site during periods of heavy rainfall, flood watches, flashflood watches and flood warnings to mitigate potential damage during flood events.

3.4 DRAWDOWN

A. Coordinate drawdown activities at the Ames Sluice Gate with the Owner and Engineer.

3.5 NORMAL WATER CONTROL

A. Construct normal water control system of sand bag cofferdams, or other methods accepted by the Engineer, to allow construction of permanent structures and repairs.

1. Install bulkheads, culverts, ditching, sheet piles, and diking as required.
   a. Design devices for intended use and anticipated soil and water pressures.
   Provide watertight seals with devices where required, to prevent damage, water seepage, piping erosion, or collapse.
2. Perform pumping and related work.

3. Provide dewatering siphons or pumps for structures located below drawdown elevation.

4. Provide erosion and sedimentation controls to ensure no sediment is discharged to downstream watercourses.

3.6 MAINTENANCE

A. Monitor water control system daily. Promptly correct seepage, breakage, or other evidence of movement to ensure that water control system remains stable.

B. Provide additional materials, equipment and manpower, as required, to resist damage to or failure of temporary water control measures, mill race walls, and work in progress.

1. During predicted periods of significant rainfall or flooding events, provide 24-hour, on-site coverage to assure timely response.

3.7 REMOVAL AND REPAIRS

A. Correct movements or failures of temporary protection facilities and appurtenances, which prevents proper completion of permanent work, or damages existing structures and downstream areas.

B. Remove water control systems when project is substantially complete and permanent construction has progressed sufficiently to accommodate flows within the mill race system. Remove in stages to avoid damage to structures.

1. Repair or replace adjacent work damaged or displaced by construction operations at no additional cost.

END OF SECTION
SECTION 02260 - EXCAVATION SUPPORT AND PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

   A. Section includes temporary excavation support and protection systems.

   B. Related Sections:

      1. Division 1 Section "Temporary Facilities and Controls" for temporary utilities and support facilities.

      2. Division 2 Section "Control of Water" for dewatering excavations.

1.3 PERFORMANCE REQUIREMENTS

   A. Furnish, install, monitor, and maintain excavation support and protection system were required by site constraints. The system shall be capable of supporting excavation sidewalls and of resisting soil and hydrostatic pressure and superimposed and construction loads.

      1. Pre-Construction Conference: The contractor shall conduct a preconstruction conference at the project site to review existing site conditions and determine where obstructions will prevent open excavation and require the use of support and shoring systems, and the required extent of these systems.

      2. Delegated Design: The contractor is responsible for the design of the excavation support and protection system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated

      3. Prevent surface water from entering excavations by grading, dikes, or other means.

      4. Install excavation support and protection systems without damaging existing buildings, structures, and site improvements adjacent to excavation.

      5. Monitor vibrations, settlements, and movements.

1.4 SUBMITTALS

   A. Shop Drawings: For excavation support and protection system.
B. Delegated-Design Submittal: For excavation support and protection system indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Qualification Data: For qualified professional engineer.

D. Other Informational Submittals:
   1. Photographs: Show existing conditions of adjacent construction and site improvements that might be misconstrued as damage caused by the absence of, the installation of, or the performance of excavation support and protection systems. Submit before Work begins.
      a. Provide photographs showing continuous sequential sections of each wall or structure starting from one end the wall or structure and progressing to the opposite end of the wall or structure.

   2. Record Drawings: Identifying and locating capped utilities and other subsurface structural, electrical, or mechanical conditions encountered.

1.5 QUALITY ASSURANCE

A. Pre-construction Conference: Conduct conference at Project site.
   1. Review methods and procedures related to excavation support and protection system including, but not limited to, the following:
      a. Existing utilities and subsurface conditions.
         1) Including any overhead utilities and related clearance issues.
      b. Proposed excavations.
      c. Proposed equipment.
      d. Precautions and procedures for monitoring excavations for potential archaeological artifacts, contacting the Engineer and suspending work until such artifacts and excavation area(s) have been observed and surveyed, if required, by a qualified archaeologist.
      e. Monitoring of excavation support and protection system.
      f. Working area location and stability.
      g. Coordination with waterproofing.
      h. Abandonment or removal of excavation support and protection system.

1.6 PROJECT CONDITIONS

A. The contractor shall located and protect all utilities and existing features to remain for the duration of the project.
B. Interruption of Existing Utilities: Do not interrupt any utility serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:

1. Notify the Owner no fewer than three days in advance of proposed interruption of utility.
2. Do not proceed with interruption of utility without the Owner's written permission.

C. Project-Site Information: Information on existing conditions is provided for informational purposes only. Owner will not be responsible for interpretations or conclusions drawn from the data.

1. Make additional test borings and conduct other exploratory operations necessary for excavation support and protection.
2. The soils information included elsewhere in the Project Manual.

D. Survey Work: Engage a qualified land surveyor to survey adjacent existing structures, and site improvements; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

1. During installation of excavation support and protection systems, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations and positions for comparison with original elevations and positions. Promptly notify Engineer if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide materials that are either new or in serviceable condition.

B. Structural Steel: ASTM A 36/A 36M, ASTM A 690/A 690M, or ASTM A 992/A 992M.

C. Steel Sheet Piling: ASTM A 328/A 328M, ASTM A 572/A 572M, or ASTM A 690/A 690M; with continuous interlocks.

D. Wood Lagging: Lumber, mixed hardwood, nominal rough thickness of size and strength required for application.

E. Cast-in-Place Concrete: ACI 301, of compressive strength required for application.

F. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

G. Tiebacks: Steel bars, ASTM A 722/A 722M.

H. Tiebacks: Steel strand, ASTM A 416/A 416M.
PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during excavation support and protection system operations.
   1. Shore, support, and protect utilities encountered.

B. Install excavation support and protection systems to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
   1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by the owner or authorities having jurisdiction.

C. Locate excavation support and protection systems as needed to allow for construction.

D. Monitor excavation support and protection systems daily during excavation progress and for as long as excavation remains open. Promptly correct bulges, breakage, or other evidence of movement to ensure that excavation support and protection systems remain stable.

E. Promptly repair damages to adjacent facilities caused by installing excavation support and protection systems.

3.2 SOLDIER PILES AND LAGGING

A. Install steel soldier piles before starting excavation. Extend soldier piles below excavation grade level to depths adequate to prevent lateral movement. Space soldier piles at regular intervals not to exceed allowable flexural strength of wood lagging. Accurately align exposed faces of flanges to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment.

B. Install wood lagging within flanges of soldier piles as excavation proceeds. Trim excavation as required to install lagging. Fill voids behind lagging with soil, and compact.

C. Install wales horizontally at locations indicated on Drawings and secure to soldier piles.

3.3 SHEET PILING

A. Before starting excavation, install one-piece sheet piling lengths and tightly interlock to form a continuous barrier. Accurately place the piling, using templates and guide frames unless otherwise recommended in writing by the sheet piling manufacturer. Limit vertical offset of adjacent sheet piling to 60 inches. Accurately align exposed faces of sheet piling
to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment. Cut tops of sheet piling to uniform elevation at top of excavation.

3.4 TIEBACKS

A. Tiebacks: Drill, install, grout, and tension tiebacks. Test load-carrying capacity of each tieback and replace and retest deficient tiebacks.
   1. Test loading shall be observed by a qualified professional engineer responsible for design of excavation support and protection system.
   2. Maintain tiebacks in place until permanent construction is able to withstand lateral soil and hydrostatic pressures.

3.5 BRACING

A. Bracing: Locate bracing to clear columns, floor framing construction, and other permanent work. If necessary to move brace, install new bracing before removing original brace.
   1. Do not place bracing where it will be cast into or included in permanent concrete work unless otherwise approved by Engineer.
   2. Install internal bracing, if required, to prevent spreading or distortion of braced frames.
   3. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

3.6 REMOVAL AND REPAIRS

A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and bear soil and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities, and utilities.
   1. Where shoring system components are to remain, remove excavation support and protection systems to a minimum depth of 24 inches below overlaying construction and abandon remainder below.
   2. Fill voids immediately with approved backfill compacted to density specified in Division 2 Section "Earthwork."
   3. Repair or replace, as approved by Engineer, adjacent work damaged or displaced by removing excavation support and protection systems.

B. Leave excavation support and protection systems permanently in place.

END OF SECTION
SECTION 02300 - EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Protecting existing trees and vegetation to remain.
   2. Constructing slopes to be regraded and walkways to be relocated.
   3. Excavating and backfilling for wall reconstruction and appurtenant work.
   4. Tree stump removal.
   5. Topsoil stripping and screening.
   6. Disposal of unsuitable material.
   7. Disposal of surplus suitable material, if required.

B. Limits of Work: Minimize disturbance within clearing limits. Perform only as much clearing as required to complete the Work

C. Related Sections include the following:
   1. Division 1 Section “Temporary Erosion and Sedimentation Control.”
   2. Division 2 Section “Control of Water.”
   3. Division 2 Section “Excavation Support and Protection”
   4. Division 2 Section “Surface Restoration.”
   5. Division 3 Section “Cast-in-Place Concrete.”
   6. Division 4 Section “Stone Wall Repair and Reconstruction.”

1.2 DEFINITIONS

A. Backfill: Soil materials used to fill trench, structure or pit excavations.

B. Gravel Borrow: Soil material used below stone walls (<6 ft.) to be reconstructed, and as a base course for stone dust walkways.

C. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.

D. Clearing Limits: Areas depicted on the Contract Drawings within the properties constituting War Memorial Park.

E. Crushed Stone: Angular, crushed stone used in drainage and structural support applications for both temporary erosion control and permanent work.
F. Excavation: Removal of material encountered above subgrade elevations.
   1. Additional Excavation: Excavation below subgrade elevations as directed by Engineer. Additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
   2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material exceeding 1 cubic yard for bulk excavation or 3/4 cubic yard for footing, trench, and pit excavation, that cannot be removed by rock excavating equipment, without systematic drilling, ram hammering, ripping, or blasting, when permitted; and that when tested by an independent geotechnical testing agency, according to ASTM D 1586, exceeds a standard penetration resistance of 100 blows/2 inches.

I. Riprap: Crushed, sound, durable rock riprap to be furnished and placed to protect from scour erosion.

J. Site Improvements: Miscellaneous structures and site elements including pavement, curbing, fences, railings, signs, pipes, poles, wires, monuments, benches, trash receptacles, and other structures.

K. Stone Dust: Material used to form the surface course of the stone dust walkway.

L. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

M. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

N. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of weeds, roots, and other deleterious materials.

1.3 SUBMITTALS

A. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated. Prepare separate reports for each type and application of soil or borrow material.
   1. Classification according to ASTM D 2487.
   2. Laboratory compaction curve according to ASTM D 1557.
3. Origin of material.
4. Classification and laboratory compaction curve for on-site soil material, in accordance with the above requirements, when requested by the Engineer.

B. For Record Purposes.
1. Dewatering Plan: Identify location and duration of system, and process for removing particulate matter from pumped or drained water, including copy of discharge permit.

1.4 MATERIALS OWNERSHIP

A. Except for materials indicated to be stockpiled or to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from the site and disposed of legally.

1.5 QUALITY ASSURANCE


1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Engineer not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Engineer's written permission.
3. Contact “Dig Safe” before excavating. Proceed with excavation only after utility locator service completes marking of utility locations.

B. Traffic: Minimize interference with adjoining roads, 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 Owner and authorities having jurisdiction.

C. Remove and Reset Improvements: Carefully remove and protect items to be reset upon completion of construction. Restore damaged items to existing condition or better.
1. Restore existing property or structures as promptly as practicable. Do not leave restoration until end of construction period.

D. Equipment Operations
1. On paved surfaces, do not operate equipment with tracks, treads, or wheels that cut or otherwise damage paved surfaces.
2. Operate equipment with care to prevent injury to trees designated to remain, including overhanging branches and limbs.

E. Restore surfaces that have been damaged by Contractor's operations to a condition at least equal to condition before work began.

1.7 PROTECTING EXISTING STRUCTURES

A. Support and protect in place existing site improvements designated by the Engineer to be preserved in place. Existing site improvements include pipes, poles, wires, fences, monuments, benches, trash receptacles, and other structures.

1. Restore items damaged by the Contractor, at a minimum, to the condition in which the item was found immediately before beginning the Work. Restore items promptly; do not leave until end of construction.

1.8 ARCHAEOLOGICAL RESOURCES

A. Archaeological artifacts potentially exist within the limits of excavations required for this project. Should any potential artifacts be uncovered or otherwise observed, the Contractor shall immediately stop work at that location, contact the Engineer and preserve the work area until such artifacts and excavation area(s) have been observed and surveyed, if required, by a qualified archaeologist. Work shall not resume in the areas indicated to remain preserved by the archaeologist, until written authorization by the Engineer to resume.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Free of debris, waste, frozen materials, vegetation, clay and other deleterious matter; adequately graded for satisfactory compaction.

1. On-Site Material: Native soil additionally free of masses of roots, individual roots more than 18 inches long and 1/2 inch in diameter, subject to approval by the Engineer.

C. Gravel Borrow: Free of rock or gravel larger than 3 inches in any dimension; Standard Specifications, Section M1.03.0 Type b.

D. Drainage Aggregate: Standard Specifications, Section M2.01.7, with the exception that only 0-2% may pass the No. 200 Sieve.

E. Backfill and Fill: Satisfactory soil materials.
F. ¾” Crushed Stone: Standard Specification, Section M2.01.4

G. Trap Rock: Standard Specifications, Section M2.02.4

H. Stone Dust: The top course of the walk shall consist of two layers. All courses shall be compacted. The material shall consist of stone dust graded to meet Section M2.01.6 of the standard specifications.

PART 3 - EXECUTION

3.1 GENERAL

A. Reuse excavated material wherever possible, unless other material is indicated on the Contract Drawings or specified. Stockpile suitable excavated material in an appropriate location for reuse on an ongoing basis until the project is complete.

B. All operations involving the removal, clearing, protection, relocation or other handling of trees and brush shall be conducted in accordance with the latest revision of ANSI Z133.1, the national safety standard for arboricultural operations.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, site improvements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

3.3 TREE AND VEGETATION PROTECTION

A. Erect and maintain a high visibility barrier fence around drip line of individual trees (or around perimeter drip line of groups of trees) to remain. Remove fence when construction is complete.

1. Do not store construction materials, debris, or excavated material within drip line of trees to remain.

2. Do not permit vehicles, equipment, or foot traffic within drip line of trees to remain.

B. Do not excavate within drip line of trees, unless otherwise indicated.

C. Protect tree trunks adjacent to the Work from damage from equipment and construction operations; enclose trunks with wooden boxes of sufficient height.

D. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

1. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.
2. Coat cut faces of roots more than 1-1/2 inches in diameter with a root promoter.

3. Backfill with soil as soon as possible.

4. Aerate soil that has become compacted over roots of trees to be preserved.

E. Repair or replace trees and vegetation to remain that are damaged by construction operations, in a manner approved by Engineer.
   1. Employ a qualified arborist, licensed in the Commonwealth of Massachusetts, to submit details of proposed repairs and to repair damage to trees and shrubs.
   2. Replace trees and shrubs that cannot be repaired and restored to full-growth status, as determined by the qualified arborist.
   3. Replace vegetation with injuries that diminish beauty or affect growth or usefulness, with similar species and quality.

3.4 UTILITIES

A. Existing Utilities: Do not interrupt utilities unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
   1. Notify Utility Owner and Engineer not less than two days in advance of proposed utility interruptions.
   2. Do not proceed with utility interruptions without Utility Owner and Engineer's written permission.

3.5 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding or damaging Project site and surrounding area.

B. Protect excavations, backfills, fills and subgrades from softening, undermining, washout, and damage by rain or water accumulation.
   1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches. Provide positive drainage of backfill and fill.

C. See Division 2 Section “Control of Water” for additional mill race system drawdown and dewatering requirements.

3.6 EXPLOSIVES

A. Explosives: Do not use explosives.
3.7 TREE STUMP REMOVAL

A. Prior to commencement of the Work, coordinate with the Owner and Engineer to identify and mark tree stumps to be removed. Confirm with the Owner and Engineer that no electrical / overhead wire hazards exist in the vicinity of any tree stump to be removed.

B. Perform all tree stump removal operations in a safe manner, employing accepted industry methods and procedures in accordance with ANSI Z133.1.
   1. Exercise all appropriate precautionary measures for the removal of tree stumps in the vicinity of existing stone walls. Do not situate equipment or conduct operations in a manner that could compromise the stability and integrity of walls.

C. Furnish all necessary supervision, labor, vehicles, equipment and materials capable of effective and efficient removal of tree stumps.

D. Remove and reset existing site features which could interfere with tree stump removal operations in accordance with the provisions of this Section.

E. Coordinate the removal of individual tree stumps with wall repair and reconstruction operations to ensure efficient progress of the Work.

F. Cut and remove all exposed root material exposed through excavation greater than one inch in diameter.

G. Do not extend root cutting and removal beyond 10 feet upland from the edge of any wall, regardless of root diameter.

H. Do not allow any stumps or other debris to accumulate that could potentially create a hazard to pedestrians, cyclists, or motorists, and do not allow any such material to remain on the Site for a duration longer than the minimum necessary.

I. Fill depressions caused by tree stump removal operations with satisfactory soil material, unless further excavation or earthwork is indicated.
   1. Place fill material in horizontal layers not exceeding 8-inch loose depth, and compact each layer to a density equal to adjacent original ground.
   2. Coordinate backfilling with work items of Related Sections to re-establish existing grades in an efficient and timely manner.

3.8 TOPSOIL STRIPPING

A. Strip topsoil from areas to be regraded or resurfaced.

B. Screen topsoil material with a 2-inch screen to remove roots, vegetation, and unsuitable material. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water.
   1. Do not stockpile topsoil within drip line of remaining trees.
2. Line stockpile with silt fence or hay bales.
3. Dispose of unsuitable screened material.
4. Stockpile surplus topsoil and allow for respreading deeper topsoil.

3.9 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.

B. Remove and reset existing site improvements including fences, railings, and signs that interfere with the Contractor's operations.
   1. Restore items damaged by the Contractor, at a minimum, to the condition in which the item was found immediately before beginning the Work.
   2. Restore items promptly; do not leave until end of construction.

3.10 STONE DUST WALKWAY CONSTRUCTION

A. Strip topsoil or existing path from areas to be regarded or resurfaced.

B. Prepare compacted subgrade.

C. Base Course
   1. The layer of crushed stone shall be rolled to reach compaction and thickness indicated on Contract Drawings.
   2. Compaction shall be achieved by rolling, except in the areas inaccessible to rollers. Equivalent compaction shall be accomplished by the use of mechanical tampers, until there is no further evidence of consolidation and all roller marks are eliminated. Depressions or high areas which develop during rolling shall be corrected to produce a surface with no visible variations.

D. Top Course
   1. Lay stone dust top course in to courses. Both courses shall be compacted to half of thickness indicated on Contract Drawings. Rolling and compaction shall be as for the base course.
   2. Top course shall be graded flush with surrounding ground surface, to ensure positive drainage to lawn and to prevent concentration of flow on the walkway.

3.11 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavation to subgrade elevations regardless of the character of surface and subsurface conditions encountered, including rock, soil materials, and obstructions.
1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

3.12 APPROVAL OF SUBGRADE

A. Notify Engineer when excavations have reached required subgrade.

B. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

1. Additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer.

3.13 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill may be used when approved by Engineer.

1. Fill unauthorized excavations under other construction or utility pipe as directed by Engineer.

3.14 STORAGE OF SOIL MATERIALS

A. Stockpile borrow materials and satisfactory excavated soil materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Prevent windblown dust. Provide erosion control measures (baled hay or silt fence) around the entire perimeter of each stockpile.

1. Stockpile soil materials away from the edge of excavations. Do not store soil materials within the drip line of trees to remain.

3.15 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade.
2. Removing concrete formwork.
3. Removing trash and debris.
4. Removing temporary shoring and bracing, and sheeting.
3.16 FILL

A. Preparation: Remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills.

B. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 3 horizontal so fill material will bond with existing material.

C. Place and compact fill material in layers to required elevations.

3.17 MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
   1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
   2. Remove and replace, or scarify and air-dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.18 COMPACTION OF BACKFILLS AND FILLS

A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:
   1. Under structures, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill material at 95 percent.
   2. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill material at 90 percent.

3.19 GRADING

A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to match existing grades, allowing for the provision of surface restoration (e.g., loam and seed).
   1. For elements of the Work to be completed under Division 2 Section “Permanent Erosion and Sedimentation Control,” provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Grading: Slope grades to direct water away from structures and to prevent ponding.

3.20 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.

C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum shall be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Engineer.

D. Testing agency shall test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests shall be performed at the following locations and frequencies:

1. Leveling pad / footing (for Wall Reconstruction): For each compacted backfill layer, at least one test for each 100 feet or less of wall length, but no fewer than two tests.

2. Wall Reconstruction - back excavation: For each compacted backfill layer, at least one test for each 100 feet or less of wall length, but no fewer than two tests.

E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

3.21 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.
3.22 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Transport surplus satisfactory soil to designated storage areas on Owner’s property. Stockpile or spread soil as directed by Engineer.

1. Remove waste material, including unsatisfactory soil, trees, brush, roots, demolished materials, trash, and debris from the Site. Dispose of all such materials in accordance with local, state, and federal laws and regulations.

END OF SECTION
SECTION 02925 - SURFACE RESTORATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Providing and grading topsoil.
   2. Seeding (or hydroseeding).
   3. Lawn and grass renovation.
   4. Removing and resetting existing timber rail fence and other park monuments/features (as indicated on the Contract Drawings and where required of execution of other Items of Work).
   5. Mulching.

B. Related Sections include the following:
   1. Division 1 Section “Temporary Erosion and Sedimentation Control.”.
   2. Division 2 Section “Earthwork.”

1.2 DEFINITIONS

A. Finish Grade: Elevation of finished surface of topsoil.
B. Lawn: Newly cleared and/or graded area to be seeded.
C. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath topsoil.

1.3 SUBMITTALS

A. Material or Product Certificates: For topsoil, soil amendments, fertilizers, seed, and mulch, signed by material or product manufacturer.
B. Material Test Reports: For existing native surface topsoil and imported topsoil to be used as a planting soil.

1.4 QUALITY ASSURANCE

A. Soil-Testing Laboratory Qualifications: An independent or university laboratory recognized by the State Department of Agriculture, such as the University of Massachusetts Amherst (UMass Extension) Soil Testing Laboratory or equivalent, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
B. Soil Analysis: For on-site topsoil to be used as a planting soil, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of the soil.

1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
2. The depth, location, and number of samples to be taken shall be per instruction from Engineer for soil to be used for planting purposes.
   a. Based upon the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
   b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

1.5 DELIVERY, STORAGE, AND HANDLING
A. Seed, Lime, and Fertilizer: Deliver in original sealed, labeled, and undamaged containers.

1.6 SCHEDULING
A. Planting Restrictions: Plant during one of the following periods.
   1. Spring Planting: April 1 to June 1.
   2. Fall Planting: August 15 to October 15.
B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

1.7 LAWN MAINTENANCE
A. Begin maintenance immediately after each area is planted and continue until a satisfactory lawn is established.
B. Maintain and establish lawn by watering, fertilizing, weeding, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn.
   1. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch. Anchor as required to prevent displacement.
   2. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Prevent walking over muddy or newly planted areas.
PART 2 - PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysts’ (AOSA) “Journal of Seed Technology; Rules for Testing Seeds” for purity and germination tolerances.

B. Seed Mixture: As indicated on the Contract Drawings.

2.2 TOPSOIL

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 6 percent and a maximum of 20 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.

1. Topsoil Source: Reuse surface soil stockpiled on-site. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

   a. Supplement with imported topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs or marshes.

2.3 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:

1. Provide lime in form of dolomitic limestone, Class S, with a minimum of 95 percent passing a No. 100 sieve.

2.4 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: 50 to 60 percent of dry weight.

   a. Commonwealth of Massachusetts, Department of Environmental Protection approved when derived from food and agricultural residues, animal manures, and sewage sludge.

2. Approved Products: AllGro, 4 Liberty Lane West, Hampton, NH 03842 (1-800-662-2440), or approved equal.
B. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

2.5 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, hay or threshed straw of wheat, rye, oats, or barley; free of weeds, reeds, and twigs; maximum moisture content of 15 percent. Do not use salt hay.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive lawns and grass for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect structures, utilities, footpaths, pavements, walls and other facilities (including trees, shrubs, and plantings to remain) from damage caused by planting operations.
   1. Protect adjacent and adjoining areas from hydroseeding overspray.

B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 LAWN PREPARATION

A. Limit lawn subgrade preparation to areas to be restored or newly planted.

B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter from the Site and dispose of legally.
   1. Where applicable, amend subgrade to allow for installation of GrassPave2 geocellular polyethylene confinement system (or approved equal) including gravel base. Install as indicated on the Contract Drawings and in accordance with manufacturer’s installation instructions.
   2. Spread topsoil to a depth of 4 inches minimum but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if topsoil or subgrade is frozen, muddy, or excessively wet.
3.3 SURFACE RESTORATION

C. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, prepare surface soil in accordance with Article “Lawn Renovation”.

D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.

E. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

F. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

3.4 SEEDING

A. Sow seed with spreader or seeding machine, or by hydraulic spray machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.

1. Do not use wet seed or seed that is moldy or otherwise damaged.

B. Sow seed at the rate of indicated on the drawings.

C. Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray.

D. Protect seeded areas with slopes exceeding 1:2.5 with erosion-control blankets installed and stapled according to manufacturer's written instructions.

E. Protect seeded areas with slopes not exceeding 1:3 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.

1. Bond straw mulch by spraying with non-asphaltic tackifier at manufacturer's recommended rate. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.

3.5 SATISFACTORY LAWNS

A. Satisfactory Seeded Lawn: A healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 square feet and bare spots not exceeding 3 by 3 inches.

B. Reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.
3.6 REMOVAL AND RESETTING OF EXISTING PARK MONUMENTS/FEATURES

A. Remove existing timber rail fence, monuments, and other park elements at locations indicated and as required to complete other Items of the Work, including but not limited to tree stump removal and wall reconstruction.

B. Stockpile elements within the construction staging area or at location(s) as directed by the Engineer.

C. Reset materials to their original locations and dimensions. Replace any elements damaged by removal, handling, stockpiling, or resetting in-kind.

3.7 CLEANUP, PROTECTION, AND REPAIR

A. Promptly remove soil and debris created by lawn work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect barricades and warning signs as required to protect newly planted areas from construction, and vehicular and pedestrian traffic. Maintain barricades throughout maintenance period and remove after lawn is established.
   1. Where seeded areas have been compacted or young plants damaged, rework soil to a suitable seedbed, reseed, and reblanket with full amounts of the specified materials.

C. Remove erosion-control measures after grass establishment period.

END OF SECTION
SECTION 04902 – STONE MASONRY RESTORATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies the following:
   1. Rebuilding existing stone retaining walls laid in dry or mortared joints, as indicated or where directed.
   2. Preliminary cleaning, including removing plant growth adjacent to and within stone masonry structures.

B. Related Sections include the following:
   1. Division 2 Section "Earthwork" for excavation and backfill.

1.2 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed stone wall systems similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

1.3 SUBMITTALS

A. Photographs. Submit photographs which indicate proposed limits of stone masonry reconstruction, and shape and size of existing stone structures.

B. Shop Drawings: For the following:
   1. Work plan indication the general sequence of wall repair and intended methods and procedures.
   2. Replacement and salvaged stone, showing relation of existing to new units.
      a. Provide locations within the site where the salvaged stone will be obtained.
      b. Source of replacement stone, including photos of existing walls and photos of replacement stones for comparison and approval.
   3. Mortar Mix Design and all associated products required to produce the mix.

C. Mockups: Prepare mockups of restoration and cleaning to demonstrate aesthetic effects and set quality standards for materials and execution and for fabrication and installation.
   1. Stone Repair: Prepare sample areas for each type of stone indicated to have repair work performed. If not otherwise indicated, size each mockup not smaller than approximately 48 inches in least dimension. Erect sample areas in existing structures
unless otherwise indicated, to demonstrate quality of materials, workmanship, and blending with existing work. Include the following as a minimum:

a. Replacement stone: Incorporated at replacement stone into at least 20% of the mockup surface area.

b. Mortar: Incorporated into at least 20% of the mockup.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Engineer specifically approves such deviations in writing.

3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

D. Qualification Data: For restoration specialists including field supervisors and restoration workers.

1.4 QUALITY ASSURANCE

A. Restoration Specialist Qualifications: Engage an experienced stone restoration firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience installing standard unit masonry or new stone masonry is not sufficient experience for stone restoration work.

1. Field Supervision: Restoration specialist firms shall maintain experienced full-time supervisors on Project site during times that stone restoration and cleaning work is in progress. Supervisors shall not be changed during Project except for causes beyond control of restoration specialist firm.

2. Restoration Worker Qualifications: Persons who are experienced and specialize in restoration work of types they will be performing.

B. Restoration Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of restoration work including protection of surrounding materials and Project site.

C. Cleaning Program: Prepare a written cleaning program that describes cleaning process in detail, including materials, methods, and equipment to be used, protection of surrounding materials, and control of runoff during operations.

D. Cleaning and Repair Appearance Standard: Cleaned and restored areas are to have an integral appearance with existing as viewed from 20 feet away by Engineer. Perform additional general cleaning, and spot cleaning of small areas that are noticeably different, so that surface blends smoothly into surrounding areas.

E. Pre-Installation Conference: Conduct conference at the site.
1. Review methods and procedures related to stone restoration and cleaning including, but not limited to, the following:
   b. Materials, material application, sequencing, tolerances, and required clearances.

F. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver replacement stone units to Project site strapped together in suitable packs or pallets or in heavy-duty crates.

1.6 PROJECT CONDITIONS

A. Weather Limitations for Stone Placement: Proceed with installation only when existing and forecasted weather conditions permit stone restoration and cleaning work to be performed according to manufacturers' written instructions and specified requirements.

1. For work requiring mortar, comply with the following:
   a. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace stone masonry damaged by frost or freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
      1) Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

B. Protection of Stone Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed stone masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.

C. Stain Prevention: Immediately remove mortar, concrete and soil to prevent them from staining the face of stone masonry.
PART 2 - PRODUCTS

2.1 STONE MATERIALS

A. Stone: Provide replacement stone of variety, color, texture, grain, veining, finish, size, and shape to match existing stone and is acceptable to the Engineer.

1. Provide stone that is hard, durable, resistant to weathering action, reasonably fine grained, and free from structural defects that would impair its strength or durability. Capable of being cut to lines and surfaces, either plain or curved, as may be required.

2. Stone segments repaired with cement or other materials will be rejected.

3. For existing stone that exhibits a range of colors, texture, grain, veining, finishes, sizes, or shapes, provide stone that proportionally matches that range rather than stone that matches an individual color, texture, grain, veining, finish, size, or shape within that range.

B. Cutting New Stone: Avoid cutting stone to the greatest extent possible. Only cut stone when it is absolutely necessary to complete the work.

C. Salvaged Stone: Obtain salvaged stone from the site.

1. Clean off residual soil, debris, and mortar if present.

2.2 MORTAR

A. Furnish the following as needed for production mortar where needed for the restoration of existing mortared stone masonry

1. Portland cement and potable water. Unless the engineer allows an alternate, use either type I, IS, I(SM), or IP portland cement.

2. Masonry cement conforming to ASTM C 91, type S.

3. Hydrated lime conforming to ASTM C 207.

4. Aggregate: ASTM C 144 and as follows:

   a. For pointing mortar, use aggregate graded with 100 percent passing No. 16 sieve.

5. Sand.

   a. Use sand uniformly graded from coarse to fine conforming to the following gradation requirements:

   | SIEVE PERCENT PASSING BY WEIGHT |
   | No. 8  | 95-100 |
   | No. 100| 25 maximum |
   | No. 200| 10 maximum |
B. Water: Potable.

C. Use mortar for laying the stone and pointing composed of 3 parts sand for mortar and one part of any one of the following materials, by volume: masonry cement, a mixture of 50 percent portland cement and 50 percent masonry cement, or a mixture of 50 percent portland cement and 50 percent hydrated lime.

D. Use a machine to mix the mortar unless the engineer allows otherwise. Prepare machine-mixed mortar in an engineer-approved mixer and mix not less than 1 1/2 minutes. If preparing hand-mixed mortar, mix the sand and cement thoroughly in a clean, tight mortar box until uniform in color, then add clean water in a quantity that forms a stiff paste. Do not use mortar mixed longer than 30 minutes or that develops its initial set.

E. Pigments: Provide pigment as needed to match the color of the existing mortar.
   1. Use only pigments with a record of satisfactory performance in stone masonry mortar.

2.3 CLEANING MATERIALS

A. Water: Potable.

B. Stiff bristle brushes and brooms.

2.4 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.

B. Coarse Aggregate: ASTM D 692, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.

C. Fine Aggregate: ASTM D 1073, sharp-edged natural sand or sand prepared from stone, gravel, 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.

D. Mineral Filler: ASTM D 242, rock or slag dust, hydraulic cement, or other inert material.

PART 3 - EXECUTION

3.1 GENERAL

A. Reconstruct stone masonry structures in the location and to the dimensions indicated or as directed.
3.2 PREPARATION

A. Check adjacent areas, and stream bed and downstream locations for any stones missing from the walls and structures. Inform Engineer of shaped stones that appear to have been displaced from existing stone masonry walls and structures.

1. Upon approval of the Engineer, remove stones and check for size and fit in existing structures. Stones that will not be used must be returned to their original location.

3.3 STONE MASONRY STRUCTURE REMOVAL AND REPLACEMENT

A. Remove stone masonry from the walls requiring restoration and reconstruction in a top down manner. Remove stone to the extent necessary to reconstruct or restore the wall.

1. Salvage stones from structure and protect from damage during reconstruction.
2. Do not remove stones from the site.

B. Support and protect remaining stonework that surrounds or is adjacent to area of removed stone. Maintain adjoining construction in an undamaged condition.

C. Notify Engineer of unforeseen detrimental conditions including voids, cracks, bulges, and loose units.

D. Remove in an undamaged condition whole stone units.

1. Remove loose particles and soil from stone by cleaning with hand chisels, brushed, and water.
2. Store stone for reuse. Store off ground, on skids, and protected from weather.
3. Deliver cleaned stone not required for reuse to Owner.

E. Construct wall footings in accordance with Section 03300 – Cast-In-Place Concrete.

1. Engineer to approve of wall footings prior to wall reconstruction.

F. Clean stones before resetting in stone masonry structure. Reset stones to previous locations and in appropriate order.

1. Provide new stones where existing stones are missing. Replace damaged stone with other removed stone and salvaged stone in good quality, wherever possible, or with new replacement stone matching existing stone, including size.

G. Lay stone to line and in courses to match existing. Use large, selected stones for bottom or foundation courses.

3.4 CLEANING

A. Water Wash: Use cold potable water, brushes and brooms to remove soil and debris.
3.5 ADJUSTING AND CLEANING

A. Remove damaged stones, defective joints, and stone that does not match approved samples.

END OF SECTION