

**Augusta Superior Court  
Parking Lot Repair**

**Bid Documents**

**Augusta, Maine**

Owner:  
State of Maine  
State of Maine Judicial Branch  
Administrative Office of the Courts  
PO Box 4820  
Portland ME 04112-4820S

Prepared by:



Walsh Engineering Associates, Inc.  
One Karen Drive, Suite 2A  
Westbrook, Maine 04092

**January 18, 2021**

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**Bid Set**  
**January 18, 2021**

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**00 11 13**  
**Notice to Contractors**

**Augusta Superior Court Parking Lot Repair**

BGS #3247

*Construction will include the installation of a retaining wall and underdrain system, removal and replacement of pavement, granite curbing, guardrail and repaving of parking lot, regrading and loam and seed as shown on the plans.*

The cost of the work is approximately \$ 120,000. The work to be performed under this contract shall be completed on or before the Final Completion date of *30 June 2021*.

1. Submit bids on a completed Contractor Bid Form, plus bid security when required, all scanned and included as an attachment to an email with the subject line marked "**Bid for Augusta Superior Court Parking Lot Repair**" and addressed to the Bid Administrator at: BGS.Architect@Maine.gov, so as to be received no later than **2:00:00 p.m.** on **February 8, 2021**.

Bid submissions will be opened and read aloud at the time and date noted above at the Bureau of General Services office, accessible as a video conference call. Those who wish to participate in the call must submit a request for access to BGS.Architect@Maine.gov.

Any bid received after the noted time will not be considered a valid bid and will remain unopened. Any bid submitted by any other means will not be considered a valid bid. The Bid Administrator may require the Bidder to surrender a valid paper copy of the bid form or the bid security document in certain circumstances.

Questions on the bid opening process shall be addressed to the Bid Administrator: Joseph H. Ostwald, Director, Division of Planning, Design & Construction, Bureau of General Services, 77 State House Station, Augusta, Maine 04333-0077, BGS.Architect@Maine.gov.

2. The bid shall be submitted on the Contractor Bid Form (section 00 41 13) provided in the Bid Documents. The Owner reserves the right to accept or reject any or all bids as may best serve the interest of the Owner.
3. Bid security *is required* on this project.  
If noted above as required, the Bidder shall include a satisfactory Bid Bond (section 00 43 13) or a certified or cashier's check for 5% of the bid amount with the completed bid form submitted to the Owner. The Bid Bond form is available on the BGS website.
4. Performance and Payment Bonds *are not required* on this project.  
If noted above as required, the selected Contractor shall furnish a 100% contract Performance Bond (section 00 61 13.13) and a 100% contract Payment Bond (section 00 61 13.16) in the contract amount to cover the execution of the Work. Bond forms are available on the BGS website.
5. Filed Sub-bids *are not required* on this project.
6. There *are no* Pre-qualified General Contractors on this project.  
If Pre-qualified General Contractors are identified for this project, the name of each company, with their city and state, are listed below.

**00 11 13**  
**Notice to Contractors**

7. An on-site pre-bid conference *will* be conducted for this project.  
If a pre-bid conference is scheduled, it is *optional* for General Contractors and optional for Subcontractors and suppliers. Contractors who arrive late or leave early for a mandatory meeting may be prohibited from participating in this meeting and bidding. *27 January 2021 2:00 PM at project site.*
8. Property Insurance for this construction contract, described in the Insurance Requirements section of the General Conditions of the contract, shall be *Non-standard project insured by Contractor.*
9. Bid Documents - full sets only - will be available on or about *18 January 2021* and may be obtained *at no cost by Dropbox Download* from:  
*Walsh Engineering Associates*  
*1 Karen Drive, Suite 2A*  
*Westbrook ME 04092*  
*(207) 553-9898 norm@walsh-eng.com*
10. Bid Documents may be examined at:  

<i>AGC Maine</i> <i>188 Whitten Road</i> <i>Augusta, ME 04332</i> <i>Phone 207-622-4741 Fax 207-622-1625</i>	<i>Construction Summary</i> <i>734 Chestnut Street</i> <i>Manchester, NH 03104</i> <i>Phone 603-627-8856 Fax 603-627-4524</i>
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**00 21 13**  
**Instructions to Bidders**

**1. Bidder Requirements**

- 1.1 A bidder is a Contractor who is qualified, or has been specifically pre-qualified by the Bureau of General Services, to bid on the proposed project described in the Bid Documents.
- 1.2 Contractors and Subcontractors bidding on projects that utilize Filed Sub-bids shall follow the requirements outlined in these Bid Documents for such projects. See Section 00 22 13 for additional information.
- 1.3 Contractors and Subcontractors are not eligible to bid on the project when their access to project design documents prior to the bid period distribution of documents creates an unfair bidding advantage. Prohibited access includes consultation with the Owner or with design professionals engaged by the Owner regarding cost estimating, constructability review, or project scheduling. This prohibition to bid applies to open, competitive bidding or pre-qualified contractor bidding or Filed Sub-bidding. The Bureau may require additional information to determine if the activities of a Contractor constitute an unfair bidding advantage.
- 1.4 Each bidder is responsible for becoming thoroughly familiar with the Bid Documents prior to submitting a bid. The failure of a bidder to review evident site conditions, to attend available pre-bid conferences, or to receive, examine, or act on addenda to the Bid Documents shall not relieve that bidder from any obligation with respect to their bid or the execution of the work as a Contractor.
- 1.5 Prior to the award of the contract, General Contractor bidders or Filed Sub-bidders may be required to provide documented evidence to the Owner or the Bureau showing compliance with the provisions of this section, their business experience, financial capability, or performance on previous projects.
- 1.6 The selected General Contractor bidder will be required to provide proof of insurance before a contract can be executed.
- 1.7 Contracts developed from this bid shall not be assigned, sublet or transferred without the written consent of the Owner.
- 1.8 By submitting a bid the Contractor attests that it has not been declared ineligible to bid on State of Maine projects. The Director of the Bureau of General Services may disallow award of this contract to any Contractor if there is evidence that the Contractor or any of its Subcontractors, through their own fault, have been terminated, suspended for cause, debarred from bidding, agreed to refrain from bidding as part of a settlement, have defaulted on a contract, or had a contract completed by another party.
- 1.9 The Contractor attests that it is not presently indicted for or otherwise criminally or civilly charged by a Federal, State or local government entity with commission of any of the following offenses and has not within a three-year period preceding this bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction, or contract under a public transaction, violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

**00 21 13**  
**Instructions to Bidders**

- 1.10 The Contractor shall not make any award or permit any award (subgrant or contract) at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs or State of Maine projects.
2. Authority of Owner
- 2.1 The Owner reserves the right to accept or reject any or all bids as may best serve the interest of the Owner.
- 2.2 Subject to the Owner's stated right to accept or reject any or all bids, the Contractor shall be selected on the basis of the lowest sum of an acceptable Base Bid plus any Alternate Bids the Owner elects to include. An acceptable bid is one from a responsive and responsible bidder.
3. Submitting Bids and Bid Requirements
- 3.1 Each bid shall be submitted on the forms provided in the Bid Documents.
- 3.2 Each bid shall be valid for a period of thirty calendar days following the Project bid closing date and time.
- 3.3 A bid that contains any escalation clause is considered invalid.
- 3.4 Bidders shall include a Bid Bond or other approved bid security with the bid form submitted to the Owner when the bid form indicates such bid security is required. The bond value shall be 5% of the bid amount. The form of bond is shown in section 00 43 13.
- 3.5 Bidders shall include the cost of Performance and Payment Bonds in the bid amount if the bid amount will result in a construction contract value over \$125,000, inclusive of alternate bids that may be awarded in the contract. Pursuant to 14 M.R.S.A., Section 871, Public Works Contractors' Surety Bond Law of 1971, subsection 3, the selected Contractor is required to provide these bonds before a contract can be executed. The form of bonds are shown in section 00 61 13.13 and 00 61 13.16.
- 3.6 Bidders may modify bids in writing, by the same means as the original bid submission, prior to the bid closing time. Such written amendments shall not disclose the amount of the initial bid. If so disclosed, the entire bid is considered invalid.
- 3.7 Bidders shall acknowledge on the bid form all Addenda issued in a timely manner. The Consultant shall not issue Addenda affecting the content of the bid less than 72 hours prior to the bid closing time. Addenda shall be issued to all companies who are registered holders of Bid Documents.
- 3.8 A bid may be withdrawn without penalty if a written request by the bidder is presented to the Owner prior to the bid closing time. Such written withdrawal requests are subject to verification as required by the Bureau. After the bid closing time, such written withdrawal requests may be allowed in consideration of the bid bond or, without utilizing a bid bond, if the Contractor

**00 21 13**  
**Instructions to Bidders**

provides documented evidence to the satisfaction of the Bureau that factual errors had been made on the bid form.

- 3.9 In the event State of Maine Offices unexpectedly close on the published date of a public bid opening in the location of that bid opening, prior to the time of the scheduled deadline, the new deadline for the public bid opening will be the following business day at the originally scheduled hour of the day, at the original location. Official closings are posted on the State of Maine government website.
- 3.10 The Owner may require, in a Notice of Intent to Award letter to the apparent low bidder, a Schedule of Values, Project Schedule, and List of Subcontractors and Suppliers as both a demonstration of capability of the Bidder and as a condition of award.
- 3.11 Projects which require a State of Maine wage determination will include that schedule as part of the Bid Documents. See section 00 73 46, if such rates are required.
- 3.12 Projects which require compliance with the Davis-Bacon Act are subject to the regulations contained the Code for Federal Regulations and the federal wage determination which is made a part of the Bid Documents. See section 00 73 46, if such rates are required.
- 3.13 The Owner is exempt from the payment of Maine State sales and use taxes as provided in 36 M.R.S. §1760 (1). The Contractor and Subcontractors shall not include taxes on exempt items in the construction contract.

**00 41 13**  
**Contractor Bid Form**

**Augusta Superior Court Parking Lot Repair**

#3247

Bid Form submitted by: *email only to email address below*

Bid Administrator:

*Jill Inistasi*

BGS.Architect@Maine.gov

Bureau of General Services

111 Sewall Street, Cross State Office Building, 4th floor

77 State House Station

Augusta, Maine 04333-0077

Bidder:

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

Printed name and  
title: \_\_\_\_\_

Company name: \_\_\_\_\_

Mailing address: \_\_\_\_\_

City, state, zip code: \_\_\_\_\_

Phone number: \_\_\_\_\_

Email address: \_\_\_\_\_

State of  
incorporation,  
if a corporation: \_\_\_\_\_

List of all partners,  
if a partnership: \_\_\_\_\_

The Bidder agrees, if the Owner offers to award the contract, to provide any and all bonds and certificates of insurance, as well as Schedule of Values, Project Schedule, and List of Subcontractors and Suppliers if required by the Owner, and to sign the designated Construction Contract within twelve calendar days after the date of notification of such acceptance, except if the twelfth day falls on a State of Maine government holiday or other closure day, or a Saturday, or a Sunday, in which case the aforementioned documents must be received before 12:00 noon on the first available business day following the holiday, other closure day, Saturday, or Sunday.

As a guarantee thereof, the Bidder submits, together with this bid, a bid bond or other acceptable instrument as and if required by the Bid Documents.

**00 41 13**  
**Contractor Bid Form**

1. The Bidder, having carefully examined the form of contract, general conditions, specifications and drawings dated January 18, 20210, prepared by Walsh Engineering Associates, Inc. for Augusta Superior Court Parking Lot Repair, as well as the premises and conditions relating to the work, proposes to furnish all labor, equipment and materials necessary for and reasonably incidental to the construction and completion of this project for the **Base Bid** amount of:

\$ \_\_\_\_\_ .00

2. Allowances *are not included* on this project.  
*No Allowances*

\$ 0.00

3. Alternate Bids *are not included* on this project.  
*No Alternate Bids*

Any dollar amount line below that is left blank by the Bidder shall be read as a bid of **\$0.00**.

*1 Not Used* \$ \_\_\_\_\_ .00

*2 Not Used* \$ \_\_\_\_\_ .00

*3 Not Used* \$ \_\_\_\_\_ .00

*4 Not Used* \$ \_\_\_\_\_ .00

4. The Bidder acknowledges receipt of the following addenda to the specifications and drawings:

Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_

Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_

Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_

Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_

5. Bid security *is required* on this project.

If noted above as required, the Bidder shall include with this bid form a satisfactory Bid Bond (section 00 43 13) or a certified or cashier's check for 5% of the bid amount with this completed bid form submitted to the Owner.

6. Filed Sub-bids *are not required* on this project.

If noted above as required, the Bidder shall include with this bid form a list of each Filed Sub-bidder selected by the Bidder on the form provided (section 00 41 13F).

**00 43 13  
Contractor Bid Bond**

Bond No.: insert bond number

We, the undersigned, insert company name of Contractor, select type of entity of insert name of municipality in the State of insert name of state as principal, and insert name of surety as Surety, are hereby held and firmly bound unto select title of obligee in the penal sum of five percent of the bid amount, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns, signed this insert date, i.e.: 8th day of select month, select year, which is the same date as that of the first specified bid due date, or subsequent bid due date revised by addendum.

The condition of the above obligation is such that whereas the principal has submitted to the Owner, or State of Maine, to a certain bid, attached hereto and hereby made a part hereof, to enter into a contract in writing, for the construction of insert name of project as designated in the contract documents

Now therefore:

If said bid shall be rejected, or, in the alternate,

If said bid shall be accepted and the principal shall execute and deliver a contract in the form of contract attached hereto, properly completed in accordance with said bid, and shall furnish a bond for the faithful performance of said contract, and for the payment of all persons performing labor or furnishing material in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void.

Otherwise, the same shall remain in force and effect- it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received hereby stipulates and agrees that the obligation of said Surety and its bonds shall be in no way impaired or affected by any extension of the time within which the Obligee may accept such bid and said Surety does hereby waive notice of any such extension.

**00 43 13  
Contractor Bid Bond**

In witness whereof, the principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set above.

Signed and sealed this *insert date, i.e.: 8th* day of *select month, select year*, which is the first specified bid due date, or subsequent bid due date revised by addendum.

**Contractor**

\_\_\_\_\_  
(Signature)

*insert name and title*

*insert company name*

*insert address*  
*insert city state zip code*

**Surety**

\_\_\_\_\_  
(Signature)

*insert name and title*

*insert company name*

*insert address*  
*insert city state zip code*

If Contractor is a partnership, all partners shall execute the bond. A power of attorney document indicating that it still is in full force and effect shall be provided by the person executing this bond.

## State of Maine CONSTRUCTION CONTRACT

### Large Construction Project

*(Contract value \$50,000 or greater. Contract includes Project Manual, Specifications and Drawings)*

Agreement entered into by and between the insert contracting entity name hereinafter called the **Owner** and insert Contractor company name hereinafter called the **Contractor**.

BGS Project No.: insert number assigned by BGS (not the PIP number)

Other Project No.: \_\_\_\_\_

For the following Project: title of project shown on documents at facility or campus name, municipality, Maine.

The Specifications and the Drawings have been prepared by firm name, acting as Professional-of-Record and named in the documents as the Consultant Architect or Engineer.

The *Owner* and *Contractor* agree as follows:

#### ARTICLE 1 COMPENSATION AND PAYMENTS

1.1 The Owner shall pay the Contractor to furnish all labor, equipment, materials and incidentals necessary for the construction of the Work described in the Specifications and shown on the Drawings the Contract Amount as shown below.

Base Bid	<u>\$0.00</u>
<u>Alternate Bid number and name or "no Alternates"</u>	<u>\$0.00</u>
<u>Alternate Bid number and name or "no Alternates"</u>	<u>\$0.00</u>
<u>Alternate Bid number and name or "no Alternates"</u>	<u>\$0.00</u>
<u>Alternate Bid number and name or "no Alternates"</u>	<u>\$0.00</u>
<u>Alternate Bid number and name or "no Alternates"</u>	<u>\$0.00</u>
<b>Total Contract Amount</b>	<b><u>\$0.00</u></b>

1.2 The Contractor's requisition shall contain sufficient detail and supporting information for the Owner to evaluate and support the payment requested.

1.2.1 Payments are due and payable twenty-five working days from the date of receipt of a Contractor requisition which is approved by the Owner.

1.2.2 Provisions for late payments will be governed by 5 M.R.S. Chapter 144, *Payment of Invoices Received from Business Concerns*, and interest shall be calculated at 1% per month.

#### ARTICLE 2 TIME OF COMPLETION

2.1 The Work of this Contract shall be completed on or before the Final Completion date of **31 December 2021**.

The following abbreviated definitions are for reference only, see Section 00 71 00 *Definitions* for actual definitions.

Substantial Completion: date of first beneficial use by the Owner.

Final Completion: the Contractor's final completion deadline.

Contract Expiration: the Owner's deadline for management of contract accounts.

### ARTICLE 3 INELIGIBLE BIDDER

3.1 By signing this contract the Contractor attests that it has not been declared ineligible to bid on State of Maine projects. The Bureau of General Services may disallow award of this contract to any Contractor if there is evidence that the Contractor or any of its Subcontractors, through their own fault, have been terminated, suspended for cause, debarred from bidding, agreed to refrain from bidding as part of a settlement, have defaulted on a contract, or had a contract completed by another party.

3.2 By signing this contract the Contractor attests that it is not presently indicted for or otherwise criminally or civilly charged by a Federal, State or local government entity with commission of any of the following offenses and has not within a three-year period preceding this bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction, or contract under a public transaction, violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

3.3 The Contractor shall not make any award or permit any award (subgrant or contract) at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs or State of Maine projects.

### ARTICLE 4 CONTRACTOR'S RESPONSIBILITIES

4.1 On this project, the Contractor shall furnish the Owner the appropriate contract bonds in the amount of 100% of the Contract Sum. Contract bonds are mandated if the Contract Sum exceeds \$125,000, or if bonds are specifically required by the Contract Documents.

4.2 The Owner has verified the appropriate coverage with the State of Maine Division of Risk Management, and selected the proper option as follows. Property Insurance for this construction contract, described in the Insurance Requirements section of the General Conditions of the contract, shall be Non-standard project insured by Contractor.

4.3 The Contractor shall comply with all laws, codes and regulations applicable to the Work.

4.4 The Contractor shall acquire all permits and third-party approvals applicable to the Work not specifically identified as provided by the Owner. Costs for Contractor-provided permits and third-party approvals shall be included in the Contract Sum identified in Section 1.1 above.

4.5 The Contractor shall remain an independent agent for the duration of this Contract, shall not become an employee of the State of Maine, and shall assure that no State employee will be compensated by, or otherwise benefit from, this Contract.

4.6 The Contractor shall be responsible for any design cost, construction cost, or other cost incurred on the Project to the extent caused by the negligent acts, errors or omissions of the Contractor or their Subcontractors in the performance of Work under this Contract.

#### ARTICLE 5 OWNER'S RESPONSIBILITIES

5.1 The Owner shall provide full information about the objectives, schedule, constraints and existing conditions of the project. The Owner has established a budget with reasonable contingencies that meets the project requirements.

5.2 By signing this contract, the Owner attests that all State of Maine procurement requirements for this contract have been met, including the solicitation of competitive bids.

#### ARTICLE 6 INSTRUMENTS OF SERVICE

6.1 The Contractor's use of the drawings, specifications and other documents known as the Consultant's Instruments of Service is limited to the execution of the Contractor's scope of work of this project unless the Contractor receives the written consent of the Owner and Consultant for use elsewhere.

#### ARTICLE 7 MISCELLANEOUS PROVISIONS

7.1 This Contract shall be governed by the laws of the State of Maine.

7.2 The Owner and Contractor, respectively, bind themselves, their partners, successors, assigns and legal representatives to this Contract. Neither party to this Contract shall assign the Contract as a whole without written consent of the other party, which consent the Owner may withhold without cause.

7.3 Notwithstanding any other provision of this Agreement, if the Owner does not receive sufficient funds to fund this Agreement or funds are de-appropriated, or if the Owner does not receive legal authority from the Maine State Legislature or Maine Courts to expend funds intended for this Agreement, then the Owner is not obligated to make payment under this Agreement; provided, however, the Owner shall be obligated to pay for services satisfactorily performed prior to any such non-appropriation in accordance with the termination provisions of this agreement. The Owner shall timely notify the Consultant of any non-appropriation and the effective date of the non-appropriation.

#### ARTICLE 8 CONTRACT DOCUMENTS

8.1 The General Conditions of the contract, instructions to bidders, bid form, Special Provisions, the written specifications and the drawings, and any Addenda, together with this agreement, form the contract. Each element is as fully a part of the Contract as if hereto attached or herein repeated.

8.2 Specifications: **indicate date of issuance of project manual**

8.3 Drawings: **note each sheet number and title**

8.4 Addenda: **note each addenda number and date, or "none"**

BGS Project No.: \_\_\_\_\_

The Agreement is effective as of the date executed by the approval authority.

**OWNER****CONTRACTOR**

\_\_\_\_\_  
*(Signature) (Date)*  
*name and title*

*name of contracting entity*  
*address*

*telephone*  
*email address*

\_\_\_\_\_  
*(Signature) (Date)*  
*name and title*

*name of contractor company*  
*address*

*telephone*  
*email address*  
*Vendor Number*

*(Indicate names of the review and approval individuals appropriate to the approval authority.)*

***select proper approval authority***

**Reviewed by:**

**Approved by:**

\_\_\_\_\_  
*(Signature) (Date)*  
*insert name*

*Project Manager/ Contract Administrator*

\_\_\_\_\_  
*(Signature) (Date)*  
*Joseph H. Ostwald*

*Director, Planning, Design & Construction*

**00 71 00**  
**Definitions**

1. Definitions

- 1.1 *Addendum*: A document issued by the Consultant that amends the Bid Documents. Addenda shall not be issued less than seventy-two hours prior to the specified bid opening time.
- 1.2 *Allowance*: A specified dollar amount for a particular scope of work or service included in the Work that is identified in the Bid Documents and included in each Bidder's Bid. The Contractor shall document expenditures for an Allowance during the Project. Any unused balance shall be credited to the Owner. The Contractor is responsible for notifying the Owner of anticipated expenses greater than the specified amount and the Owner is responsible for those additional expenses.
- 1.3 *Alternate Bid*: The Contractor's written offer of a specified dollar amount, submitted on the Bid Form, for the performance of a particular scope of work described in the Bid Documents. The Owner determines the low bidder based on the sum of the base Bid and any combination of Alternate Bids that the Owner selects.
- 1.4 *Architect*: A Consultant acting as, or supporting, the Professional-of-Record who is responsible for the design of the Project. Equivalent to "Consultant" in State of Maine contract forms.
- 1.5 *Architectural Supplemental Instruction (ASI)*: A written instruction from the Architect for the purpose of clarification of the Contract Documents. An ASI does not alter the Contract Price or Contract Time. ASIs may be responses to RFIs and shall be issued by the Architect in a timely manner to avoid any negative impact on the Schedule of Work.
- 1.6 *Bid*: The Contractor's written offer of a specified dollar amount or amounts, submitted on a form included in the Bid Documents, for the performance of the Work. A Bid may include bonds or other requirements. A base Bid is separate and distinct from Alternate Bids, being the only cost component necessary for the award of the contract, and representing the minimum amount of Work that is essential for the functioning of the Project.
- 1.7 *Bid Bond*: The security designated in the Bid Documents, furnished by Bidders as a guaranty of good faith to enter into a contract with the Owner, should a contract be awarded to that Bidder.
- 1.8 *Bidder*: Any business entity, individual or corporation that submits a bid for the performance of the work described in the Bid Documents, acting directly or through a duly authorized representative. See also *Responsive and Responsible Bidder*.
- 1.9 *Bid Documents*: The drawings, procurement and contracting requirements, general requirements, and the written specifications -including all addenda, that a bidder is required to reference in the submission of a bid.
- 1.10 *Bureau*: The State of Maine Bureau of Real Estate Management (formerly known as Bureau of General Services, or BGS) in the Department of Administrative and Financial Services.
- 1.11 *Calendar days*: Consecutive days, as occurring on a calendar, taking into account each day of the week, month, year, and any religious, national or local holidays. Calendar days are used for changes in Contract Time.

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**Definitions**

- 1.12 *Certificate of Substantial Completion*: A document developed by the Consultant that describes the final status of the Work and establishes the date that the Owner may use the facility for its intended purpose. The Certificate of Substantial Completion may also include a provisional list of items - a "punch list" - remaining to be completed by the Contractor. The Certificate of Substantial Completion identifies the date from which the project warranty period commences.
- 1.13 *Certificate of Occupancy*: A document developed by a local jurisdiction such as the Code Enforcement Officer that grants permission to the Owner to occupy a building.
- 1.14 *Change Order (CO)*: A document that modifies the contract and establishes the basis of a specific adjustment to the Contract Price or the Contract Time, or both. Change Orders may address correction of omissions, errors, and document discrepancies, or additional requirements. Change Orders should include all labor, materials and incidentals required to complete the work described. A Change Order is not valid until signed by the Contractor, Owner and Consultant and approved by the Bureau.
- 1.15 *Change Order Proposal (COP) (see also Proposal)*: Contract change proposed by the Contractor regarding the contract amount, requirements, or time. The Contractor implements the work of a COP after it is accepted by all parties. Accepted COPs are incorporated into the contract by Change Order.
- 1.16 *Clerk of the Works*: The authorized representative of the Consultant on the job site. Clerk of the Works is sometimes called the Architect's representative.
- 1.17 *Construction Change Directive (CCD)*: A written order prepared by the Consultant and signed by the Owner and Consultant, directing a change in the Work prior to final agreement with the Contractor on adjustment, if any, in the Contract Price or Contract Time, or both.
- 1.18 *Contract*: A written agreement between the Owner and the successful bidder which obligates the Contractor to perform the work specified in the Contract Documents and obligates the Owner to compensate the Contractor at the mutually accepted sum, rates or prices.
- 1.19 *Contract Bonds (also known as Payment and Performance Bonds)*: The approved forms of security, furnished by the Contractor and their surety, which guarantee the faithful performance of all the terms of the contract and the payment of all bills for labor, materials and equipment by the Contractor.
- 1.20 *Contract Documents*: The drawings and written specifications (including all addenda), Standard General Conditions, and the contract (including all Change Orders subsequently incorporated in the documents).
- 1.21 *Contract Price*: The dollar amount of the construction contract, also called *Contract Sum*.
- 1.22 *Contract Time*: The designated duration of time to execute the Work of the contract, with a specific date for completion.
- 1.23 *Contractor*: Also called the "General Contractor" or "GC" the individual or entity undertaking the execution of the general contract work under the terms of the contract with the Owner, acting directly or through a duly authorized representative. The Contractor is responsible for the means, methods and materials utilized in the execution and completion of the Work.

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**Definitions**

- 1.24 *Consultant*: The Architect or Engineer acting as Professional-of-Record for the Project. The Consultant is responsible for the design of the Project.
- 1.25 *Drawings*: The graphic and pictorial portion of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.
- 1.26 *Engineer*: A Consultant acting as, or supporting, the Professional-of-Record who is responsible for the design of the Project. Equivalent to “Consultant” in State of Maine contract forms.
- 1.27 *Filed Sub-bid*: The designated major Subcontractor's (or, in some cases, Contractor's) written offer of a specified dollar amount or amounts, submitted on a form included in the Bid Documents, for the performance of a particular portion of the Work. A Filed Sub-bid may include bonds or other requirements.
- 1.28 *Final Completion*: Project status establishing the date when the Work is fully completed in compliance with the Contract Documents, as certified by the Consultant. Final payment to the Contractor is due upon Final Completion of the Project.
- 1.29 *General Requirements*: The on-site overhead expense items the Contractor provides for the Project, typically including, but not limited to, building permits, construction supervision, Contract Bonds, insurance, field office, temporary utilities, rubbish removal, and site fencing. Overhead expenses of the Contractor's general operation are not included. Sometimes referred to as the Contractor's General Conditions.
- 1.30 *Owner*: The State agency which is represented by duly authorized individuals. The Owner is responsible for defining the scope of the Project and compensation to the Consultant and Contractor.
- 1.31 *Owner's Representative*: The individual or entity contracted by the Owner to be an advisor and information conduit regarding the Project.
- 1.32 *Overhead*: General and administrative expenses of the Contractor's principal and branch offices, including payroll costs and other compensation of Contractor employees, deductibles paid on any insurance policy, charges against the Contractor for delinquent payments, and costs related to the correction of defective work, and the Contractor's capital expenses, including interest on capital used for the work.
- 1.33 *Performance and Payment Bonds (also known as Contract Bonds)*: The approved forms of security, furnished by the Contractor and their surety, which guarantee the faithful performance of all the terms of the contract and the payment of all bills for labor, materials and equipment by the Contractor.
- 1.34 *Post-Bid Addendum*: Document issued by the Consultant that defines a potential Change Order prior to signing of the construction contract. The Post-Bid Addendum allows the Owner to negotiate contract changes with the Bidder submitting the lowest valid bid, only if the negotiated changes to the Bid Documents result in no change or no increase in the bid price.

A Post-Bid Addendum may also be issued after a competitive construction Bid opening to those Bidders who submitted a Bid initially, for the purpose of rebidding the Project work without re-advertising.

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- 1.35 *Project*: The construction project proposed by the Owner to be constructed according to the Contract Documents. The Project, a public improvement, may be tied logistically to other public improvements and other activities conducted by the Owner or other contractors.
- 1.36 *Proposal (see also Change Order Proposal)*: The Contractor's written offer submitted to the Owner for consideration containing a specified dollar amount or rate, for a specific scope of work, and including a schedule impact, if any. A proposal shall include all costs for overhead and profit. The Contractor implements the work of a Proposal after it is accepted by all parties. Accepted Proposals are incorporated into the contract by Change Order.
- 1.37 *Proposal Request (PR)*: An Owner's written request to the Contractor for a Change Order Proposal.
- 1.38 *Punch List*: A document that identifies the items of work remaining to be done by the Contractor at the Close Out of a Project. The Punch List is created as a result of a final inspection of the work only after the Contractor attests that all of the Work is in its complete and permanent status.
- 1.39 *Request For Information (RFI)*: A Contractor's written request to the Consultant for clarification, definition or description of the Work. RFIs shall be presented by the Contractor in a timely manner to avoid any negative impact on the Schedule of Work.
- 1.40 *Request For Proposal (RFP)*: An Owner's written request to the Contractor for a Change Order Proposal.
- 1.41 *Requisition for Payment*: The document in which the Contractor certifies that the Work described is, to the best of the Contractor's knowledge, information and belief, complete and that all previous payments have been paid by the Contractor to Subcontractors and suppliers, and that the current requested payment is now due. See *Schedule of Values*.
- 1.42 *Responsive and Responsible Bidder*: A bidder who complies, on a given project, with the following *responsive* standards, as required by the bid documents:
- provided specific qualifications to bid the project, if required;
  - attended mandatory pre-bid conferences, if required;
  - provided a bid prior to the close of the bid period;
  - submitted a complete bid form;
  - submitted other materials and information, such as bid security, as required;
- and, meets the following minimums regarding these *responsible* standards:
- sustains a satisfactory record of project performance;
  - maintains a permanent place of business in a known physical location;
  - possesses the financial means for short- and long-term operations;
  - possesses the appropriate technical experience;
  - employs adequate personnel and subcontractor resources;
  - maintains the equipment needed to perform the work;
  - complies with the proposed implementation schedule;
  - complies with the insurance and bonding requirements;
  - can provide post-construction warranty coverage;
  - and other criteria which can be considered relevant to the contract.

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**Definitions**

- 1.43 *Retainage*: The amount, calculated at five percent (5%) of the contract value or a scheduled value, that the Owner shall withhold from the Contractor until the work or portion of work is declared substantially complete or otherwise accepted by the Owner. The Owner may, if requested, reduce the amount withheld if the Owner deems it desirable and prudent to do so. (See Title 5 M.R.S.A., Section 1746.)
- 1.44 *Sample*: A physical example provided by the Contractor which illustrates materials, equipment or workmanship and establishes standards by which the Work will be judged.
- 1.45 *Schedule of the Work*: The document prepared by the Contractor and approved by the Owner that specifies the dates on which the Contractor plans to begin and complete various parts of the Work, including dates on which information and approvals are required from the Owner.
- 1.46 *Schedule of Values*: The document prepared by the Contractor and approved by the Owner before the commencement of the Work that specifies the dollar values of discrete portions of the Work equal in sum to the contract amount. The Schedule of Values is used to document progress payments of the Work in regular (usually monthly) requisitions for payment. See *Requisition for Payment*.
- 1.47 *Shop Drawings*: The drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.
- 1.48 *Specifications*: The portion of the Contract Documents consisting of the written requirements of the Work for materials, equipment, systems, standards, workmanship, and performance of related services.
- 1.49 *Subcontractor*: An individual or entity undertaking the execution of any part of the Work by virtue of a written agreement with the Contractor or any other Subcontractor. Also, an individual or entity retained by the Contractor or any other Subcontractor as an independent contractor to provide the labor, materials, equipment or services necessary to complete a specific portion of the Work.
- 1.50 *Substantial Completion*: Project status indicating when the Work or a designated portion of the Work is sufficiently complete in compliance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended purpose without unscheduled disruption. Substantial Completion is documented by the date of the Certificate of Substantial Completion signed by the Owner and the Contractor.
- 1.51 *Superintendent*: The representative of the Contractor on the job site, authorized by the Contractor to receive and fulfill instructions from the Consultant.
- 1.52 *Surety*: The individual or entity that is legally bound with the Contractor and Subcontractor to insure the faithful performance of the contract and for the payment of the bills for labor, materials and equipment by the Contractor and Subcontractors.
- 1.53 *Work*: The construction and services, whether completed or partially completed, including all labor, materials, equipment and services provided or to be provided by the Contractor and Subcontractors to fulfill the requirements of the Project as described in the Contract Documents.

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**1. Preconstruction Conference**

- 1.1 The Contractor shall, upon acceptance of a contract and prior to commencing work, schedule a preconstruction conference with the Owner and Consultant. The purpose of this conference is as follows.
  - 1.1.1 Introduce all parties who have a significant role in the Project, including:
    - Owner (State agency or other contracting entity)
      - Owner's Representative
    - Consultant (Architect or Engineer)
      - Subconsultants
      - Clerk-of-the-works
    - Contractor (GC)
      - Superintendent
      - Subcontractors
    - Other State agencies
    - Construction testing company
    - Commissioning agent
    - Special Inspections agent
    - Bureau of General Services (BGS);
  - 1.1.2 Review the responsibilities of each party;
  - 1.1.3 Review any previously-identified special provisions of the Project;
  - 1.1.4 Review the Schedule of the Work calendar submitted by the Contractor to be approved by the Owner and Consultant;
  - 1.1.5 Review the Schedule of Values form submitted by the Contractor to be approved by the Owner and Consultant;
  - 1.1.6 Establish routines for Shop Drawing approval, contract changes, requisitions, et cetera;
  - 1.1.7 discuss jobsite issues;
  - 1.1.8 Discuss Project close-out procedures;
  - 1.1.9 Provide an opportunity for clarification of Contract Documents before work begins; and
  - 1.1.10 Schedule regular meetings at appropriate intervals for the review of the progress of the Work.

**2. Intent and Correlation of Contract Documents**

- 2.1 The intent of the Contract Documents is to describe the complete Project. The Contract Documents consist of various components; each component complements the others. What is shown as a requirement by any one component shall be inferred as a requirement on all corresponding components.
- 2.2 The Contractor shall furnish all labor, equipment and materials, tools, transportation, insurance, services, supplies, operations and methods necessary for, and reasonably incidental to, the construction and completion of the Project. Any work that deviates from the Contract Documents which appears to be required by the exigencies of construction or by inconsistencies in the Contract Documents, will be determined by the Consultant and authorized in writing by the Consultant, Owner and the Bureau prior to execution. The Contractor shall be responsible for requesting clarifying information where the intent of the Contract Documents is uncertain.
- 2.3 The Contractor shall not utilize any apparent error or omission in the Contract Documents to the disadvantage of the Owner. The Contractor shall promptly notify the Consultant in writing of such errors or omissions. The Consultant shall make any corrections or clarifications necessary in such a situation to document the true intent of the Contract Documents.

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**General Conditions**

**3. Additional Drawings and Specifications**

- 3.1 Upon the written request of the Contractor, the Owner shall provide, at no expense to the Contractor, up to five sets of printed Drawings and Specifications for the execution of the Work.
- 3.2 The Consultant shall promptly furnish to the Contractor revised Drawings and Specifications, for the area of the documents where those revisions apply, when corrections or clarifications are made by the Consultant. All such information shall be consistent with, and reasonably inferred from, the Contract Documents. The Contractor shall do no work without the proper Drawings and Specifications.

**4. Ownership of Contract Documents**

- 4.1 The designs represented on the Contract Documents are the property of the Consultant. The Drawings and Specifications shall not be used on other work without consent of the Consultant.

**5. Permits, Laws, and Regulations**

- 5.1 The Owner is responsible for obtaining any zoning approvals or other similar local project approvals necessary to complete the Work, unless otherwise specified in the Contract Documents.
- 5.2 The Owner is responsible for obtaining Maine Department of Environmental Protection, Maine Department of Transportation, or other similar state government project approvals necessary to complete the Work, unless otherwise indicated in the Contract Documents.
- 5.3 The Owner is responsible for obtaining any federal agency project approvals necessary to complete the Work, unless otherwise indicated in the Contract Documents.
- 5.4 The Owner is responsible for obtaining all easements for permanent structures or permanent changes in existing facilities.
- 5.5 The Contractor is responsible for obtaining and paying for all permits and licenses necessary for the implementation of the Work. The Contractor shall notify the Owner of any delays, variance or restrictions that may result from the issuing of permits and licenses.
- 5.6 The Contractor shall comply with all ordinances, laws, rules and regulations and make all required notices bearing on the implementation of the Work. In the event the Contractor observes disagreement between the Drawings and Specifications and any ordinances, laws, rules and regulations, the Contractor shall promptly notify the Consultant in writing. Any necessary changes shall be made as provided in the contract for changes in the work. The Contractor shall not perform any work knowing it to be contrary to such ordinances, laws, rules and regulations.
- 5.7 The Contractor shall comply with local, state and federal regulations regarding construction safety and all other aspects of the Work.
- 5.8 The Contractor shall comply with the Maine Code of Fair Practices and Affirmative Action, 5 M.R.S. §784 (2).

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**6. Taxes**

- 6.1 The Owner is exempt from the payment of Maine State sales and use taxes as provided in 36 M.R.S. §1760 (1). The Contractor and Subcontractors shall not include taxes on exempt items in the construction contract.
- 6.2 Section 1760 further provides in subsection 61 that sales to a construction contractor or its subcontractor of tangible personal property that is to be physically incorporated in, and become a permanent part of, real property for sale to or owned by the Owner, are exempt from Maine State sales and use taxes. Tangible personal property is defined in 36 M.R.S. §1752 (17).
- 6.3 The Contractor may contact Maine Revenue Services, 24 State House Station, Augusta, Maine 04333 for guidance on tax exempt regulations authorized by 36 M.R.S. §1760 and detailed in Rule 302 (18-125 CMR 302).

**7. Labor and Wages**

- 7.1 The Contractor shall conform to the labor laws of the State of Maine, and all other laws, ordinances, and legal requirements affecting the work in Maine.
- 7.2 The Consultant shall include a wage determination document prepared by the Maine Department of Labor in the Contract Documents for state-funded contracts in excess of \$50,000. The document shows the minimum wages required to be paid to each category of labor employed on the project.
- 7.3 On projects requiring a Maine wage determination, the Contractor shall submit monthly payroll records to the Owner ("the contracting agency") showing the name and occupation of all workers and all independent contractors employed on the project. The monthly submission must also include the Contractor's company name, the title of the project, hours worked, hourly rate or other method of remuneration, and the actual wages or other compensation paid to each person.
- 7.4 The Contractor shall not reveal, in the payroll records submitted to the Owner, personal information regarding workers and independent contractors, other than the information described above. Such information shall not include Social Security number, employee identification number, or employee address or phone number, for example.
- 7.5 The Contractor shall conform to Maine statute (39-A M.R.S. §105-A (6)) by providing to the Workers' Compensation Board a list of all subcontractors and independent contractors on the job site and a record of the entity to whom that subcontractor or independent contractor is directly contracted and by whom that subcontractor or independent contractor is insured for workers' compensation purposes.
- 7.6 The Contractor shall enforce strict discipline and good order among their employees at all times, and shall not employ any person unfit or unskilled to do the work assigned to them.
- 7.7 The Contractor shall promptly pay all employees when their compensation is due, shall promptly pay all others who have billed and are due for materials, supplies and services used in the Work, and shall promptly pay all others who have billed and are due for insurance, workers compensation coverage, federal and state unemployment compensation, and Social Security

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charges pertaining to this Project. Before final payments are made, the Contractor shall furnish to the Owner affidavits that all such payments described above have been made.

7.8 The Contractor may contact the Maine Department of Labor, 54 State House Station, Augusta, Maine 04333 for guidance on labor issues.

7.9 The Contractor may contact the Maine Workers' Compensation Board, 27 State House Station, Augusta, Maine 04333 for guidance on workers' compensation issues.

**8. Indemnification**

8.1 The Contractor shall indemnify and hold harmless the Owner and its officers and employees from and against any and all damages, liabilities, and costs, including reasonable attorney's fees, and defense costs, for any and all injuries to persons or property, including claims for violation of intellectual property rights, to the extent caused by the negligent acts or omissions of the Contractor, its employees, agents, officers or subcontractors in the performance of work under this Agreement. The Contractor shall not be liable for claims to the extent caused by the negligent acts or omissions of the Owner or for actions taken in reasonable reliance on written instructions of the Owner.

8.2 The Contractor shall notify the Owner promptly of all claims arising out of the performance of work under this Agreement by the Contractor, its employees or agents, officers or subcontractors.

8.3 This indemnity provision shall survive the termination of the Agreement, completion of the project or the expiration of the term of the Agreement.

**9. Insurance Requirements**

9.1 The Contractor shall provide, with each original of the signed Contract, an insurance certificate or certificates acceptable to the Owner and BGS. The Contractor shall submit insurance certificates to the Owner and BGS at the commencement of this Contract and at policy renewal or revision dates. The certificates shall identify the project name and BGS project number, and shall name the Owner as certificate holder and as additional insured for general liability and automobile liability coverages. The submitted forms shall contain a provision that coverage afforded under the insurance policies will not be canceled or materially changed unless at least ten days prior written notice by registered letter has been given to the Owner and BGS.

9.2 The Owner does not warrant or represent that the insurance required herein constitutes an insurance portfolio which adequately addresses all risks faced by the Contractor or its Subcontractors. The Contractor is responsible for the existence, extent and adequacy of insurance prior to commencement of work. The Contractor shall not allow any Subcontractor to commence work until all similar insurance required of the Subcontractor has been confirmed by the Contractor.

9.3 The Contractor shall procure and maintain primary insurance for the duration of the Project and, if written on a Claims-Made basis, shall also procure and maintain Extended Reporting Period (ERP) insurance for the period of time that any claims could be brought. The Contractor shall ensure that all Subcontractors they engage or employ will procure and maintain similar insurance

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in form and amount acceptable to the Owner and BGS. At a minimum, the insurance shall be of the types and limits set forth herein protecting the Contractor from claims which may result from the Contractor's execution of the Work, whether such execution be by the Contractor or by those employed by the Contractor or by those for whose acts they may be liable. All required insurance coverages shall be placed with carriers authorized to conduct business in the State of Maine by the Maine Bureau of Insurance.

- 9.3.1 The Contractor shall have Workers' Compensation insurance for all employees on the Project site in accordance with the requirements of the Workers' Compensation law of the State of Maine. Minimum acceptable limits for Employer's Liability are:

Bodily Injury by Accident.....	\$500,000
Bodily Injury by Disease.....	\$500,000 Each Employee
Bodily Injury by Disease.....	\$500,000 Policy Limit

- 9.3.2 The Contractor shall have Commercial General Liability insurance providing coverage for bodily injury and property damage liability for all hazards of the Project including premise and operations, products and completed operations, contractual, and personal injury liabilities. The policy shall include collapse and underground coverage as well as explosion coverage if explosion hazards exist. Aggregate limits shall apply on a location or project basis. Minimum acceptable limits are:

General aggregate limit.....	\$2,000,000
Products and completed operations aggregate .....	\$1,000,000
Each occurrence limit.....	\$1,000,000
Personal injury aggregate .....	\$1,000,000

- 9.3.3 The Contractor shall have Automobile Liability insurance against claims for bodily injury, death or property damage resulting from the maintenance, ownership or use of all owned, non-owned and hired automobiles, trucks and trailers. Minimum acceptable limit is:

Any one accident or loss .....	\$500,000
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- 9.3.4 The Contractor shall have Owner's Protective Liability insurance for contract values \$50,000 and above, naming the Owner as the Named Insured. Minimum acceptable limits are:

General aggregate limit.....	\$2,000,000
Each occurrence limit.....	\$1,000,000

- 9.4 The Owner has determined the appropriate coverage for this particular project, verified the coverage with the State of Maine Division of Risk Management, and selected the proper option on the contract form. Property Insurance for this construction contract shall be one of the options described below.

- 9.4.1 Non-standard project insured by the Contractor –  
 Projects of this type include, but are not limited to, site improvements such as parking lots, boat launches, utility runs, and free-standing mechanical or electrical equipment, and do not necessarily include buildings. The Contractor shall procure and maintain an appropriate level of property insurance naming the Owner, Contractor and any Subcontractors as insureds as their interest may appear. Covered cause of loss form shall be all Risks of Direct Physical Loss, endorsed to include flood, earthquake, transit and sprinkler leakage where sprinkler coverage is applicable. Unless specifically authorized in writing by the Owner, the limit of insurance shall not be less than the initial contract amount and coverage shall apply during the entire contract period until the Certificate of Substantial Completion is accepted by the Owner.

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- 9.4.2 New construction insured by the Contractor –  
The Contractor shall procure and maintain Builder's Risk insurance naming the Owner, Contractor and any Subcontractors as insureds as their interest may appear. Covered cause of loss form shall be all Risks of Direct Physical Loss, endorsed to include flood, earthquake, transit and sprinkler leakage where sprinkler coverage is applicable. Unless specifically authorized in writing by the Owner, the limit of insurance shall not be less than the initial contract amount and coverage shall apply during the entire contract period until the Certificate of Substantial Completion is accepted by the Owner.
- 9.4.3 Renovations and additions to existing State-owned buildings insured by the Owner (State of Maine Division of Risk Management) –  
Builder's Risk insurance will be provided by the State of Maine in accordance with the terms and conditions of the State's property policy. The Owner shall notify Maine Division of Risk Management concerning the project, including the nature and value of the work, planned start and completion date, and the name of the General Contractor. Said insurance coverage shall cover the interests of the Contractor and Subcontractor, as their interests may appear. Exclusions common to commercial property policies may be applicable. A Builder's Risk certificate of insurance will be furnished to the Contractor upon request.
- The \$500 per occurrence deductible is the responsibility of the Contractor. Should the Contractor or Subcontractor desire coverage in excess of that maintained by the State, it must be acquired by the Contractor and at Contractor expense.
- 9.4.4 Renovations and additions to existing buildings not insured by the Owner (State of Maine Division of Risk Management) –  
The Contractor shall procure and maintain Builder's Risk insurance naming the Owner, Contractor and all Subcontractors as insureds as their interests may appear. The covered cause of loss form shall be Risks of Direct Physical Loss, endorsed to include flood, earthquake, testing and ensuing loss and shall include coverage for materials in transit and materials stored off site. Coverage shall be on a replacement cost and a completed value basis. Unless specifically authorized by the Owner, the limit of insurance shall not be less than the contract amount and coverage shall apply during the entire contract period until the Certificate of Substantial Completion is accepted by the Owner.

**10. Contract Bonds**

- 10.1 When noted as required in the Bid Documents, the Contractor shall provide to the Owner a Performance Bond and a Payment Bond, or "contract bonds", upon execution of the contract. Each bond value shall be for the full amount of the contract and issued by a surety company authorized to do business in the State of Maine as approved by the Owner. The bonds shall be executed on the forms furnished in the Bid Documents. The bonds shall allow for any subsequent additions or deductions of the contract.
- 10.2 The contract bonds shall continue in effect for one year after final acceptance of the contract to protect the Owner's interest in connection with the one year guarantee of workmanship and materials and to assure settlement of claims for the payment of all bills for labor, materials and equipment by the Contractor.

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**11. Patents and Royalties**

- 11.1 The Contractor shall, for all time, secure for the Owner the free and undisputed right to the use of any patented articles or methods used in the Work. The expense of defending any suits for infringement or alleged infringement of such patents shall be borne by the Contractor. Awards made regarding patent suits shall be paid by the Contractor. The Contractor shall hold the Owner harmless regarding patent suits that may arise due to installations made by the Contractor, and to any awards made as a result of such suits.
- 11.2 Any royalty payments related to the work done by the Contractor for the Project shall be borne by the Contractor. The Contractor shall hold the Owner harmless regarding any royalty payments that may arise due to installations made by the Contractor.

**12. Surveys, Layout of Work**

- 12.1 The Owner shall furnish all property surveys unless otherwise specified.
- 12.2 The Contractor is responsible for correctly staking out the Work on the site. The Contractor shall employ a competent surveyor to position all construction on the site. The surveyor shall run the axis lines, establish correct datum points and check each line and point on the site to insure their accuracy. All such lines and points shall be carefully preserved throughout the construction.
- 12.3 The Contractor shall lay out all work from dimensions given on the Drawings. The Contractor shall take measurements and verify dimensions of any existing work that affects the Work or to which the Work is to be fitted. The Contractor is solely responsible for the accuracy of all measurements. The Contractor shall verify all grades, lines, levels, elevations and dimensions shown on the Drawings and report any errors or inconsistencies to the Consultant prior to commencing work.

**13. Record of Documents**

- 13.1 The Contractor shall maintain one complete set of Contract Documents on the jobsite, in good order and current status, for access by the Owner and Consultant.
- 13.2 The Contractor shall maintain, continuously updated, complete records of Requests for Information, Architectural Supplemental Instructions (or equivalent), Information Bulletins, supplemental sketches, Change Order Proposals, Change Orders, Shop Drawings, testing reports, et cetera, for access by the Owner and Consultant.

**14. Allowances**

- 14.1 The Contract Price shall include all allowances described in the Contract Documents. The Contractor shall include all overhead and profit necessary to implement each allowance in their Contract Price.
- 14.2 The Contractor shall not be required to employ parties for allowance work against whom the Contractor has a reasonable objection. In such a case, the Contractor shall notify the Owner in writing of their position and shall propose an alternative party to complete the work of the allowance.

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**15. Shop Drawings**

- 15.1 The Contractor shall administer Shop Drawings prepared by the Contractor, Subcontractors, suppliers or others to conform to the approved Schedule of the Work. The Contractor shall verify all field measurements, check and authorize all Shop Drawings and schedules required by the Work. The Contractor is the responsible party and contact for the Contractor's work as well as that of Subcontractors, suppliers or others who provide Shop Drawings.
- 15.2 The Consultant shall review and acknowledge Shop Drawings, with reasonable promptness, for general conformity with the design concept of the project and compliance with the information provided in the Contract Documents.
- 15.3 The Contractor shall provide monthly updated logs containing: requests for information, information bulletins, supplemental instructions, supplemental sketches, change order proposals, change orders, submittals, testing and deficiencies.
- 15.4 The Contractor shall make any corrections required by the Consultant, and shall submit a quantity of corrected copies as may be needed. The acceptance of Shop Drawings or schedules by the Consultant shall not relieve the Contractor from responsibility for deviations from Drawings and Specifications, unless the Contractor has called such deviations to the attention of the Consultant at the time of submission and secured the Consultant's written approval. The acceptance of Shop Drawings or schedules by the Consultant does not relieve the Contractor from responsibility for errors in Shop Drawings or schedules.

**16. Samples**

- 16.1 The Contractor shall furnish for approval, with reasonable promptness, all samples as directed by the Consultant. The Consultant shall review and approve such samples, with reasonable promptness, for general conformity with the design concept of the project and compliance with the information provided in the Contract Documents. The subsequent work shall be in accord with the approved samples.

**17. Substitutions**

- 17.1 The Contractor shall furnish items and materials described in the Contract Documents. If the item or material specified describes a proprietary product, or uses the name of a manufacturer, the term "or approved equal" shall be implied, if it is not included in the text. The specific item or material specified establishes a minimum standard for the general design, level of quality, type, function, durability, efficiency, reliability, compatibility, warranty coverage, installation factors and required maintenance. The Drawing or written Specification shall not be construed to exclude other manufacturers products of comparable design, quality, and efficiency.
- 17.2 The Contractor may submit detailed information about a proposed substitution to the Consultant for consideration. Particular models of items and particular materials which the Contractor asserts to be equal to the items and materials identified in the Contract Documents shall be allowed only with written approval by the Consultant. The request for substitution shall include a cost comparison and a reason or reasons for the substitution.
- 17.3 The Consultant may request additional information about the proposed substitution. The approval or rejection of a proposed substitution may be based on timeliness of the request, source

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of the information, the considerations of minimum standards described above, or other considerations. The Consultant should briefly state the rationale for the decision. The decision shall be considered final.

- 17.4 The duration of a substitution review process can not be the basis for a claim for delay in the Schedule of the Work.

**18. Assignment of Contract**

- 18.1 The Contractor shall not assign or sublet the contract as a whole without the written consent of the Owner. The Contractor shall not assign any money due to the Contractor without the written consent of the Owner.

**19. Separate Contracts**

- 19.1 The Owner reserves the right to create other contracts in connection with this Project using similar General Conditions. The Contractor shall allow the Owner's other contractors reasonable opportunity for the delivery and storage of materials and the execution of their work. The Contractor shall coordinate and properly connect the Work of all contractors.
- 19.2 The Contractor shall promptly report to the Consultant and Owner any apparent deficiencies in work of the Owner's other contractors that impacts the proper execution or results of the Contractor. The Contractor's failure to observe or report any deficiencies constitutes an acceptance of the Owner's other contractors work as suitable for the interface of the Contractor's work, except for latent deficiencies in the Owner's other contractors work.
- 19.3 Similarly, the Contractor shall promptly report to the Consultant and Owner any apparent deficiencies in their own work that would impact the proper execution or results of the Owner's other contractors.
- 19.4 The Contractor shall report to the Consultant and Owner any conflicts or claims for damages with the Owner's other contractors and settle such conflicts or claims for damages by mutual agreement or arbitration, if necessary, at no expense to the Owner.
- 19.5 In the event the Owner's other contractors sue the Owner regarding any damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor, who shall defend such proceedings at the Contractor's expense. The Contractor shall pay or satisfy any judgment that may arise against the Owner, and pay all other costs incurred.

**20. Subcontracts**

- 20.1 The Contractor shall not subcontract any part of this contract without the written permission of the Owner.
- 20.2 The Contractor shall submit a complete list of named Subcontractors and material suppliers to the Consultant and Owner for approval by the Owner prior to commencing work. The Subcontractors named shall be reputable companies of recognized standing with a record of satisfactory work.

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- 20.3 The Contractor shall not employ any Subcontractor or use any material until they have been approved, or where there is reason to believe the resulting work will not comply with the Contract Documents.
- 20.4 The Contractor, not the Owner, is as fully responsible for the acts and omissions of Subcontractors and of persons employed by them, as the Contractor is for the acts and omissions of persons directly or indirectly employed by the Contractor.
- 20.5 Neither the Contract Documents nor any Contractor-Subcontractor contract shall indicate, infer or create any direct contractual relationship between any Subcontractor and the Owner.

**21. Contractor-Subcontractor Relationship**

- 21.1 The Contractor shall be bound to the Subcontractor by all the obligations in the Contract Documents that bind the Contractor to the Owner.
- 21.2 The Contractor shall pay the Subcontractor, in proportion to the dollar value of the work completed and requisitioned by the Subcontractor, the approved dollar amount allowed to the Contractor no more than seven days after receipt of payment from the Owner.
- 21.3 The Contractor shall pay the Subcontractor accordingly if the Contract Documents or the subcontract provide for earlier or larger payments than described in the provision above.
- 21.4 The Contractor shall pay the Subcontractor for completed and requisitioned subcontract work, less retainage, no more than seven days after receipt of payment from the Owner for the Contractor's approved Requisition for Payment, even if the Consultant fails to certify a portion of the Requisition for Payment for a cause not the fault of the Subcontractor.
- 21.5 The Contractor shall not make a claim for liquidated damages or penalty for delay in any amount in excess of amounts that are specified by the subcontract.
- 21.6 The Contractor shall not make a claim for services rendered or materials furnished by the Subcontractor unless written notice is given by the Contractor to the Subcontractor within ten calendar days of the day in which the claim originated.
- 21.7 The Contractor shall give the Subcontractor an opportunity to present and to submit evidence in any progress conference or disputes involving subcontract work.
- 21.8 The Contractor shall pay the Subcontractor a just share of any fire insurance payment received by the Contractor.
- 21.9 The Subcontractor shall be bound to the Contractor by the terms of the Contract Documents and assumes toward the Contractor all the obligations and responsibilities that the Contractor, by those documents, assumes toward the Owner.
- 21.10 The Subcontractor shall submit applications for payment to the Contractor in such reasonable time as to enable the Contractor to apply for payment as specified.

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- 21.11 The Subcontractor shall make any claims for extra cost, extensions of time or damages, to the Contractor in the manner provided in these General Conditions for like claims by the Contractor to the Owner, except that the time for the Subcontractor to make claims for extra cost is seven calendar days after the receipt of Consultant's instructions.

**22. Supervision of the Work**

- 22.1 During all stages of the Work the Contractor shall have a competent superintendent, with any necessary assistant superintendents, overseeing the project. The superintendent shall not be reassigned without the consent of the Owner unless a superintendent ceases to be employed by the Contractor due to unsatisfactory performance.
- 22.2 The superintendent represents the Contractor on the jobsite. Directives given by the Consultant or Owner to the superintendent shall be as binding as if given directly to the Contractor's main office. All important directives shall be confirmed in writing to the Contractor. The Consultant and Owner are not responsible for the acts or omissions of the superintendent or assistant superintendents.
- 22.3 The Contractor shall provide supervision of the Work equal to the industry's highest standard of care. The superintendent shall carefully study and compare all Contract Documents and promptly report any error, inconsistency or omission discovered to the Consultant. The Contractor may not necessarily be held liable for damages resulting directly from any error, inconsistency or omission in the Contract Documents or other instructions by the Consultant that was not revealed by the superintendent in a timely way.

**23. Observation of the Work**

- 23.1 The Contractor shall allow the Owner, the Consultant and the Bureau continuous access to the site for the purpose of observation of the progress of the work. All necessary safeguards and accommodations for such observations shall be provided by the Contractor.
- 23.2 The Contractor shall coordinate all required testing, approval or demonstration of the Work. The Contractor shall give sufficient notice to the appropriate parties of readiness for testing, inspection or examination.
- 23.3 The Contractor shall schedule inspections and obtain all required certificates of inspection for inspections by a party other than the Consultant.
- 23.4 The Consultant shall make all scheduled observations promptly, prior to the work being concealed or buried by the Contractor. If approval of the Work is required of the Consultant, the Contractor shall notify the Consultant of the construction schedule in this regard. Work concealed or buried prior to the Consultant's approval may need to be uncovered at the Contractor's expense.
- 23.5 The Consultant may order reexamination of questioned work, and, if so ordered, the work must be uncovered by the Contractor. If the work is found to conform to the Contract Documents, the Owner shall pay the expense of the reexamination and remedial work. If the work is found to not conform to the Contract Documents, the Contractor shall pay the expense, unless the defect in the

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work was caused by the Owner's Contractor, whose responsibility the reexamination expense becomes.

- 23.6 The Bureau shall periodically observe the Work during the course of construction and make recommendations to the Contractor or Consultant as necessary. Such recommendations shall be considered and implemented through the usual means for changes to the Work.

**24. Consultant's Status**

- 24.1 The Consultant represents the Owner during the construction period, and observes the work in progress on behalf of the Owner. The Consultant has authority to act on behalf of the Owner only to the extent expressly provided by the Contract Documents or otherwise demonstrated to the Contractor. The Consultant has authority to stop the work whenever such an action is necessary, in the Consultant's reasonable opinion, to ensure the proper execution of the contract.
- 24.2 The Consultant is the interpreter of the conditions of the contract and the judge of its performance. The Consultant shall favor neither the Owner nor the Contractor, but shall use the Consultant's powers under the contract to enforce faithful performance by both parties.
- 24.3 In the event of the termination of the Consultant's employment on the project prior to completion of the work, the Owner shall appoint a capable and reputable replacement. The status of the new Consultant relative to this contract shall be that of the former Consultant.

**25. Management of the Premises**

- 25.1 The Contractor shall place equipment and materials, and conduct activities on the premises in a manner that does not unreasonably hinder site circulation, environmental stability, or any long term effect. Likewise, the Consultant's directions shall not cause the use of premises to be impeded for the Contractor or Owner.
- 25.2 The Contractor shall not use the premises for any purpose other than that which is directly related to the scope of work. The Owner shall not use the premises for any purpose incompatible with the proposed work simultaneous to the work of the Contractor.
- 25.3 The Contractor shall enforce the Consultant's instructions regarding information posted on the premises such as signage and advertisements, as well as activities conducted on the premises such as fires, and smoking.
- 25.4 The Owner may occupy any part of the Project that is completed with the written consent of the Contractor, and without prejudice to any of the rights of the Owner or Contractor. Such use or occupancy shall not, in and of itself, be construed as a final acceptance of any work or materials.

**26. Safety and Security of the Premises**

- 26.1 The Contractor shall designate, and make known to the Consultant and the Owner, a safety officer whose duty is the prevention of accidents on the site.

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- 26.2 The Contractor shall continuously maintain security on the premises and protect from unreasonable occasion of injury all people authorized to be on the job site. The Contractor shall also effectively protect the property and adjacent properties from damage or loss.
- 26.3 The Contractor shall take all necessary precautions to ensure the safety of workers and others on and adjacent to the site, abiding by applicable local, state and federal safety regulations. The Contractor shall erect and continuously maintain safeguards for the protection of workers and others, and shall post signs and other warnings regarding hazards associated with the construction process, such as protruding fasteners, moving equipment, trenches and holes, scaffolding, window, door or stair openings, and falling materials.
- 26.4 The Contractor shall restore the premises to conditions that existed prior to the start of the project at areas not intended to be altered according to the Contract Documents.
- 26.5 The Contractor shall protect existing utilities and exercise care working in the vicinity of utilities shown in the Drawings and Specifications or otherwise located by the Contractor.
- 26.6 The Contractor shall protect from damage existing trees and other significant plantings and landscape features of the site which will remain a permanent part of the site. If necessary or indicated in the Contract Documents, tree trunks shall be boxed and barriers erected to prevent damage to tree branches or roots.
- 26.7 The Contractor shall repair or replace damage to the Work caused by the Contractor's or Subcontractor's forces, including that which is reasonably protected, at the expense of the responsible party.
- 26.8 The Contractor shall not load, or allow to be loaded, any part of the Project with a force which imperils personal or structural safety. The Consultant may consult with the Contractor on such means and methods of construction, however, the ultimate responsibility lies with the Contractor.
- 26.9 The Contractor shall not jeopardize any work in place with subsequent construction activities such as blasting, drilling, excavating, cutting, patching or altering work. The Consultant must approve altering any structural components of the project. The Contractor shall supervise all construction activities carried out by others on site to ensure that the work is neatly done and in a manner that will not endanger the structure or the component parts.
- 26.10 The Contractor may act with their sole discretion in emergency situations that potentially effect health, life or serious damage to the premises or adjacent properties, to prevent such potential loss or injury. The Contractor may negotiate with the Owner for compensation for expenses due to such emergency work.
- 26.11 The Contractor and Subcontractors shall have no responsibility for the identification, discovery, presence, handling, removal or disposal of, or exposure of persons to, hazardous materials in any form at the project site. The Contractor shall avoid disruption of any hazardous materials or toxic substances at the project site and promptly notify the Owner in writing on the occasion of such a discovery.

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26.12 The Contractor shall keep the premises free of any unsafe accumulation of waste materials caused by the work. The Contractor shall regularly keep the spaces “broom clean”. See the Close-out of the Work provisions of this section regarding cleaning at the completion of the project.

**27. Changes in the Work**

27.1 The Contractor shall not proceed with extra work without an approved Change Order or Construction Change Directive. A Change Order which has been properly signed by all parties shall become a part of the contract.

27.2 A Change Order is the usual document for directing changes in the Work. In certain circumstances, however, the Owner may utilize a Construction Change Directive to direct the Contractor to perform changes in the Work that are generally consistent with the scope of the project. The Owner shall use a Construction Change Directive only when the normal process for approving changes to the Work has failed to the detriment of the Project, or when agreement on the terms of a Change Order cannot be met, or when an urgent situation requires, in the Owner's judgment, prompt action by the Contractor.

27.3 The Consultant shall prepare the Construction Change Directive representing a complete scope of work, with proposed Contract Price and Contract Time revisions, if any, clearly stated.

27.4 The Contractor shall promptly carry out a Construction Change Directive which has been signed by the Owner and the Consultant. Work thus completed by the Contractor constitutes the basis for a Change Order. Changes in the Contract Price and Contract Time shall be as defined in the Construction Change Directive unless subsequently negotiated with some other terms.

27.5 The method of determining the dollar value of extra work shall be by:

- .1 an estimate of the Contractor accepted by Owner as a lump sum, or
- .2 unit prices named in the contract or subsequently agreed upon, or
- .3 cost plus a designated percentage, or
- .4 cost plus a fixed fee.

27.6 The Contractor shall determine the dollar value of the extra work for both the lump sum and cost plus designated percentage methods so as not to exceed the following rates. The rates include all overhead and profit expenses.

- .1 Contractor - for any work performed by the Contractor's own forces, up to 20% of the cost;
- .2 Subcontractor - for work performed by Subcontractor's own forces, up to 20% of the cost;
- .3 Contractor - for work performed by Contractor's Subcontractor, up to 10% of the amount due the Subcontractor.

27.7 The Contractor shall keep and provide records as needed or directed for the cost plus designated percentage method. The Consultant shall review and certify the appropriate amount which includes the Contractor's overhead and profit. The Owner shall make payments based on the Consultant's certificate.

27.8 Cost reflected in Change Orders shall be limited to the following: cost of materials, cost of delivery, cost of labor (including Social Security, pension, Workers' Compensation insurance, and unemployment insurance), and cost of rental of power tools and equipment. Labor cost may

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include a pro-ratio share of a foreman's time only in the case of an extension of contract time granted due to the Change Order.

- 27.9 Overhead reflected in Change Orders shall be limited to the following: bond premium, supervision, wages of clerks, time keepers, and watchmen, small tools, incidental expenses, general office expenses, and all other overhead expenses directly related to the Change Order.
- 27.10 The Contractor shall provide credit to the Owner for labor, materials, equipment and other costs but not overhead and profit expenses for those Change Order items that result in a net value of credit to the contract.
- 27.11 The Owner may change the scope of work of the Project without invalidating the contract. The Owner shall notify the Contractor of a change of the scope of work for the Owner's Contractors, which may affect the work of this Contractor, without invalidating the contract. Change Orders for extension of the time caused by such changes shall be developed at the time of directing the change in scope of work.
- 27.12 The Consultant may order minor changes in the Work, not involving extra cost, which is consistent with the intent of the design or project.
- 27.13 The Contractor shall immediately give written notification to the Consultant of latent conditions discovered at the site which materially differ from those represented in the Drawings or Specifications, and which may eventually result in a change in the scope of work. The Contractor shall suspend work until receiving direction from the Consultant. The Consultant shall promptly investigate the conditions and respond to the Contractor's notice with direction that avoids any unnecessary delay of the Work. The Consultant shall determine if the discovered conditions warrant a Change Order.
- 27.14 The Contractor shall, within ten calendar days of receipt of the information, give written notification to the Consultant if the Contractor claims that instructions by the Consultant will constitute extra cost not accounted for by Change Order or otherwise under the contract. The Consultant shall promptly respond to the Contractor's notice with direction that avoids any unnecessary delay of the Work. The Consultant shall determine if the Contractor's claim warrants a Change Order.

**28. Correction of the Work**

- 28.1 The Contractor shall promptly remove from the premises all work the Consultant declares is non-conforming to the contract. The Contractor shall replace the work properly at no expense to the Owner. The Contractor is also responsible for the expenses of others whose work was damaged or destroyed by such remedial work.
- 28.2 The Owner may elect to remove non-conforming work if it is not removed by the Contractor within a reasonable time, that time defined in a written notice from the Consultant. The Owner may elect to store removed non-conforming work not removed by the Contractor at the Contractor's expense. The Owner may, with ten days written notice, dispose of materials which the Contractor does not remove. The Owner may sell the materials and apply the net proceeds, after deducting all expenses, to the costs that should have been borne by the Contractor.

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28.3 The Contractor shall remedy any defects due to faulty materials or workmanship and pay for any related damage to other work which appears within a period of one year from the date of substantial completion, and in accord with the terms of any guarantees provided in the contract. The Owner shall promptly give notice of observed defects to the Contractor and Consultant. The Consultant shall determine the status of all claimed defects. The Contractor shall perform all remedial work without unjustifiable delay in either the initial response or the corrective action.

28.4 The Consultant may authorize, after a reasonable notification to the Contractor, an equitable deduction from the contract amount in lieu of the Contractor correcting non-conforming or defective work.

**29. Owner's Right to do Work**

29.1 The Owner may, using other contractors, correct deficiencies attributable to the Contractor, or complete unfinished work. Such action shall take place only after giving the Contractor three days written notice, and provided the Consultant approves of the proposed course of action as an appropriate remedy. The Owner may then deduct the cost of the remedial work from the amount due the Contractor.

29.2 The Owner may act with their sole discretion when the Contractor is unable to take action in emergency situations that potentially effect health, life or serious damage to the premises or adjacent properties, to prevent such potential loss or injury. The Owner shall inform the Contractor of the emergency work performed, particularly where it may affect the work of the Contractor.

**30. Termination of Contract and Stop Work Action**

30.1 The Owner may, owing to a certificate of the Consultant indicating that sufficient cause exists to justify such action, without prejudice to any other right or remedy and after giving the Contractor and the Contractor's surety seven days written notice, terminate the employment of the Contractor. At that time the Owner may take possession of the premises and of all materials, tools and appliances on the premises and finish the work by whatever method the Owner may deem expedient. Cause for such action by the Owner includes:

- .1 the contractor is adjudged bankrupt, or makes a general assignment for the benefit of its creditors, or
- .2 a receiver is appointed due to the Contractor's insolvency, or
- .3 the Contractor persistently or repeatedly refuses or fails to provide enough properly skilled workers or proper materials, or
- .4 the Contractor fails to make prompt payment to Subcontractors or suppliers of materials or labor, or
- .5 the Contractor persistently disregards laws, ordinances or the instructions of the Consultant, or is otherwise found guilty of a substantial violation of a provision of the Contract Documents.

30.2 The Contractor is not entitled, as a consequence of the termination of the employment of the Contractor as described above, to receive any further payment until the Work is finished. If the unpaid balance of the contract amount exceeds the expense of finishing the Work, including compensation for additional architectural, managerial and administrative services, such balance

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shall be paid to the Contractor. If the expense of finishing the Work exceeds the unpaid balance, the Contractor shall pay the difference to the Owner. The Consultant shall certify the expense incurred by the Contractor's default. This obligation for payment shall continue to exist after termination of the contract.

30.3 The Contractor may, if the Work is stopped by order of any court or other public authority for a period of thirty consecutive days, and through no act or fault of the Contractor or of anyone employed by the Contractor, with seven days written notice to the Owner and the Consultant, terminate this contract. The Contractor may then recover from the Owner payment for all work executed, any proven loss and reasonable profit and damage.

30.4 The Contractor may, if the Consultant fails to issue a certificate for payment within seven days after the Contractor's formal request for payment, through no fault of the Contractor, or if the Owner fails to pay to the Contractor within 30 days after submission of any sum certified by the Consultant, with seven days written notice to the Owner and the Consultant, stop the Work or terminate this Contract.

**31. Delays and Extension of Time**

31.1 The completion date of the contract shall be extended if the work is delayed by changes ordered in the work which have approved time extensions, or by an act or neglect of the Owner, the Consultant, or the Owner's Contractor, or by strikes, lockouts, fire, flooding, unusual delay in transportation, unavoidable casualties, or by other causes beyond the Contractor's control. The Consultant shall determine the status of all claimed causes.

31.2 The contract shall not be extended for delay occurring more than seven calendar days before the Contractor's claim made in writing to the Consultant. In case of a continuing cause of delay, only one claim is necessary.

31.3 The contract shall not be extended due to failure of the Consultant to furnish drawings if no schedule or agreement is made between the Contractor and the Consultant indicating the dates which drawings shall be furnished and fourteen calendar days has passed after said date for such drawings.

31.4 This article does not exclude the recovery of damages for delay by either party under other provisions in the Contract Document.

**32. Payments to the Contractor**

32.1 As noted under *Preconstruction Conference* in this section, the Contractor shall submit a Schedule of Values form, before the first application for payment, for approval by the Owner and Consultant. The Consultant may direct the Contractor to provide evidence that supports the correctness of the form. The approved Schedule of Values shall be used as a basis for payments.

32.2 The Contractor shall submit an application for each payment ("Requisition for Payment") on a form approved by the Owner and Consultant. The Consultant may require receipts or other documents showing the Contractor's payments for materials and labor, including payments to Subcontractors.

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- 32.3 The Contractor shall submit Requisitions for Payment as the work progresses not more frequently than once each month, unless the Owner approves a more frequent interval due to unusual circumstances. The Requisition for Payment is based on the proportionate quantities of the various classes of work completed or incorporated in the Work, in agreement with the actual progress of the Work and the dollar value indicated in the Schedule of Values.
- 32.4 The Consultant shall verify and certify each Requisition for Payment which appears to be complete and correct prior to payment being made by the Owner. The Consultant may certify an appropriate amount for materials not incorporated in the Work which have been delivered and suitably stored at the site. The Contractor shall submit bills of sale, insurance certificates, or other such documents that will adequately protect the Owner's interests prior to payments being certified.
- 32.5 In the event any materials delivered but not yet incorporated in the Work have been included in a certified Requisition for Payment with payment made, and said materials thereafter are damaged, deteriorated or destroyed, or for any reason whatsoever become unsuitable or unavailable for use in the Work, the full amount previously allowed shall be deducted from subsequent payments unless the Contractor satisfactorily replaces said material.
- 32.6 The Contractor may request certification of an appropriate dollar amount for materials not incorporated in the Work which have been delivered and suitably stored away from the site. The Contractor shall submit bills of sale, insurance certificates, right-of-entry documents or other such documents that will adequately protect the Owner's interests. The Consultant shall determine if the Contractor's documentation for the materials is complete and specifically designated for the Project. The Owner may allow certification of such payments.
- 32.7 Subcontractors may request, and shall receive from the Consultant, copies of approved Requisitions for Payment showing the amounts certified in the Schedule of Values.
- 32.8 Certified Requisitions for Payment, payments made to the Contractor, or partial or entire occupancy of the project by the Owner shall not constitute an acceptance of any work that does not conform to the Contract Documents. The making and acceptance of the final payment constitutes a waiver of all claims by the Owner, other than those arising from unsettled liens, from faulty work or materials appearing within one year from final payment or from requirements of the Drawings and Specifications, and of all claims by the Contractor, except those previously made and still unsettled.
33. Payments Withheld
- 33.1 The Owner shall retain five percent of each payment due the Contractor as part security for the fulfillment of the contract by the Contractor. The Owner may make payment of a portion of this "retainage" to the Contractor temporarily or permanently during the progress of the Work. The Owner may thereafter withhold further payments until the full amount of the five percent is reestablished. The Contractor may deposit with the Maine State Treasurer certain securities in place of retainage amounts due according to Maine Statute (5 M.R.S. §1746).

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- 33.2 The Consultant may withhold or nullify the whole or a portion of any Requisitions for Payment submitted by the Contractor in the amount that may be necessary, in his reasonable opinion, to protect the Owner from loss due to any of the following:
- .1 defective work not remedied;
  - .2 claims filed or reasonable evidence indicating probable filing of claims;
  - .3 failure to make payments properly to Subcontractors or suppliers;
  - .4 a reasonable doubt that the contract can be completed for the balance then unpaid;
  - .5 liability for damage to another contractor.

The Owner shall make payment to the Contractor, in the amount withheld, when the above circumstances are removed.

**34. Liens**

- 34.1 The Contractor shall deliver to the Owner a complete release of all liens arising out of this contract before the final payment or any part of the retainage payment is released. The Contractor shall provide with the release of liens an affidavit asserting each release includes all labor and materials for which a lien could be filed. Alternately, the Contractor, in the event any Subcontractor or supplier refuses to furnish a release of lien in full, may furnish a bond satisfactory to the Owner, to indemnify the Owner against any lien.
- 34.2 In the event any lien remains unsatisfied after all payments to the Contractor are made by the Owner, the Contractor shall refund to the Owner all money that the latter may be compelled to pay in discharging such lien, including all cost and reasonable attorney's fees.

**35. Workmanship**

- 35.1 The Contractor shall provide materials, equipment, and installed work equal to or better than the quality specified in the Contract Documents and approved in submittal and sample. The installation methods shall be of the highest standards, and the best obtainable from the respective trades. The Consultant's decision on the quality of work shall be final.
- 35.2 The Contractor shall know local labor conditions for skilled and unskilled labor in order to apply the labor appropriately to the Work. All labor shall be performed by individuals well skilled in their respective trades.
- 35.3 The Contractor shall perform all cutting, fitting, patching and placing of work in such a manner to allow subsequent work to fit properly, whether that be by the Contractor, the Owner's Contractors or others. The Owner and Consultant may advise the Contractor regarding such subsequent work. Notwithstanding the notification or knowledge of such subsequent work, the Contractor may be directed to comply with this standard of compatible construction by the Consultant at the Contractor's expense.
- 35.4 The Contractor shall request clarification or revision of any design work by the Consultant, prior to commencing that work, in a circumstance where the Contractor believes the work cannot feasibly be completed at the highest quality, or as indicated in the Contract Documents. The Consultant shall respond to such requests in a timely way, providing clarifying information, a feasible revision, or instruction allowing a reduced quality of work. The Contractor shall follow the direction of the Consultant regarding the required request for information.

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- 35.5 The Contractor shall guarantee the Work against any defects in workmanship and materials for a period of one year commencing with the date of the Certificate of Substantial Completion, unless specified otherwise for specific elements of the project. The Work may also be subdivided in mutually agreed upon components, each defined by a separate Certificate of Substantial Completion.
36. Close-out of the Work
- 36.1 The Contractor shall remove from the premises all waste materials caused by the work. The Contractor shall make the spaces "broom clean" unless a more thorough cleaning is specified. The Contractor shall clean all windows and glass immediately prior to the final inspection, unless otherwise directed.
- 36.2 The Owner may conduct the cleaning of the premises where the Contractor, duly notified by the Consultant, fails to adequately complete the task. The expense of this cleaning may be deducted from the sum due to the Contractor.
- 36.3 The Contractor shall participate in all final inspections and acknowledge the documentation of unsatisfactory work, customarily called the "punch list", to be corrected by the Contractor. The Consultant shall document the successful completion of the Work in a dated Certificate of Substantial Completion, to be signed by Owner, Consultant, and Contractor.
- 36.4 The Contractor shall not call for final inspection of any portion of the Work that is not completely and permanently installed. The Contractor may be found liable for the expenses of individuals called to final inspection meetings prematurely.
- 36.5 The Contractor and all major Subcontractors shall participate in the end-of-warranty-period conference, typically scheduled close to one year after the Substantial Completion date.
37. Date of Completion and Liquidated Damages
- 37.1 The Contractor may make a written request to the Owner for an extension or reduction of time, if necessary. The request shall include the reasons the Contractor believes justifies the proposed completion date. The Owner may grant the revision of the contract completion date if the Work was delayed due to conditions beyond the control and the responsibility of the Contractor. The Contractor shall not conduct unauthorized accelerated work or file delay claims to recover alleged damages for unauthorized early completion.
- 37.2 The Contractor shall vigorously pursue the completion of the Work and notify the Owner of any factors that have, may, or will affect the approved Schedule of the Work. The Contractor may be found responsible for expenses of the Owner or Consultant if the Contractor fails to make notification of project delays.
- 37.3 The Project is planned to be done in an orderly fashion which allows for an iterative submittal review process, construction administration including minor changes in the Work and some bad weather. The Contractor shall not file delay claims to recover alleged damages on work the Consultant determines has followed the expected rate of progress.

**00 72 13**  
**General Conditions**

- 37.4 The Consultant shall prepare the Certificate of Substantial Completion which, when signed by the Owner and the Contractor, documents the date of Substantial Completion of the Work or a designated portion of the Work. The Owner shall not consider the issuance of a Certificate of Occupancy by an outside authority a prerequisite for Substantial Completion if the Certificate of Occupancy cannot be obtained due to factors beyond the Contractor's control.
- 37.5 Liquidated Damages may be deducted from the sum due to the Contractor for each calendar day that the Work remains uncompleted after the completion date specified in the Contract or an approved amended completion date. The dollar amount per day shall be calculated using the Schedule of Liquidated Damages table shown below.

If the original contract amount is:	The per day Liquidated Damages shall be:
Less than \$100,000	\$250
\$100,000 to less than \$2,000,000	\$750
\$2,000,000 to less than \$10,000,000	\$1,500
\$10,000,000 and greater	\$1,500 plus \$250 for each \$2,000,000 over \$10,000,000

### 38. Dispute Resolution

#### 38.1 Mediation

- 38.1.1 A dispute between the parties which arises under this Contract which cannot be resolved through informal negotiation, shall be submitted to a neutral mediator jointly selected by the parties.
- 38.1.2 Either party may file suit before or during mediation if the party, in good faith, deems it to be necessary to avoid losing the right to sue due to a statute of limitations. If suit is filed before good faith mediation efforts are completed, the party filing suit shall agree to stay all proceedings in the lawsuit pending completion of the mediation process, provided such stay is without prejudice.
- 38.1.3 In any mediation between the Owner and the Consultant, the Owner has the right to consolidate related claims between Owner and Contractor.

#### 38.2 Arbitration

- 38.2.1 If the dispute is not resolved through mediation, the dispute shall be settled by arbitration. The arbitration shall be conducted before a panel of three arbitrators. Each party shall select one arbitrator; the third arbitrator shall be appointed by the arbitrators selected by the parties. The arbitration shall be conducted in accordance with the Maine Uniform Arbitration Act (MUAA), except as otherwise provided in this section.
- 38.2.2 The decision of the arbitrators shall be final and binding upon all parties. The decision may be entered in court as provided in the MUAA.
- 38.2.3 The costs of the arbitration, including the arbitrators' fees shall be borne equally by the parties to the arbitration, unless the arbitrator orders otherwise.

**00 72 13**  
**General Conditions**

38.2.4 In any arbitration between the Owner and the Consultant, the Owner has the right to consolidate related claims between Owner and Contractor.

**00 73 46**  
**Wage Determination Schedule**

**PART 1- GENERAL**

**1.1 Related Documents**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specifications Sections, apply to this Section.

**1.2 Summary**

- A. This Section includes the wage determination requirements for Contractors as issued by the State of Maine Department of Labor Bureau of Labor Standards or the United States Department of Labor.

**1.3 Requirements**

- A. Conform to the wage determination schedule to be determined for 2021 that will be provided by addendum when completed. See 2020 determination, which is shown on the following page, for reference. Note that 2021 wages may be substantially different than the 2020 determination.

**PART 2 - PRODUCTS (not used)**

**PART 3 - EXECUTION (not used)**

**00 73 46**  
**Wage Determination Schedule**

End of Section 00 73 46

**Wage Determination - In accordance with 26 MRS §1301 et. seq., this is a determination by the Bureau of Labor Standards, of the fair minimum wage rate to be paid to laborers and workers employed on the below titled project.**

**2020 Fair Minimum Wage Rates  
Heavy & Bridge Kennebec County**

<u>Occupation Title</u>	<u>Minimum Wage</u>	<u>Minimum Benefit</u>	<u>Total</u>	<u>Occupation Title</u>	<u>Minimum Wage</u>	<u>Minimum Benefit</u>	<u>Total</u>
Asphalt Raker	\$16.00	\$0.00	\$16.00	Laborers (Helpers & Tenders)	\$17.00	\$3.33	\$20.33
Backhoe Loader Operator	\$26.00	\$8.61	\$34.61	Laborer - Skilled	\$21.50	\$3.99	\$25.49
Boom Truck (Truck Crane) Operator	\$27.97	\$7.25	\$35.22	Line Erector Power/Cable Splicer	\$22.55	\$8.86	\$31.41
Bricklayer	\$24.50	\$4.47	\$28.97	Loader Operator - Front-End	\$23.00	\$3.76	\$26.76
Bulldozer Operator	\$22.00	\$4.70	\$26.70	Mechanic- Maintenance	\$23.69	\$5.16	\$28.85
Carpenter	\$25.95	\$5.10	\$31.05	Mechanic- Refrigeration	\$27.00	\$4.21	\$31.21
Carpenter - Rough	\$22.29	\$4.14	\$26.43	Millwright	\$31.38	\$5.62	\$37.00
Cement Mason/Finisher	\$18.00	\$0.72	\$18.72	Painter	\$22.00	\$0.00	\$22.00
Communication Equip Installer	\$24.50	\$0.44	\$24.94	Pipe/Steam/Sprinkler Fitter	\$32.32	\$17.36	\$49.68
Comm Trans Microwave & Cell	\$21.00	\$0.00	\$21.00	Pipelayer	\$26.78	\$6.25	\$33.03
Crane Operator =>15 Tons)	\$32.00	\$8.59	\$40.59	Plumber (Licensed)	\$26.00	\$4.50	\$30.50
Diver	\$24.00	\$3.12	\$27.12	Plumber Helper/Trainee	\$19.00	\$2.98	\$21.98
Earth Auger Operator	\$26.65	\$6.12	\$32.77	Propane/Natural Gas Serv/Install	\$32.00	\$9.23	\$41.23
Electrician - Licensed	\$32.50	\$8.38	\$40.88	Rigger	\$23.00	\$7.10	\$30.10
Electrician Helper/Cable Puller	\$17.75	\$4.83	\$22.58	Roller Operator - Earth	\$16.43	\$2.69	\$19.12
Excavator Operator	\$25.00	\$0.00	\$25.00	Roller Operator - Pavement	\$20.25	\$3.56	\$23.81
Fence Setter	\$18.00	\$1.30	\$19.30	Screed/Wheelman	\$18.50	\$2.45	\$20.95
Flagger	\$13.00	\$0.00	\$13.00	Sheet Metal Worker	\$26.56	\$6.03	\$32.59
Grader/Scraper Operator	\$22.00	\$2.16	\$24.16	Truck Driver - Light	\$16.00	\$0.44	\$16.44
Industrial Truck (Forklift) Operator	\$29.07	\$6.63	\$35.70	Truck Driver - Medium	\$19.00	\$1.97	\$20.97
Ironworker - Ornamental	\$22.30	\$22.37	\$44.67	Truck Driver - Heavy	\$19.00	\$0.00	\$19.00
Ironworker - Reinforcing	\$25.00	\$6.00	\$31.00	Truck Driver - Tractor Trailer	\$26.78	\$6.42	\$33.20
Ironworker - Structural	\$20.00	\$4.55	\$24.55				

**The Laborer classifications include a wide range of work duties. Therefore, if any specific occupation to be employed on this project is not listed in this determination, call the Bureau of Labor Standards at the above number for further clarification.**

**Welders are classified in the trade to which the welding is incidental.**

**Apprentices – The minimum wage rate for registered apprentices are those set forth in the standards and policies of the Maine State Apprenticeship and Training Council for approved apprenticeship programs.**

**Title 26 §1310 requires that a clearly legible statement of all fair minimum wage and benefits rates to be paid the several classes of laborers, workers and mechanics employed on the construction on the public work must be kept posted in a prominent and easily accessible place at the site by each contractor and subcontractor subject to sections 1304 to 1313.**

**Appeal – Any person affected by the determination of these rates may appeal to the Commissioner of Labor by filing a written notice with the Commissioner stating the specific grounds of the objection within ten (10) days from the filing of these rates.**

**A true copy**

**Attest:**   
**Scott R. Cotnoir**  
**Wage & Hour Director**  
**Bureau of Labor Standards**

**Expiration Date: 12-31-2020**

**SECTION 01 10 00**

**SUMMARY OF WORK**

**PART 1 – GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specifications, apply to this section.

**1.2 SUMMARY**

- A. This section includes the following:
1. Work Covered by the Contract Documents;
  2. Type of the Work;
  3. Contract;
  4. Permits;
  5. Use of Premises;
  6. Coordination;
  7. Schedule of Values.

**1.3 WORK COVERED BY THE CONTRACT DOCUMENTS**

- A. General
1. Name of Project: Augusta Superior Court Parking Lot Expansion  
1 Court Street, Augusta, Maine
  2. General Description: Construction will include the installation of a retaining wall and underdrain system, removal and replacement of paving, granite curbing, guardrail and repaving of parking lot, regrading and loam and seed as shown on the plans.
  3. Contract Documents include plans and specifications entitled Augusta Superior Court Parking Lot Repair Prepared by Walsh Engineering Associates, Inc. dated January 8, 2021.
  4. Owner: State of Main Judicial Branch  
Administrative Office of Courts  
Court Facilities  
PO Box 4820  
Portland, ME 04112-4820S  
Tel: (207) 822-0792

5. Project Designer/Engineer: Walsh Engineering Associates, Inc.  
1 Karen Drive, Suite 2A  
Westbrook, Maine 04092  
Tel: (207) 553-9898

- B. Contract Documents: Contract Documents indicate the Work of Contract, and related provisions of Project which may include, but are not necessarily limited to, the following:
1. Existing site conditions and restrictions.
  2. Other work prior to Work of Contract.
  3. Coordination with existing work.
  4. Other work subsequent to Work of Contract.
  5. Alternates which are Work of Contract and Alternates, which are not Work of Contract.
- C. Summary by References: Work of the Contract can be summarized by references to the Contract, General Conditions, Supplementary Conditions, Specification Sections, addenda and modifications to the contract documents issued subsequent to the initial printing of this project manual, and including, but not necessarily limited to, printed material referenced by any of these. It is recognized that work of the Contract is also unavoidably affected or influenced by governing regulations, natural phenomenon, including weather conditions and other forces outside the contract documents.
- D. Abbreviated Written Summary: Briefly and without force and effect upon the contract documents, the Work of the Contract can be summarized as follows:

***Base Bid:*** – Construction will include the installation of a retaining wall and underdrain system, removal and replacement of paving, granite curbing, guardrail and repaving of parking lot, regrading and loam and seed as shown on the plans.

#### 1.4 TYPE OF CONTRACT

- A. All project components will be constructed under a single prime contract.

#### 1.5 PERMITS

- A. The Owner has obtained a Natural Resource Protection Act Permit by Rule for construction adjacent to a protected resource. Any other state and local permits shall be obtained by the contractor prior to any construction activity.
- B. Fees for all other permits, included but are not limited to those required by private utility companies, State of Maine or federal entities, Town of West Bath, shall be included in Contract Sum and paid by Contractor, unless otherwise specified.

#### 1.6 USE OF PREMISES

- A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits of Work.

#### 1.7 COORDINATION

- A. General: The work of this Contract includes coordination of the entire work of the project with the Owner or Owner's Representative and any and all coordination with sub-contractors and suppliers. Note that the court building is in operation on weekdays and access must be maintained for employees and the public at all times the facility is open.

1.8 SCHEDULE OF VALUES

- A. Within 15 days of award of contract, submit a schedule of values to the Owner.

**PART 2 – PRODUCTS** (not applicable)

**PART 3 – EXECUTION**

3.1 COMMENCEMENT OF WORK

- A. Once a contract is signed with the selected contractor, all work can begin including shop drawings.
- B. Contractor shall not begin any work on site until site access is granted by the owner.

END OF SECTION 01 10 00

## **SECTION 01 25 00**

### **SUBSTITUTION PROCEDURE**

#### **PART 1 – GENERAL**

##### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
  - 1. Division 01 Section 01 22 00 "Unit Prices" for products selected under a unit price.
  - 2. Division 01 Section 01 23 00 "Alternates" for products selected under an alternate.
  - 3. Divisions 02 through 33 Sections for specific requirements and limitations for substitutions.

##### **1.3 DEFINITIONS**

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
  - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

##### **1.4 ACTION SUBMITTALS**

- A. 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. Substitution Request Form: Use facsimile of form provided at end of Section.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    - b. Coordination information, including a list of changes or revisions 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. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
  - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - e. Samples, where applicable or requested.
  - f. Certificates and qualification data, where applicable or requested.
  - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
  - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
  - j. Detailed comparison of 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 date of receipt of purchase order, lack of availability, or delays in delivery.
  - k. Cost information, including a proposal of change, if any, in the Contract Sum.
  - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
  - m. 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.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within three days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution by addendum.
- a. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated or notification is not made by addendum.

## 1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

- B. Products with asbestos: Asbestos containing materials are not to be purchased or installed in this project.

## 1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

## PART 2 – PRODUCTS

### 2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - b. Substitution request is fully documented and properly submitted.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    - d. Requested substitution will not adversely affect Contractor's construction schedule.
    - e. Requested substitution has received necessary approvals of authorities having jurisdiction.
    - f. Requested substitution is compatible with other portions of the Work.
    - g. Requested substitution has been coordinated with other portions of the Work.
    - h. Requested substitution provides specified warranty.
    - i. 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.
- B. Substitutions for Convenience: Article 9 of Section 00 72 00, Conditions of the Contract; specify time restrictions for submitting requests for Substitutions during the

bidding period to requirements specified in this section. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
  - a. 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 Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
  - b. Requested substitution does not require extensive revisions to the Contract Documents.
  - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  - d. Substitution request is fully documented and properly submitted.
  - e. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
  - f. Requested substitution will not adversely affect Contractor's construction schedule.
  - g. Requested substitution has received necessary approvals of authorities having jurisdiction.
  - h. Requested substitution is compatible with other portions of the Work.
  - i. Requested substitution has been coordinated with other portions of the Work.
  - j. Requested substitution provides specified warranty.
  - k. 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.

**PART 3 - EXECUTION** (not used)

END OF SECTION 01 25 00

**SECTION 01 26 00**

**CONTRACT MODIFICATION PROCEDURES**

**PART 1 – GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
  - 1. Division 01 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.
  - 2. Division 01 Section "Unit Prices" for administrative requirements for using unit prices.

**1.3 MINOR CHANGES IN THE WORK**

- A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions".

**1.4 PROPOSAL REQUESTS**

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
  - 2. Within 20 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum 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 costs of labor and supervision directly attributable to the change.
    - d. 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 changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
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 Sum 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 costs of labor and supervision directly attributable to the change.
  5. 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.
  6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
  7. Proposal Request Form: Use CSI Form 13.6A, "Change Order Request (Proposal)," with attachments CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail."

#### 1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, Architect will issue a Change Order form for signatures of Owner and Contractor.
- B. Any Change Order that involves an adjustment to the Contract Sum or change of material requires VCGS approval.

#### **PART 2 – PRODUCTS (not used)**

#### **PART 3 - EXECUTION (not used)**

END OF SECTION 01 26 00

## **SECTION 01 29 00**

### **PAYMENT PROCEDURES**

#### **PART 1 – GENERAL**

##### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
  - 1. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
  - 2. Division 01 Section "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

##### **1.3 DEFINITIONS**

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

##### **1.4 SCHEDULE OF VALUES**

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
  - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
    - a. Application for Payment forms with continuation sheets.
    - b. Submittal schedule.
    - c. Items required to be indicated as separate activities in Contractor's construction schedule.
  - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
  - 3. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work; provide subschedules showing values coordinated with each element.
- B. Format and Content: Use 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 Architect.
  - c. Architect's project number.
  - d. Contractor's name and address.
  - e. Date of submittal.
2. Submit draft of request for payment form.
3. 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. Name of subcontractor.
  - d. Name of manufacturer or fabricator.
  - e. Name of supplier.
  - f. Change Orders (numbers) that affect value.
  - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one hundredth percent, adjusted to total 100 percent.
    - 1) Labor.
    - 2) Materials.
    - 3) Equipment.
4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
6. 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. If required, include evidence of insurance.
7. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
8. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by Contractor.
9. 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.
10. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

## 1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
  - 1. Initial 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 indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
  - 1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect 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 for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
  - 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
  - 1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
  - 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
  - 3. Provide summary documentation for stored materials indicating the following:
    - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- F. Transmittal: Submit five signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24

hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. **Waivers of Mechanic's Lien:** With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. When an application shows completion of an item, submit conditional final or full waivers.
  3. The list of subcontractors, principal suppliers and fabricators shall be used to designate which entities involved in the Work must submit waivers. The list shall be approved by the Owner.
  4. Submit final Application for Payment with or proceeded by conditional final waivers from every entity involved with performance of the Work covered by the application that is lawfully entitled to a lien.
  5. **Waiver Forms:** Submit executed waivers of lien on forms, acceptable to Owner.
- H. **Initial Application for Payment:** Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors;
  2. Schedule of values;
  3. Contractor's construction schedule (preliminary, if not final);
  4. Submittal schedule (preliminary if not final);
  5. List of Contractor's staff assignments;
  6. Copies of building permits;
  7. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work;
  8. Initial progress report;
  9. Report of preconstruction conference;
  10. Certificates of insurance and insurance policies; and
  11. Data needed to acquire Owner's insurance;
- I. **Application for Payment at Substantial Completion:** After Architect issues 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. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. **Final Payment Application:** After completing Project closeout requirements, 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. Final submittal of record documents and operation and maintenance data.
3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
4. Updated final statement, accounting for final changes to the Contract Sum.
5. Evidence that claims have been settled.
6. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
7. Final liquidated damages settlement statement.

**PART 2 – PRODUCTS (not used)**

**PART 3 - EXECUTION (not used)**

END OF SECTION 01 29 00

**SECTION 01 31 00**

**PROJECT MANAGEMENT AND COORDINATION**

**PART 1 – GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. Coordination Drawings.
  - 2. Administrative and supervisory personnel.
  - 3. Project meetings.
- B. Related section include the following:
  - 1. Division 01 Section “Closeout Procedures” for coordination Contract closeout.

**1.3 COORDINATION**

- A. Coordination: Coordinate construction operations included in different 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.
  - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical. Coordinate location of pipes, conduits, ducts and similar items in confined areas to assure proper fit and access. Contractor is responsible for handling interferences created by the work of subcontractors (example: sprinkler pipe interfering with installation of duct work; duct work interfering with installation of light fixtures).
- B. Coordinate with contractors doing work for the Owner under separate contracts. 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. Prepare similar memoranda for Owner and separate contractors if coordination of their work is required.

- D. 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. Preinstallation conferences.
  7. Project closeout activities.
  8. Startup and adjustment of systems.
  9. Project closeout activities.
- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

#### 1.4 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings as determined by the Contractor and subcontractor, if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
    - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    - b. Indicate required installation sequences.
    - c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel 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. Keep list current at all times.

#### 1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of operations with other contractors.

## 1.6 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
  - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
  - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  - 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, Architect, and VCGS within three days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
  - 1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties 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. Phasing;
    - c. Critical work sequencing and long-lead items;
    - d. Designation of key personnel and their duties;
    - e. Procedures for processing field decisions and Change Orders;
    - f. Procedures for requests for interpretations (RFIs);
    - g. Procedures for testing and inspecting;
    - h. Procedure for commissioning;
    - i. Procedures for processing Applications for Payment;
    - j. Distribution of the Contract Documents;
    - k. Submittal procedures;
    - l. Preparation of Record Documents;
    - m. Use of the premises and existing building;
    - n. Work restrictions;
    - o. Owner's occupancy requirements;
    - p. Responsibility for temporary facilities and controls;
    - q. Construction waste management and recycling;
    - r. Parking availability;
    - s. Office, work, and storage areas;
    - t. Equipment deliveries and priorities;
    - u. First aid;
    - v. Security;
    - w. Progress cleaning; and
    - x. Working hours.
    - y. Record drawings and documents process
  - 3. Minutes: Record and distribute meeting minutes.
  - 4. Include action items and responsible party.

- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
  2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. The Contract Documents;
    - b. Options;
    - c. Related requests for interpretations (RFIs);
    - d. Related Change Orders;
    - e. Purchases;
    - f. Deliveries;
    - g. Submittals;
    - h. Review of mockups;
    - i. Possible conflicts;
    - j. Compatibility problems;
    - k. Time schedules;
    - l. Weather limitations;
    - m. Manufacturer's written recommendations;
    - n. Warranty requirements;
    - o. Compatibility of materials;
    - p. Acceptability of substrates;
    - q. Temporary facilities and controls;
    - r. Space and access limitations;
    - s. Regulations of authorities having jurisdiction;
    - t. Testing and inspecting requirements;
    - u. Installation procedures;
    - v. Coordination with other work;
    - w. Required performance results;
    - x. Protection of adjacent work; and
    - y. Protection of construction and personnel.
  3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include action items and responsible party.
  5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Monthly Meetings: Conduct progress meetings at monthly intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with 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.
      - 1) Review schedule for next period.
    - b. Application for Payment: Contractor shall bring copy of Application for Payment to meeting. Review Application for Payment and required attachments, including record drawing and documents status, waivers of mechanic's liens, list of completed tests, checklists, and similar requirements for the work are submitted and in compliance with the Contract Documents.
    - c. 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) Off-site fabrication;
      - 6) Access;
      - 7) Site utilization;
      - 8) Temporary facilities and controls;
      - 9) Work hours;
      - 10) Hazards and risks;
      - 11) Progress cleaning;
      - 12) Quality and work standards;
      - 13) Status of correction of deficient items;
      - 14) Field observations;
      - 15) Requests for interpretations (RFIs);
      - 16) Status of proposal requests;
      - 17) Pending changes;
      - 18) Status of Change Orders;
      - 19) Pending claims and disputes;
      - 20) Documentation of information for payment requests; and
      - 21) Record drawings and documents status.
  3. Minutes: Record and distribute the meeting minutes.
    - a. Include action items and responsible party.
    - b. *The Veterans Cemetery Grant Service (VCGS) shall be copied on all published meeting minutes, progress reports and monthly field reports.*
  4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
    - 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.

- E. Coordination/Progress Meetings: Conduct Project coordination/progress meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences
1. Attendees: In addition to representatives of Owner, each contractor, subcontractor, supplier, and other entity concerned with 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 the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined 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 contractor present, including the following:
      - 1) Interface requirements;
      - 2) Sequence of operations;
      - 3) Status of submittals;
      - 4) Deliveries;
      - 5) Off-site fabrication;
      - 6) Access;
      - 7) Site utilization;
      - 8) Temporary facilities and controls;
      - 9) Work hours;
      - 10) Hazards and risks;
      - 11) Progress cleaning;
      - 12) Quality and work standards; and
      - 13) Change Orders;
  3. Conduct coordination meetings with mechanical, plumbing, sprinkler and electrical trades, and other trades affected by the work. Before the trades start work in an area of the building, review structural clearances and locations of ducts, pipes and fittings, conduits, light fixtures, equipment and other items that affect location and proper fit. Prepare coordination drawings as determined by the Contractor and subcontractors, where limited space availability necessitates maximum utilization of space for efficient installation of different components. Verify depths and clearances before fabrication of ductwork.
  4. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.
    - a. Include action items and responsible party.

- b. The Veterans Cemetery Grant Service (VCGS) shall be copied on all published meeting minutes, progress reports and monthly field reports.*

**PART 2 - PRODUCTS (not used)**

**PART 3 - EXECUTION (not used)**

END OF SECTION 01 31 00

**SECTION 01 33 00**

**SUBMITTAL PROCEDURE**

**PART 1 – GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 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 submittals.
  - 1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
  - 2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
  - 3. Division 01 Section "Quality Requirements" for submitting test and inspection reports and for mockup requirements.
  - 4. Division 01 Section "Closeout Procedures" for submitting warranties
  - 5. Divisions 02 through 32 Sections for specific requirements for submittals in those sections.

**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 responsive action. Submittals may be rejected for not complying with requirements.

**1.4 SUBMITTAL PROCEDURES**

- A. 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.
- B. 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. No extension of the Contract Time will be authorized because of failure to

transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days minimum for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days minimum for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Engineer's consultants, Owner, or other parties is indicated, allow 21 days minimum for initial review of each submittal.

C. 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 6 by 8 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;
  - g. Name of manufacturer;
  - h. Submittal number or other unique identifier, including revision identifier;
    - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01A).
  - i. Number and title of appropriate Specification Section;
  - j. Drawing number and detail references, as appropriate;
  - k. Location(s) where product is to be installed, as appropriate; and
  - l. Other necessary identification.

D. Deviations: Encircle or otherwise specifically identify deviations from the Contract Documents on submittals. Mark with dark colored pen that permits photocopying. Do not use highlighter.

E. Additional Copies: Unless additional copies are required for final submittal, and unless Engineer observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

1. Additional copies submitted for maintenance manuals will be marked with action taken and will be returned.

- F. 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. Transmittal Form: Provide locations on form for the following information:
    - a. Project name;
    - b. Date;
    - c. Destination (To:);
    - d. Source (From:);
    - e. Names of subcontractor, manufacturer, and supplier;
    - f. Category and type of submittal;
    - g. Submittal purpose and description;
    - h. Specification Section number and title;
    - i. Drawing number and detail references, as appropriate;
    - j. Transmittal number, numbered consecutively;
    - k. Submittal and transmittal distribution record;
    - l. Remarks; and
    - m. Signature of transmitter.
  2. 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 in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
  2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  3. Resubmit submittals until they are approved.
- H. 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.
- I. Use for Construction: Use only final submittals with mark indicating approval taken by Engineer.

## 1.5 CONTRACTOR'S USE OF ENGINEER'S CAD FILES

- A. Copies of drawings in digital format will be made available by the Engineer to those requesting same in accordance with the "Agreement Between Engineer of Record and Owner or Contractor for Transfer of Computer Aided Drafting (CAD) Files On Electronic Media" forms attached to the end of this section. Agreement form shall be filled out and signed by each party requesting computer aided drafting (CAD) files before electronic media is released to them.

## **PART 2 – PRODUCTS**

### **2.1 ACTION SUBMITTALS**

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
  - 1. Mark with dark colored pen that permits photocopying. Do not use highlighter.
- 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. Wiring diagrams showing factory-installed wiring
    - g. Printed performance charts;
    - h. Operational range diagrams;
    - i. Mill reports;
    - j. Standard product operation and maintenance manuals;
    - k. Compliance with specified referenced standards;
    - l. Testing by recognized testing agency;
    - m. Application of testing agency labels and seals; and
    - n. Notation of coordination requirements.
  - 4. Submit Product Data before or concurrent with Samples.
  - 5. Number of Copies: Submit three copies of Product Data, unless otherwise indicated. Engineer will return one copy for reproduction and distribution. Mark up and retain one returned copy as a Project Record Document.
- 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: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Dimensions;
    - b. Identification of products;
    - c. Fabrication and installation drawings;
    - d. Roughing-in and setting diagrams;
    - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring;
    - f. Shopwork manufacturing instructions;
    - g. Templates and patterns;
    - h. Schedules;
    - i. Design calculations;

- j. Compliance with specified standards;
  - k. Notation of coordination requirements;
  - l. Notation of dimensions established by field measurement;
  - m. Relationship to adjoining construction clearly indicated;
  - n. Seal and signature of professional engineer if specified; and
  - o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed.
- 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.
  - 3. Number of Copies: Submit three opaque copies of each submittal. Engineer will retain two copies; Engineer will return one copy for reproduction and distribution. Mark up and retain one returned copy as a Project Record. Drawing and copies where copies are required for operation and maintenance manuals.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
- 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  - 2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample;
    - b. Product name and name of manufacturer;
    - c. Sample source; and
    - d. Number and title of appropriate Specification Section.
  - 3. 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 designated as Owner's property, are the property of Contractor.
  - 4. 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. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return submittal with options selected.
  - 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or 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.

- a. Number of Samples: Submit three sets of Sample. Engineer will retain two sample sets; remainder will be returned
    - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated
    - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product.
  2. Number and name of room or space.
  3. Location within room or space.
  4. Number of Copies: Submit three copies of product schedule or list, unless otherwise indicated. Engineer will return one copy for reproduction and distribution.
    - a. Mark up and retain one returned copy as a Project Record Document.
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- G. Submittals Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- H. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."
- I. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- J. 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
  4. Number of Copies: Submit three copies of subcontractor list, unless otherwise indicated. Engineer will return one copy.
    - a. Mark up and retain one returned copy as a Project Record Document.

## 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. Engineer will not return copies.
  - 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 specified in Division 01 Section "Quality Requirements."
- B. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- C. Contractor's construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation".
- D. 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 owners, and other information specified.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience, where required.
- H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- J. 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 in the Contract Documents.
- K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. 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.

- L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - 1. Name of evaluation organization;
  - 2. Date of evaluation;
  - 3. Time period when report is in effect;
  - 4. Product and manufacturers' names;
  - 5. Description of product;
  - 6. Test procedures and results; and
  - 7. Limitations of use.
- M. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section "Quality Requirements."
- N. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- O. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- P. 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 in the Contract Documents.
- Q. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- R. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- S. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
  - 1. Preparation of substrates;
  - 2. Required substrate tolerances;
  - 3. Sequence of installation or erection;
  - 4. Required installation tolerances;
  - 5. Required adjustments; and
  - 6. Recommendations for cleaning and protection.

- T. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
  - 1. Name, address, and telephone number of factory-authorized service representative making report;
  - 2. Statement on condition of substrates and their acceptability for installation of product;
  - 3. Statement that products at Project site comply with requirements;
  - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken;
  - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements;
  - 6. Statement whether conditions, products, and installation will affect warranty;
  - 7. Other required items indicated in individual Specification Sections.
- U. 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.
- V. Material Safety Data Sheets (MSDSs): Submit information directly to Owner at end of the project; do not submit to Engineer. Maintain copy at the site for the duration of the construction.
  - 1. Engineer will not review submittals that include MSDSs and will return them.

## 2.3 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.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of 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.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
  - 1. The Contractor shall review submittals for completeness and compliance with the Contract Documents. If submittal contains substitutions, Contractor shall

process substitutions in accordance with Division 01 Section "Substitutions and Product Options," and not part of specified Shop Drawings or Product Data submittals. Contractor is responsible for keeping Subcontractors on time with the submittal schedule. If the Contractor submits submittals that are repeatedly rejected, requiring the Engineer to perform multiple reviews of the same submittal because of the failure to properly prepare and complete the submittals:

- a. Owner will compensate Engineer for such additional services.
- b. Owner will deduct the amount of such compensation from the final payment to the Contractor.

- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. 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.

### 3.2 ENGINEER'S ACTION

- A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- 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.
- C. The Engineer's marking of "Approved", "Approved as Noted" or similar verbiage means submittal has been reviewed for general conformance to the contract documents only and does not mean unqualified acceptance. The Contractor is fully responsible for compliance with the contract documents.
- D. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- E. Partial submittals are not acceptable, will be considered non-responsive, and will be returned without review.
- F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 33 00

## **SECTION 01 40 00**

### **QUALITY REQUIREMENTS**

#### **PART 1 – GENERAL**

##### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 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-assurance and -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 other quality assurance and control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related sections include the following:
  - 1. Divisions 02 through 33 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 substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples.
- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e. plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: 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.
- K. 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.

#### 1.4 CONFLICTING REQUIREMENTS

- A. General: 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.
- B. 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.

#### 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. 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.
- C. 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;
  - 7. Identification of product and Specification Section;
  - 8. Complete test or inspection data;
  - 9. Test and inspection results and an interpretation of test results;
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting;
  - 11. Comments or professional opinion on whether tested or inspected Work and materials complies with the Contract Document requirements;
  - 12. Name and signature of laboratory inspector;
  - 13. Recommendations on retesting and reinspecting.
- D. Permits, Licenses, and Certificates: For 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. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements
- B. 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.
- C. 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, as well as sufficient production capacity to produce required units.

- D. 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.
- 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.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. 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.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
  - 1. Contractor responsibilities include the following:
    - a. Provide test specimens representative of proposed products and construction;
    - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work;
    - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements;
    - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project;
    - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work;
    - f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
  - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Engineer, with copy to

Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Engineer.
  2. Notify Engineer seven days in advance of dates and times when mockups will be constructed.
  3. Demonstrate the proposed range of aesthetic effects and workmanship
  4. Obtain Engineer's approval of mockups before starting work, fabrication, or construction.
    - a. Allow seven days for initial review and each re-review of each mockup.
  5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  6. Demolish and remove mockups when directed, unless otherwise indicated.
- K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 02 through 33.

#### 1.7 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  2. Payment for these services will be made by the Owner.
  3. 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. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those 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 same entity engaged by Owner, unless agreed to in writing by Owner.
  2. Notify testing agencies 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 as specified in Division 01 Section "Submittal Procedures."
- 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 replaced Work that failed to comply with 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. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  - 6. 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
  - 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 -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.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for commencement of the Work.

- I. Distribution: Distribute schedule to Owner, Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

**PART 2 – PRODUCTS (not used)**

**PART 3 - EXECUTION**

**3.1 TEST AND INSPECTION LOG**

- A. Prepare a record of tests and inspections. Include the following:
  - 1. Date test or inspection was conducted.
  - 2. Description of the Work tested or inspected.
  - 3. Date test or inspection results were transmitted to Engineer.
  - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.

**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 Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
  - 2. Comply with the Contract Document requirements for Division 01 Section "Cutting and 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 01 40 00

## **SECTION 01 60 00**

### **PRODUCT REQUIREMENTS**

#### **PART 1 – GENERAL**

##### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### **1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
  - 1. Division 01 Section "Alternates" for products selected under an alternate.
  - 2. Division 01 Section "Substitutions and Product Options" for procedures and requirements for product substitutions.
  - 3. Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
  - 4. Divisions 01 through 32 Sections for specific requirements for warranties on products and installations specified to be warranted.

##### **1.3 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.

#### 1.4 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. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
  - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Engineer will determine which products shall be used.

#### 1.5 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.
- B. Delivery and Handling:
  - 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. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
  - 1. Store products to allow for inspection and measurement of quantity or counting of units.
  - 2. Store materials in a manner that will not endanger Project structure.
  - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  - 4. Store cementitious products and materials on elevated platforms.
  - 5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
  - 6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
  - 7. Protect stored products from damage and liquids from freezing.
  - 8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

## 1.6 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.
  - 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  - 2. 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.
- 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. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
  - 3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures".

## PART 2 – PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. 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.
  - 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
  - 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 Division 01 Section "Substitutions and Product Options" to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, that complies with requirements.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, that complies with requirements.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Division 01 Section "Substitutions and Product Options" for consideration of an unnamed product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Division 01 Section "Substitutions and Product Options" for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Engineer's sample. Engineer's decision will be final on whether a proposed product matches.
10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
  - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
  - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

**PART 3 - EXECUTION (not used)**

END OF SECTION 01 60 00

## **SECTION 01 73 00**

### **EXECUTION REQUIREMENTS**

#### **PART 1 – GENERAL**

##### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 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:
  - 1. Construction layout.
  - 2. General installation of products.
  - 3. Coordination of Owner-installed products.
  - 4. Progress cleaning.
  - 5. Starting and adjusting.
  - 6. Protection of installed construction.
  - 7. Correction of the Work.
- B. Related Section include the following:
  - 1. Division 01 Section “Project Management and Coordination” for procedures for coordinating field engineering with other construction activities.
  - 2. Division 01 Section “Submittal Procedures” for submitting surveys.
  - 3. Division 01 Section “Closeout Procedures” for submitting final property survey with Project Record Documents, recording, of Owner-accepted deviation from indicated lines and levels, and final cleaning.

#### **PART 2 – PRODUCTS (not used)**

#### **PART 3 - EXECUTION**

##### **3.1 EXAMINATION**

- A. Existing Conditions: The existence and location of site improvements, utilities, 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.
  - 1. Before construction, verify the location and points of connection of utility services.
- 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. 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 local utility and 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 to lay out the Work, verify layout information shown on Drawings. If discrepancies are discovered, notify Engineer promptly.
- B. General: Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.
  - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  - 3. Inform installers of lines and levels to which they must comply.

4. Check the location, level and plumb, of every major element as the Work progresses.
  5. Notify Engineer when deviations from required lines and levels exceed allowable tolerances.
  6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Level foundations and piers from two or more locations.
- E. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
1. Do not change or relocate existing benchmarks or control points without prior written approval of Engineer. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Engineer before proceeding.
  2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

### 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.
  2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated
  4. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling, unless indicated otherwise.
- B. Comply with manufacturer's 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. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm

that adequate provisions are made for locating and installing products to comply with indicated requirements.

- G. 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.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Engineer.
  - 2. Allow for building movement, including thermal expansion and contraction
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
  - 1. No asbestos containing materials shall be used in the work.

### 3.5 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction forces.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.
  - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  - 2. Preinstallation Conferences: Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

### 3.6 PROGRESS CLEANING

- A. General: 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.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. 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.
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

- 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. It is the Contactor's responsibility for job site safety.
  - 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.
    - a. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly coated surfaces.
  - 3. Remove materials and debris that create tripping hazards.
- D. Installed Work: 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. Concealed Spaces: Remove dirt, debris and garbage from concealed spaces, including stud cavities before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. 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.
- I. 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.
- J. 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.

### 3.7 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements".

### 3.8 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 manufacturer's written instructions for temperature and relative humidity.

### 3.9 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching"
  - 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.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 73 00

## **SECTION 01 77 00**

### **CLOSEOUT REQUIREMENTS**

#### **PART 1 – GENERAL**

##### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 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. Warranties.
  - 3. Final cleaning.
  - 4. Project record documents.
  - 5. Operation and maintenance data (Submittals at Project Closeout).
  - 6. Spare parts and maintenance data.
- B. Related Sections include the following:
  - 1. Division 01 Section “Payment Procedures” for requirements for Applications for payment for Substantial and Final Completion.
  - 2. Division 01 Section “Execution Requirements” for progress cleaning of project site.
  - 3. Divisions 01 through 32 Sections for specific closeout and special cleaning requirements for the work in those sections.

##### **1.3 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. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, and similar final record information.
  - 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  - 7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  - 8. Complete startup testing of systems.

9. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  10. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  11. Complete final cleaning requirements, including touchup painting.
  12. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
  13. Submit initial draft copy of operation and maintenance manuals at least 15 days before requesting inspection for Substantial Completion.
- B. Inspection: 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.

#### 1.4 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
1. Drawings.
  2. Specifications.
  3. Addenda.
  4. Change Orders and other modifications to the Contract.
  5. Reviewed Shop Drawings, Product Data, and Samples.
  6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction
- D. Record information concurrent with construction progress.
- E. Record Drawings: Legibly mark each item to record actual construction including:
1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  3. Field changes of dimension and detail.
  4. Details not on original Contract drawings.
- F. Submit documents to Architect/Engineer with claim for final Application for Payment.

1.5 OPERATION AND MAINTENANCE DATA (Submittals at Project Closeout)

- A. Submit data requested in each specification section, bound in 8-1/2 x 11 inch text pages, three D side ring binders with durable plastic covers.
- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
- C. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- D. Contents: Prepare a Table of Contents for each volume, with each Product or system description identified, typed on white paper, in three parts as follows:
  - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
  - 2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
    - a. Significant design criteria.
    - b. List of equipment.
    - c. Parts list for each component.
    - d. Operating instructions.
    - e. Maintenance instructions for equipment and systems.
    - f. Maintenance instructions for [special] finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
  - 3. Part 3: Project documents and certificates, including the following:
    - a. Shop drawings and product data.
    - b. Air and water balance reports.
    - c. Certificates.
    - d. Photocopies of warranties.
- E. Submit 1 draft copy of completed volumes 15 days prior to final inspection. This copy will be reviewed and returned, with Architect/Engineer comments. Revise content of all document sets as required prior to final submission.
- F. Submit two 2 sets of revised final volumes, within 14 days after comments from Architect/Engineer.

1.6 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Provide spare parts, maintenance, and extra Products in quantities specified in individual specification sections.
- B. Deliver to Owner; obtain receipt prior to final payment and provide the Architect with a copy of receipts.

## 1.7 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 01 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.
  - 4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- 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 prepare a final Certificate for Payment after inspection or will notify Contractor of construction 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.

## 1.8 INSPECTION FEES

- A. If Engineer performs reinspections due to failure of Work to comply with the claims of status of completion made by contractor, or, should Contractor fail to complete the work, or, should Contractor fail to promptly correct warranty items or work later found to be deficient:
  - 1. Owner will compensate Engineer for such additional services.
  - 2. Owner will deduct amount of such compensation from final payment to Contractor.
- B. If the Work is not completed by date set in the Agreement, and the Engineer needs to perform additional Contract Administrative and on site observation duties.
  - 1. Owner will compensate Engineer for such additional services.
  - 2. Owner will deduct amount of such compensation from final payment to Contractor.

## 1.9 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. Organize list of spaces in sequential order.
  - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  - 3. Include the following information at the top of each page:
    - a. Project name;

- b. Date;
- c. Name of Engineer;
- d. Name of Contractor;
- e. Page number.

## 1.10 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated in the contract documents.
  - 1. Unless indicated otherwise, all warranties shall commence on the date of Substantial Completion.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  - 1. Submit final warranties as a package for the entire project, assembled and identified as described below.
  - 2. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  - 3. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  - 4. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
  - 5. Electronic Media: Submit copy of warranty binder on CD-R in PDF format Bookmark based on the table of contents, and for each warranty within each section.
  - 6. Provide additional copies of each warranty to include in operation and maintenance manuals.
- D. Warranty Response Time: The Contract shall respond and begin to take necessary action within 7 days of receipt of written notification from the Owner. Response time for life safety items, and for building perimeter security shall be within 24 hours of receipt of written notification from the Owner.

## PART 2 – PRODUCTS

### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## **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 and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 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 Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Remove snow and ice to provide safe access to site.
    - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - g. Sweep pre-cast concrete pavers broom clean.
    - h. Remove labels that are not permanent.
    - i. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    - j. Replace parts subject to unusual operating conditions.
    - k. Leave Project clean and ready for occupancy.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials 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.

END OF SECTION 01 77 00

**SECTION 31 10 00**  
**SITE CLEARING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Provide all labor, material, equipment, and services required to complete the work specified in this section, and as shown on the drawings.
- B. The work of this section includes but is not necessarily limited to:
  - 1. Removing existing vegetation
  - 2. Clearing and grubbing
  - 3. Stripping and stockpiling topsoil
  - 4. Removing above- and below-grade site improvements
  - 5. Disconnecting, capping or sealing, and abandoning site utilities in place, or removing site utilities, where directed
  - 6. Temporary erosion and sedimentation control measures
  - 7. Removal of existing building foundations, footings, and slabs

**1.3 DEFINITIONS**

- A. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in- place surface soil and is the zone where plant roots grow. Its appearance is generally 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 1 inch (25 mm) in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.
- D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIAL OWNERSHIP

- A. Cleared materials shall become Contractor's property and shall be removed from Project site, except for stripped topsoil, granite curb, and other materials that are indicated to be stockpiled and re-used, or otherwise remain the Owner's property.

1.5 SUBMITTALS

- A. Product Data: For each type of product
- B. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
  - 1. Use sufficiently detailed photographs or videotape.
  - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.
- C. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 QUALITY ASSURANCE

- A. Pre-installation Conference: Conduct conference at Project site.
- B. Schedule: Provide Architect with detailed schedule of demolition work.

1.7 PROJECT CONDITIONS

- A. 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.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where directed.
- C. Utility Locator Service: The Contractor shall notify utility locator service for area where Project is located and perform the following actions prior to site clearing.
  - 1. Pre-mark the boundaries of your planned excavation with white paint, flags or stakes, so utility crews know where to mark their lines.
  - 2. Call Dig Safe, at 1-888-DIGSAFE, at least three business days, but no more than 30 calendar days, before starting work.

3. If blasting, notify Dig Safe at least one business day in advance.
  4. Wait three business days for lines to be located and marked with color-coded paint, flags or stakes. Note the color of the marks and the type of utilities they indicate. Transfer these marks to the As-Built drawings.
  5. Contact the landowner and other non-member utilities (water, sewer, gas, etc.), for them to mark the locations of their underground facilities. Transfer these marks to the As-Built drawings.
  6. Re-notify Dig Safe and the non-member utilities if the digging, drilling or blasting does not occur within 30 calendar days, or if the marks are lost due to weather conditions, site work activity or any other reason.
  7. Hand dig within 18 inches in any direction of any underground line until the line is exposed. Mechanical methods may be used for initial site penetration, such as removal of pavement or rock.
  8. Dig Safe requirements are in addition to town, city and/or state DOT street opening permit requirements.
  9. For complete Dig Safe requirements, call the PUC or visit their website.
  10. If damage, dislocation, or disturbance of any underground utility line is observed, immediately notify the affected utility. If damage creates safety concerns, call the fire department and take immediate steps to safeguard health and property.
  11. Any time an underground line is damaged or disturbed, or if lines are improperly marked, the Contractor must file an Incident Report with the PUC. For an Incident Report form visit [www.state\\_me.us/mpuc](http://www.state_me.us/mpuc) or call the PUC at 800-452-4699.
- D. Do not commence site clearing operations until temporary erosion and sedimentation control and plant protection measures are in place.
- E. Soil Stripping, Handling, and Stockpiling: Perform when the topsoil is dry or slightly moist.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Erosion and sedimentation control materials and methods are described in Appendix "C" entitled,
1. "Erosion and Sedimentation Control Plan for Burial Vaults at the Southern Maine Veteran's Cemetery, Springvale, Maine."
  2. Section 31 25 00.
- B. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Division 31 Section "Earth Moving".
1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction
- B. Protect existing site improvements to remain from damage during construction.
  - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

### 3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion-and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction. The Contractor shall conduct his operations in conformity with all Federal and State permit requirements concerning water, air, and noise pollution, and the disposal of contaminated or hazardous materials. Erosion control measures shown on the Drawings are minimum only and are not intended to be complete. Satisfy the current requirements of the regulatory agencies. Comply with materials and procedures listed on the "Erosion and Sedimentation Control Plan Appendix "A" for temporary erosion and sedimentation control.
- B. Inspect, maintain, and repair erosion and sedimentation control measures during construction until permanent vegetation has been established.
- C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal once 85% rigorous vegetative grown has been achieved.

### 3.3 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed, or abandoned in place.
  - 1. Arrange with utility companies to shut off indicated utilities.
  - 2. Owner will arrange to shut off indicated utilities within his control, when requested by Contractor.
- B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  - 1. Notify Architect not less than two days in advance of proposed utility interruptions
  - 2. Do not proceed with utility interruptions without Architect's or Owner's written permission.
- C. Excavate for and remove underground utilities indicated to be removed.
- D. Removal of underground utilities is included in Division 33 Sections

### 3.4 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
  - 1. Recycle wood and wood debris either on-site or off-site, and do not bury or burn wood material. Grind down stumps and remove roots, obstructions, and debris to a depth of 18 inches (450 mm) below exposed subgrade.
  - 2. Chip removed tree branches and recycle the material either on-site or off-site.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
  - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

### 3.5 TOPSOIL STRIPPING

- A. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
  - 1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, stones and other objects more than 2 inches in diameter; trash, debris, weeds, roots, stumps, and other waste materials.
- B. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover with temporary seed and mulch to prevent windblown dust and erosion.
  - 1. Dispose of surplus topsoil in same manner specified for surplus soil. Surplus topsoil is that which exceeds quantity required for reuse.

### 3.6 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove buildings, walls, concrete, metal, glass, slabs, foundations, retaining walls, paving, curbs, gutters, and aggregate base as indicated
  - 1. Unless existing full-depth joints coincide with line of demolition, neatly sawcut along line of existing pavement to remain before removing adjacent existing pavement. Sawcut faces vertically. Remove existing pavement where indicated on the Plans. Properly dispose of removed pavement off-site.

### 3.7 BUILDING OR STRUCTURE FOUNDATIONS

- A. Below-Grade Construction: Demolish foundation walls, below grade utilities and other construction extending below-grade where indicated on the Plans.
  - 1. Remove below-grade construction, including foundation walls, and footings, completely.

Crush material and use for fill in compliance with Section 31 20 00 "Earth Moving" or remove from site and transport to recycling facilities.

2. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil materials according to backfill requirements in Division 31 Section "Earth Moving".
3. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

### 3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, brick, concrete, metal, and waste materials including trash and debris, and legally dispose of them off-site.
  1. Separate recyclable materials produced during site clearing from other non-recyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 31 10 00

**SECTION 31 20 00**

**EARTH MOVING, EXCAVATION AND FILL**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Provide all labor, material, equipment, and services required to complete the work specified in this section, and as shown on the drawings.
- B. The work of this section includes but is not necessarily limited to:
  - 1. Excavation, trenching, filling, and backfilling for building foundations, driveway/parking areas, slabs-on-grade, site structures, utilities, site drainage, landscaping, and compaction.
  - 2. Excavation and off-site disposal of all unsuitable or excess materials. Excavation shall include removal and satisfactory disposal of all unclassified material encountered throughout the site.
  - 3. Compaction of undisturbed original soil or existing fill as appropriate and as specified, prior to construction and placement of new fill and backfill.
  - 4. Provide all necessary sheeting, shoring, and bracing to protect the Work and assure safety of workers, adjacent property and the public.
  - 5. Maintenance of all excavations free from water.
  - 6. Coordinate field density test as required herein and as directed by the Engineer.
  - 7. Compacted fill from top of utility bedding to subgrade elevations.
  - 8. Rough grading and final grading, including placement, moisture conditioning and compaction of fills and backfill.
  - 9. The removal, hauling and stockpiling of suitable excavated materials for subsequent use in the work. Stockpiling shall include protection to maintain materials in a workable condition.
  - 10. Re-handling, hauling and placing of stockpiled materials for use in refilling, filling, backfilling, grading, and other such operations.
  - 11. Providing products in sufficient quantities to meet the project requirements.
  - 12. Obtain all required permits, licenses, and approvals of appropriate municipal and utility authorities, prior to commencing the work of this Section, and pay costs incurred therefrom.
- C. A Geotechnical Investigation has been prepared and is included as Appendix B.

### 1.3 SUBMITTALS

- A. Comply with Section 01 33 00 - Submittal Procedures.
- B. Comply with Section 01 40 00 – Quality Requirements.
- C. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan.
- D. Test Reports: Submit the following reports:
  - 1. Reports on material gradations (ASTM D422).
  - 2. Verification of each footing subgrade.
  - 3. Field density test reports (ASTM D2922).
  - 4. One optimum moisture-maximum density curve for each type of material used in the Work (ASTM D-1557 modified).
- E. Materials Source: Submit name of imported materials source.
- F. Material Certifications: Submit materials certificate signed by the material supplier and Contractor, certifying that materials comply with, or exceed, the requirements herein.
- G. Product Data: Submit data for geotextile fabric indicating fabric and construction.

### 1.4 CLOSEOUT SUBMITTALS

- A. Comply with:
  - 1. Section 01 33 00 – Submittal procedures.
  - 2. Section 01 73 00 – Execution requirements.
  - 3. Section 01 77 00 – Closeout procedures.
- B. Project Record Documents: Accurately record actual locations of all utilities by horizontal dimensions, elevations or inverts, and slope gradients.

### 1.5 COORDINATION

- A. Comply with Section 01 31 00 – Project Management and Coordination.
- B. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

### 1.6 QUALITY ASSURANCE

- A. Comply with the requirements of Section 01 40 00 – Quality Requirements.

- B. Documents affecting Work of this Section include, but are not necessarily limited to; the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda, and all Sections of Division 01 are hereby made a part of this Section.
- C. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.
- D. All Work shall comply with the requirements of the Maine Department of Environmental Protection, the York County Soil & Water Conservation District Standards, and City of Sanford, Maine Standards to minimize adverse environmental impacts. Reference is made to the Erosion and Sedimentation Control Plan included in the Plan set for this project. Strict adherence to the Specifications and Plans is required in order to prevent adverse downstream impacts.
- E. All Work shall comply with the conditions of the enclosed permits.
- F. Work shall be accomplished in accordance with regulations of local, county and state agencies and national or utility company standards as they apply.
- G. The Contractor shall protect structures, utilities, sidewalks, pavements, property monuments, monitoring wells, and other facilities from damages caused by settlement, lateral movement, undermining, washout, and other hazards created from earthwork operation.
- H. The Contractor shall bear all cost associated with correcting any Work that does not meet the requirements of this Section or any damaged items due to construction activities. These costs include any professional services required for inspection of repairs or replacements.
- I. Costs related to retesting due to unacceptable qualities of work and failures discovered by testing shall be paid for by the Contractor at no additional expense to Owner, and the costs thereof will be deducted by the Owner from the Contract Sum.
- J. Paved surfaces: Do not operate equipment on paved surfaces. Paved surfaces outside the limits of Work which become damaged shall be repaved by the Contractor.
- K. Contractor shall be responsible for notifying all affected utility companies and Dig Safe before starting work.
- L. Field Measurements:
  - 1. Verify that survey horizontal and vertical control reference points are present and correct as indicated. Protect these points from disturbance during the course of the Work, or correctly re-establish as necessary.
  - 2. During construction, provide all necessary line and grade staking to properly control the Work.

#### 1.7 SAFETY

- A. Maintain excavations with approved barricades, lights, and signs to project life and property until excavation is filled and graded to a condition acceptable to the Engineer.
- B. Provide all necessary sheeting and shoring for trench excavation in accordance with OSHA

standards.

## PART 2 - PRODUCTS

### 2.1 SOURCE QUALITY CONTROL

- A. Comply with Section 01 40 00 - Quality Requirements.
- B. When tests indicate materials do not meet specified requirements, change material and retest.
- C. Furnish materials of each type from same source throughout the Work.

### 2.2 MATERIALS

- A. Common Borrow: shall consist of earth, suitable for embankment construction. It shall be free from frozen material, perishable rubbish, peat, and other unsuitable material. The moisture content shall be sufficient to provide the required compaction and stable embankment. In no case shall the moisture content exceed 4% above optimum, which shall be determined in accordance with AASHTO T180, Method C or D.
- B. Unsuitable Materials: Materials that cannot be compacted to required density or contain frozen material, organic material, peat, muck, coal, ash, debris, pavement, construction waste, or boulders greater than 6 inches in any dimension, and any material that, in the opinion of the Engineer, is not suitable for its use.
- C. Excavated rock may not be used as fill material, except as general site fill outside of pavement and structure limits and as fill greater than 7 feet deep in burial plot areas with approval of the Engineer.
- D. Gravel Borrow: Clean, well graded granular, non-frost susceptible, sand and gravel, free of organics and other deleterious materials meeting the following gradation:

Sieve Size	Percent Finer by Weight
6 inch	100
3 inch	90 to 100
¼ inch	0 to 70
No. 40	0 to 30
No. 200	0 to 7

- E. Structural Fill: Structural granular fill shall be used below and adjacent to the building entrance/canopy supports and where indicated in Contract Documents. Compacted structural fill shall consist of sand and gravel of hard durable particles, free of organic material, loam, lumps or balls of clay, trash, snow, ice, frozen soil, stones over 4-inch diameter, or other objectionable material. The gradation of that portion of the material passing a 3-inch sieve shall meet the following limits:

Sieve Size	Percent Finer by Weight
3 inch	100
¼ inch	25 to 70
No. 40	0 to 30
No. 200	0 to 5

- F. Crushed Stone: in conformance with Maine DOT Standard Specification 703.22 “Underdrain Backfill Type C”:

Sieve Size	Percent Finer by Weight
1 inch	100
¾ inch	90 to 100
3/8 inch	0 to 75
No. 4	0 to 25
No. 200	0 to 5

- G. Leveling Sand: Aggregate for sand leveling shall be sand of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances in conformance with Maine DOT Standard Specification 703.05 “Aggregate for Sand Leveling”. The gradation shall meet the grading requirements of the following table.

Sieve Size	Percent Passing
3/8”	85 - 100
No. 200	0-5.0

- H. Sand: Clean granular material, free from lumps, balls of clay, and organic material and shall be Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter and conforming to the following gradation:

Sieve Size	Percent Passing
1 inch	100
½ inch	75 to 100
No. 4	50 to 100
No. 20	15 to 80
No. 50	0 to 15
No. 200	0-5

- I. Pea Gravel: Rounded drainage stone for placement around crypts shall be clean, sound gravel material and shall meet the following gradation:

Sieve Size	Percent Passing
½ inch	100

3/8 inch	85 to 100
No. 4	10 to 30
No. 8	0 to 10
No. 16	0 to 5
No. 200	0

- J. Drainage Stone: 2" crushed and washed stone for placement around burial crypts shall be clean, sound material meeting Maine DOT Standard Specification, Highways and Bridges; Section 703.31 Crushed Stone.
- K. Bedding Stone: 3/4" crushed and washed stone for placement around burial crypts shall be clean, sound gravel material and shall meet the following gradation:

Sieve Size	Percent Passing
3/4 inch	85 to 100
1/2 inch	15 to 55
No. 4	0 to 5

- L. Refill Material: 3/4" crushed stone, for refilling excavation below normal grade, rock excavation or refilling excavated unsuitable material, unless otherwise directed by the Architect/Engineer.
- M. Select Backfill: Use structural fill or 3/4" crushed stone unless otherwise directed by the Architect/Engineer.
- N. Low Permeability Material: Material that when placed and compacted will provide in-situ permeability rate of not more than  $1.0 \times 10^{-5}$  cm/sec.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Comply with:
1. Section 01 73 00 - Execution Requirements: Verification of existing conditions before starting work.
- B. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.
- C. Verify structural ability of unsupported walls to support loads imposed by fill.
- D. Verify survey bench mark and intended elevations for the Work are as indicated on Drawings.

### 3.2 PREPARATION

- A. Locate and mark any and all existing underground and aboveground utilities before beginning any earthwork. Notify Dig Safe at 1-888-344-7233 not less than three working days before performing Work.
- B. All earthworks shall be in accordance with the Drawings and any supplemental documents.
- C. Ensure that erosion controls are in place and properly functioning prior to any earthwork.
- D. Topsoil Excavation:
  - 1. Excavate topsoil from all areas to be further excavated, raised in grade, re-landscaped, or regraded, without mixing with foreign materials for use in finish grading.
  - 2. Do not excavate wet topsoil.
  - 3. Stockpile on Site in area approved by the Engineer and protect from erosion.
  - 4. Remove excess topsoil not intended for reuse, from site.
- E. Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of materials. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.
- F. Remove and properly dispose of any pavement, structures, fences, debris, etc. scheduled for removal. Save and store any material scheduled for re-use.
- G. Identify required lines, levels, contours, and datum locations.
- H. Notify utility company to remove and relocate utilities.
- I. Maintain and protect above and below grade utilities indicated to remain.
- J. Protect plant life, lawns, rock outcroppings, and other features remaining as portion of final landscaping.
- K. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- L. Establish temporary traffic control and detours when trenching is performed in public right-of-way. Relocate controls and reroute traffic as required during progress of Work.
- M. Compact subgrades to density requirements for subsequent backfill materials. If compaction is insufficient, break up ground surface, pulverize, moisture-condition to optimum moisture content, and compact to required depth and percentage of maximum density.
- N. All foundation subgrades shall be densified using a walk behind compactor capable of imposing a dynamic load of 5 kips.
- O. Existing surficial fill encountered beneath the proposed building footprint and paved areas shall be proof-rolled using a vibrator roller-compactor capable of imposing a dynamic load of 15 kips.

- P. Any areas that continue to yield after 3 to 5 passes of the compaction equipment should be over-excavated and replaced with Granular Borrow.
- Q. Cut out soft areas of subgrade not capable of compaction in place. Backfill with Fill as required in the Fill Schedule of this Section and compact to density equal to or greater than requirements for subsequent fill material.
- R. Proof roll to identify soft spots; fill and compact to density equal to or greater than requirements for subsequent fill material.

### 3.3 FIELD QUALITY CONTROL

- A. Comply with Section 01 40 00 - Quality Requirements.
- B. Comply with Section 01 73 00 - Execution Requirements.
- C. Testing and Field Observations:
  - 1. The Contractor shall retain and pay for the services of an independent testing and inspection firm and/or a Geotechnical Consultant to perform on-site observation and testing during the various phases of the construction operations. The scope of services will be determined by the Owner and the independent testing and inspection firm and/or the Geotechnical Consultant and will be provided to the contractor. The Owner reserves the right to modify or waive the services of the independent testing and inspection firm and/or the Geotechnical Consultant. The services of a Geotechnical Consultant/Inspection and testing firm may include, but not necessarily be limited to, the following:
    - a. Observation during excavation and dewatering of building and controlled fill areas.
    - b. Observation during backfilling and compacting operations within that area defined as building area or controlled fill area and other areas as appropriate.
    - c. Laboratory testing and analysis of fill materials as specified herein and proposed by the Contractor for incorporation into the Work.
    - d. Observation of construction and performance of water content, gradation and compaction tests at a frequency and locations that he shall select. The results of these tests will be submitted to the Owner, Engineer, and Contractor on a timely basis so that action can be taken to remedy indicated deficiencies. During the course of construction, the Geotechnical Consultant will advise the Owner in writing if at any time in his opinion the Work hereunder is of unacceptable quality. Failure of Geotechnical Consultant to give notice, shall not excuse the Contractor from latent defects discovered in his work.
  - 2. The Contractor shall make provisions for allowing observations and testing of Contractor's Work by the independent testing and inspection firm and/or the Geotechnical Consultant. The Contractor shall assist the testing agency as required and shall deliver samples of all materials required to the testing agency at the Contractor's expense.
  - 3. The presence of the independent testing and inspection firm and/or the Geotechnical Consultant does not include supervision or direction of the actual work of the Contractor,

his employees or agents. Neither the presence of the independent testing and inspection firm and /or the Geotechnical Consultant, nor any observations and testing performed by them, nor failure to give notice of defects shall excuse the Contractor from defects discovered in his work.

4. Costs related to retesting due to unacceptable qualities of work and failures discovered by testing shall be paid for by the Contractor at no additional expense to Owner.
- D. Contractor will pay for all proposed material gradation testing.
- E. Minimum Number of Tests:
1. Footing Subgrade: For each strata of soil on which footings will be placed, conduct at least one test per 50 linear feet of footing to verify required design bearing capacities.
  2. Paved Areas and Slab Subgrades: Make at least one field density test of subgrade for every 2,000 square feet of paved area or building slab, but in no case less than three tests for each. In each compacted fill layer, make one field density test for every 2,000 square feet of overlaying slab or paved area, but in no case less than 3 tests for each.
  3. Foundation Wall Backfill Outside of Structure: Make at least two field density tests at locations and elevations directed by the Engineer.
- F. Proof roll compacted fill surfaces under slabs-on-grade, pavers, and paving.
- G. Request visual inspection of subgrades and bearing surfaces by Engineer before installing subsequent work.
- H. Slope sides of excavations to comply with OSHA regulations and local codes. Shore and brace where sloping is not possible.

### 3.4 EXCAVATION

- A. Do not excavate wet subsoil or excavate and process wet material to obtain optimum moisture content.
- B. Do not excavate or leave soils open for foundations or trenches to freezing conditions.
- C. When excavating through roots, perform work by hand and cut roots with sharp axe.
- D. Underpin adjacent structures which may be damaged by excavation work.
- E. Excavate subsoil to accommodate building foundations, slabs-on-grade paving, site structures, and construction operations.
- F. Compact disturbed load bearing soil in direct contact with foundations to original bearing capacity; perform compaction in accordance with this Section.
- G. Slope banks with machine to angle of repose or less until shored.
- H. Do not interfere with 45 degree bearing splay of foundations.

- I. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- J. Remove lumped subsoil, boulders, and rock up to 1/3 cy measured by volume.
- K. Notify Engineer of unexpected subsurface conditions.
- L. Correct areas over-excavated with Crushed Stone.
- M. Stockpile subsoil intended for reuse on Site in area approved by the Architect/Engineer and protect from erosion.
- N. Remove and dispose of excess unsuitable material from site.
- O. Excavated material suitable for common borrow, as determined by the Engineer, and excavated rock and ledge shall be used on site as fill in areas designated by the Engineer.
- P. Remove excess subsoil not intended for reuse, from site.
- Q. Repair or replace items indicated to remain damaged by excavation.
- R. Prepare subgrade for lawn areas 6" below finished grade.

### 3.5 FILLING, BACKFILLING AND GRADING

- A. Fill areas to contours and elevations with appropriate fill material. Frozen materials shall not be used.
- B. Backfill excavations as promptly as work permits, but not before completion of the following:
  - 1. Acceptance of construction below finish grade, including dampening, waterproofing, and perimeter insulation.
  - 2. Removal of concrete formwork.
  - 3. Removal of trash and debris.
  - 4. Removal of shoring, bracing, and backfilling of the remaining voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in a manner to prevent settlement of the structure or utilities or leave in place if required.
  - 5. Permanent or temporary horizontal bracing is in place on horizontally supported walls.
- C. Use care in backfilling utility trenches to avoid damage or displacement of the utilities.
- D. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- E. Place fill material in continuous layers and compact in accordance with the Fill schedule in this section.
- F. Burial plot areas shall be backfilled with granular borrow that has been processed to allow for future excavation with cemetery equipment. No rocks greater than three inches shall be used for fill within 7 feet of finish surface.

- G. Employ placement method that does not disturb or damage other work.
- H. Maintain optimum moisture content of backfill materials to attain required compaction density.
- I. Do not backfill against unsupported foundation walls.
  - 1. Backfill concrete structures only after the concrete has developed adequate strength. Do not allow heavy machinery within 5 feet of structures during backfilling and compacting.
  - 2. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.
- J. Slope grade away from building minimum 2 percent slope for minimum distance of 10 ft, unless noted otherwise.
- K. Make gradual grade changes. Blend slope into level areas.
- L. Remove surplus backfill materials from site.
- M. Leave fill material stockpile areas free of excess fill materials.
- N. Repair or replace items indicated to remain damaged by excavation or filling.
- O. Subgrade Preparation for Pavements and Walks:
  - 1. Excavate, form, shape and roll subgrade to conform to cross-section of finished pavement. Roller shall be 10-ton minimum weight.
  - 2. Remove stones greater than 5" measured in any dimension from subgrade to a 12" depth. Fill depressions with suitable fill as required Fill schedule of the section.
  - 3. When areas become impervious due to concentrations of fines and over-compaction, lightly scarify and re-compact. In severe cases, remove such material and replace with suitable soil as directed.
  - 4. Subgrades shall positively grade and drain in order to keep roadway base and subbase free from water.
- P. Any settlement or erosion that occurs prior to acceptance of the Work shall be repaired, and re-graded to the required elevations and slopes.

### 3.6 TRENCHING

- A. Remove lumped subsoil, boulders, and rock up of 1/6 cubic yard, measured by volume.
- B. Do not advance open trench more than 200 feet ahead of installed pipe unless approved by the Engineer.
- C. Remove water or materials that interfere with Work.
- D. Excavate bottom of trenches maximum 2 feet wider than outside diameter of pipe, or as required to meet OSHA safety requirements.

- E. Excavate trenches to lines depths indicated on Drawings with sufficient width to enable installation and inspection of the utility.
- F. Owner reserves right to make changes in lines, grades, and depths of utilities when changes are required for Project conditions.
- G. Use laser-beam instrument with qualified operator to establish lines and grades.
- H. Provide uniform and continuous bearing and support for bedding material and utilities.
- I. Do not interfere with 45 degree bearing splay of foundations.
- J. When subsurface materials at bottom of trench are loose or soft, excavate to greater depth as directed by Engineer until suitable material is encountered. Notify Engineer, and request instructions.
- K. Cut out soft areas of subgrade not capable of compaction in place. Backfill with Structural Fill and compact to density equal to or greater than requirements for subsequent backfill material.
- L. Trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.
- M. Correct areas over-excavated with compacted backfill as specified for authorized excavation or replace with flow-able fill concrete as directed by Engineer.
- N. Remove excess subsoil not intended for reuse, from site.
- O. Stockpile excavated material in area designated on site in accordance with this Section.

### 3.7 SHEETING AND SHORING

- A. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation to comply with OSHA regulations and local codes.
- B. Sheet, shore, and brace excavations to prevent danger to persons, structures and adjacent properties and to prevent caving, erosion, and loss of surrounding subsoil.
- C. Design sheeting and shoring to be removed at completion of excavation work. Sheeting and shoring shall not be left in place.
- D. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.
- E. Repair damage to new and existing Work from settlement, water or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.

### 3.8 DEWATERING

- A. Perform all work in dry weather conditions whenever possible.

- B. Dewater soils and excavations as necessary to adequately compact, excavate, and work existing soils.
- C. Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding project site and surround areas.
- D. Do not allow water to accumulate in excavations. Provide and maintain pumps and dewatering system components necessary to convey water away from excavations.
- E. Convey water removed from excavations adequately to prevent soil erosion and downstream sedimentation. Filter pumped water prior to discharge and do not discharge directly to storm drains.
- F. Do not use trench excavations as temporary drainage ditches.

### 3.9 FROST

- A. No fill materials shall be placed when the subgrade, the fill material, or the previous lift on which fill is to be placed is frozen. In the event the subgrade or any fill which already has been placed becomes frozen, it shall be thawed, scarified and then re-compacted, or else removed, to meet the compaction requirements of the specifications before the next lift is placed. Any soft spots resulting from frost shall be removed or re-compacted to meet the requirements of compaction specified herein before new fill material is placed.

### 3.10 ROCK REMOVAL

- A. Rock excavation may be encountered as part of the project. Rock excavation shall be defined as: All rock, ledge, or boulders in undisturbed soil that cannot be removed by a mechanical scarifier and power shovel of 1.0 cubic yards capacity, and/or D-8 bulldozer with ripper, without use of line drilling or explosives. Boulders 2 cubic yards or smaller shall be considered to be unclassified material regardless of location. During excavations if stone in excess of 2 cubic yards is encountered and cannot be moved it will be considered as "rock" as herein defined.
- B. Refer to Section 31 23 16 – Rock Removal.

### 3.11 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Moisture content of fill material as it is being placed shall be within two percent of the optimum moisture content of the material as determined by ASTM D1557 modified.
- C. Top Surface of Backfilling around Building Areas: Plus or minus 1 inch from required elevations.
- D. Top Surface under Paved Areas and Pavers: Plus or minus 0.5 inches from required elevations.
- E. Top Surface of Landscaped and Lawn Areas: Plus or minus 0.10 feet from required elevations.

- F. Structural Fill under Slabs:
  - 1. Maximum Variation From Flat Surface: 1/2 inch measured with 10 foot straight edge.
  - 2. Maximum Variation From Elevation: 3/8 inch.
- G. Footing Excavations:
  - 1. Maximum Variation From Elevation: 0.10 feet.

### 3.12 STOCKPILING

- A. Stockpile materials on site at locations approved by Engineer.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Prevent intermixing of soil types or contamination.
- E. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
- F. Unsuitable materials delivered to the Site and materials that become unsuitable during the course of the project shall be stockpiled in a manner to prevent erosion and spreading of this material until it is removed and disposed of off-Site.

### 3.13 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.
- B. When borrow area is indicated, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

### 3.14 FILL SCHEDULE

- A. All fill shall be place in accordance with the drawings and any supplements.
- B. The degree of compaction is expressed as a percentage of the maximum dry density at optimum moisture content as determined by ASTM Test D1557, Method C.
- C. Footings shall rest on undisturbed native soils, or 6 inches of crushed stone overlying bedrock.
- D. Fill shall be place in layers between 6 and 12 inches depending upon size and type of compaction equipment such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment.
- E. Fill shall be placed at the approximate optimum moisture content.
- F. Below Foundations and Floor Slabs:

1. Fill Type: Structural Fill and Crushed Stone.
2. Structural Fill shall be placed in horizontal lifts and be compacted. Lift thickness should be such that desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment.
3. In confined areas, the Structural Fill should be compacted to the same standard except that the maximum particle size should be reduced to 3 inches and loose layer thickness should be reduced to 6 inches, and compaction performed by hand-guided equipment to the same percentage of compaction.
4. Compaction: 95 percent of the maximum dry density, as determined in accordance with ASTM Test Designation D1557 or 100 percent if crushed stone is used as determined by ASTM C-29.
5. Where fill is required below footing grade, the zone of 95 percent compaction shall extend laterally beyond the edge of foundations at least 1 foot for each foot of depth below foundation grade.
6. Where Crushed Stone is used, it should be compacted to 100 percent of its dry rodded unit weight per ASTM C-25.
7. If proper compaction and placement of Structural Fill or Crushed Stone is difficult due to space constraints or other limitations, use of flowable fill for foundation backfill should be considered as recommended by the geotechnical engineer.

G. Entrances and Approaching Sidewalks

1. Fill Type: Gravel Borrow
2. Gravel Borrow shall be placed in horizontal lifts and be compacted. Lift thickness should be such that desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment.
3. For slab/sidewalk entrances: Gravel Borrow shall be placed to a depth of 4.0 feet below the top of slab/sidewalk, or to the top of bedrock. This thickness of Gravel Borrow should extend horizontally from the building outward to the entire width of the entrance slabs/sidewalks.
4. Gravel Borrow below entrance slab/sidewalks, including those supported on frost walls, shall have a gradual transition up to the bottom of the sidewalk and pavement subbase at a 1V to 3H slope or flatter.
5. Compaction: 95 percent of the maximum dry density, as determined in accordance with ASTM Test Designation D1557.

H. Foundation Backfill (interior and exterior):

1. Fill Type: Structural Fill.
2. Structural Fill shall be placed in horizontal lifts and be compacted. Lift thickness should be such that desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment.
3. Structural Fill shall extend laterally a minimum of 2 feet from the wall.
4. Compaction: 95 percent of the maximum dry density, as determined in accordance with ASTM Test Designation D1557.

5. Backfill beyond this limit may consist of Gravel Borrow.

I. Driveway and Parking Area Subgrade:

1. Fill Type: Gravel Borrow.
2. Compaction: 92 percent of maximum dry density, as determined in accordance with ASTM Test Designation D1557.

J. Fill Under Lawn and Landscaped Areas:

1. Fill Type: Common Borrow, Granular Borrow for burial plot areas.
2. Compaction: 90 percent of maximum dry density as determined in accordance with D1557.

K. Trench Bedding and Backfill

1. Storm drainage pipe and sanitary sewer pipe bedding:
  - a. Pipe Bedding: 3/4" Crushed Stone compacted to 100 percent if crushed stone is used as determined by ASTM C-29.
  - b. Fill Above Bedding: Gravel Borrow compacted to 92 percent of the maximum dry density, as determined in accordance with ASTM Test Designation D1557.
2. Water distribution pipe, electric, telephone, and cable utilities:
  - a. Pipe Bedding: Sand.
  - b. Fill Above Bedding: Gravel Borrow
3. Pipe Bedding, Footing Drains, Drip Edge Drains, and Underdrains:
  - a. Pipe Bedding: 3/4" Crushed Stone compacted to 100 percent if crushed stone is used as determined by ASTM C-29.
4. Fill to Correct Over-excavation:
  - a. Fill Type: Crushed Stone flush to required elevation, compact uniformly to 95% of maximum density as determined in accordance with ASTM Test Designation D1557.
5. Stormwater Basin Embankment Material
  - a. Low Permeability material compacted to 95% of maximum density as determined in accordance with ASTM Test Designation D1557.

3.15 PROTECTION OF WORK

- A. Section 01 73 00 - Execution Requirements: Protection of installed construction.
- B. Reshape and re-compact fills subjected to vehicular traffic.
- C. Prevent displacement or loose soil from falling into excavation; maintain soil stability.

- D. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- E. Protect structures, utilities and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.

END OF SECTION 31 20 00

**SECTION 31 22 00**

**GRADING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Provide all labor, material, equipment and services required to complete the work specified in this section, and as shown on the drawings.
- B. The work of this section includes but is not necessarily limited to:
  - 1. All rough grading and finish grading as required and as indicated on the Drawings, including but not limited to, columbarium foundations, walkways, stairs and site drainage.

**1.3 SUBMITTALS**

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit product data for the following items:
  - 1. Material Test Reports: Submit reports on material gradations (sieve analysis) and maximum laboratory moisture density, (proctor) for all soil and gravel materials to be utilized as part of Project. Obtain approval from Architect/Engineer prior to delivery to the site.
  - 2. On-site testing results.

**1.4 QUALITY ASSURANCE**

- A. Comply with the requirements of Section 01 40 00 – Quality Requirements.
- B. Documents affecting Work of this Section include, but are not necessarily limited to; the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda, and all Sections of Division 1 are hereby made a part of this Section.
- C. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.
- D. Construct rough-graded surfaces to plus or minus 1.0 inch of elevations indicated, creating smooth, even surfaces.

- E. Construct fine-graded surfaces to plus or minus 3/8 inch of elevations indicated, creating smooth, even surfaces.
- F. Standards: 29 CFR 1926/1910 - OSHA Safety and Health Standards.
- G. Testing and Inspection: See Sections 01 40 00 and 31 20 00 for general requirements. The Owner shall be responsible for all in-place compaction testing, unless otherwise noted. The Contractor shall be responsible for quality control coordinating with Architect/Engineer to allow for testing to be performed at the frequencies specified. A minimum of 48 hours notice for in-place testing shall be given to allow proper scheduling by Architect/Engineer and/or Independent Testing Laboratory.
- H. Laboratory and Field Testing: Procedures for testing earthwork shall be performed in accordance with the following standards:
  - 1. Sieve Analysis.....ASTM D422
  - 2. Field Density.....ASTM D2923
  - 3. Field Moisture Content .....ASTM D3017
  - 4. Moisture/Density (Standard Proctor) Tests .....ASTM D6698
- I. The Contractor shall notify the Owner's Representative at the time the property is cut to subgrade to schedule an inspection by the Geotechnical Engineer.

#### 1.5 SITE CONDITIONS

- A. 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.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where directed.
- C. Utility Locator Service: The Contractor shall notify utility locator service for area where Project is located and perform the following actions prior to site clearing.
  - 1. Pre-mark the boundaries of your planned excavation with white paint, flags or stakes, so utility crews know where to mark their lines.
  - 2. Call Dig Safe, at 1-888-DIGSAFE, at least three business days, but no more than 30 calendar days, before starting work.
  - 3. If blasting, notify Dig Safe at least one business day in advance.
  - 4. Wait three business days for lines to be located and marked with color-coded paint, flags or stakes. Note the color of the marks and the type of utilities they indicate. Transfer these marks to the As-Built drawings.
  - 5. Contact the landowner and other non-member utilities (water, sewer, gas, etc.), for them

to mark the locations of their underground facilities. Transfer these marks to the As-Built drawings.

6. Re-notify Dig Safe and the non-member utilities if the digging, drilling or blasting does not occur within 30 calendar days, or if the marks are lost due to weather conditions, site work activity or any other reason.
  7. Hand dig within 18 inches in any direction of any underground line until the line is exposed. Mechanical methods may be used for initial site penetration, such as removal of pavement or rock.
  8. Dig Safe requirements are in addition to town, city and/or state DOT street opening permit requirements.
  9. For complete Dig Safe requirements, call the PUC or visit their website.
  10. If damage, dislocation, or disturbance of any underground utility line is observed, immediately notify the affected utility. If damage creates safety concerns, call the fire department and take immediate steps to safeguard health and property.
  11. Any time an underground line is damaged or disturbed, or if lines are improperly marked, the Contractor must file an Incident Report with the PUC. For an Incident Report form visit [www.state\\_me.us/mpuc](http://www.state_me.us/mpuc) or call the PUC at 800-452-4699.
- D. Soil Stripping, Handling, and Stockpiling: Perform when the topsoil is dry or slightly moist.
- E. A topographic and existing conditions survey of the site is included within the Plan Set; refer to the following Plans:

“Southern Maine Veterans’ Cemetery, Burial Crypts; Section H” dated April 24, 2015, prepared by Walsh Engineering Associates.

## PART 2 - PRODUCTS

### 2.1 MATERIALS:

- A. Erosion and sedimentation control materials and methods are shown on the plans and described in these specifications. Contractor shall:
1. Comply with Section 31 25 00 – Erosion Control
  2. Comply with Section 01 40 00 - Quality Requirements
- B. The Contractor shall pay for all gradation and proctor testing to prove compliance with specifications. Testing responsibility shall be as outlined in Section 01 40 00. This shall be performed each time soil is obtained from a new source, or the material characteristics change or as determined by the Architect/Engineer.
1. Suitable Materials: Materials complying with ASTM D2487 soil classification groups GW, SM, SW, and SP or AASHTO M145 soil classification groups A-1, A-2-4, A-2-5, and A-3.
  2. Unsuitable Materials: Material containing excessive amounts of water, blue or plastic clay, vegetation, organic matter, debris, pavement, stones or boulders greater than 12

inches in any dimension, frozen material, and material which, in the opinion of the Architect/Engineer, will not provide a suitable foundation or subgrade.

3. On-Site Material: Any suitable material from on-site excavation.
4. Material for embankments and general fills may contain pieces of excavated ledge having a greatest dimension of up to 18 inches, if approved by the Architect/Engineer.
5. Sieve Analysis: Performed in accordance with ASTM D422-63.

### PART 3 - EXECUTION

#### 3.1 PREPARATION:

- A. Identify all lines, grades and elevations necessary to construct columbarium foundation subgrade, walkway subgrade, rough grading, etc. as shown on the plans.
- B. Protect all survey control points.
- C. Over-excavate and properly prepare areas of subgrade not capable of supporting the proposed improvements. Areas of over excavation shall be filled and compacted with granular borrow material or suitable common borrow.
- D. Dewater soils as necessary to adequately compact, excavate and work existing soils.
- E. Paved surfaces: Do not operate equipment on paved surfaces. Paved surfaces outside the specified limits of Work that become damaged shall be repaved by the Contractor at no additional cost to Owner.
- F. Maintain excavations with approved barricades, lights, and signs to protect life and property until excavation is filled and graded to a condition acceptable to the Architect/Engineer.
- G. Protect structures, utilities, sidewalks, pavements, property monuments, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations. The Contractor shall be responsible for actual cost of repair or replacement of any items damaged as a result of construction activities. This cost shall include any professional services required for inspection of repairs or replacement.

#### 3.2 ROUGH GRADING:

- A. Rough grading of all areas within the project, including excavated and filled sections and adjacent transition areas, shall be reasonably smooth, compacted and free from irregular surface changes; the degree of finish shall be that ordinarily obtainable from skilled blade bulldozer or scraper operations except as otherwise specified. All ditches, swales and gutters shall be finished to drain readily. Provide smooth, roundings or sharp edges at top and bottom of banks and at other breaks in grade as shown on the plans.
- B. Protection: Protect newly graded areas from the action of the elements. Any settlement or erosion that occurs prior to acceptance of the Work shall be repaired, and grades re-established to the required elevations and slopes. Fill to required subgrade levels any areas where settlement

occurs.

3.3 SUBGRADE PREPARATION FOR PAVEMENTS AND WALKS:

- A. Excavate, form, shape and roll subgrade to conform to cross-section of finished pavement. Roller: ten-ton minimum weight in all open areas; suitable equipment in confined spaces.
- B. Remove stones greater than 5" from subgrade to 12" depth. Fill depressions with suitable granular borrow material. When surface areas become impervious due to concentrations of fines, lightly scarify and re-compact. In severe cases, remove such material and replace with suitable soil as directed.
- C. Refer to Section 32 11 23 for compaction requirements.

3.4 FINE GRADING:

- A. Fine grading of gravel bases in areas to receive pavement or concrete slab-on-grade shall be accomplished by the use of a suitable motor-grader, or by hand-raking in areas too small to allow machine grading. Finish grading shall be carried out after the base material has been thoroughly compacted as specified. Use screeds, grade stakes, string-lines, etc. as necessary to maintain specified finish sub-grades and tolerances.
- B. Finish-tolerance for all areas to receive pavements or slab-on-grade shall not exceed 1/4 of an inch above or below the required finished subgrade of the gravel base material.
- C. The Contractor shall use care in all finish grading operations for loam areas to assure conformance with the grades shown on the drawings. Correct or revise finish grades as directed by the Owner's Representative to make the finish grades conform to the plans and details.
- D. Loamed areas shall be fine-graded using hand raking and/or tractor-mounted rakes, in conjunction with removal of stones and debris, etc. Tolerance on slopes, field areas, etc. shall be within 3/4 of an inch of specified finished grades.
- E. Protection and Restoration: Protect finish-graded areas from the action of the elements. Any settlement or erosion that occurs prior to acceptance of the Work shall be repaired, and grades re-established to the required elevations and slopes. Fill to required finish-grade levels any areas where settlement occurs.

END OF SECTION 31 22 00

**SECTION 31 25 00**

**EROSION CONTROL**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Provide all labor, material, equipment, and services required to complete the work specified in this section, and as shown on the drawings.
- B. The work of this section includes but is not necessarily limited to:
  - 1. Provide and install erosion and sedimentation controls as shown on the Drawings, as specified herein, and as required to minimize erosion at the Site.
  - 2. Provide work to control erosion and sedimentation as required by the Maine Department of Environmental Protection standards, the Kennebec County Soil & Water Conservation District Standards, the U.S. Environmental Protection Agency, and the City of Augusta, Maine standards.
  - 3. Temporary seeding and mulching as required for disturbed areas including stockpiles.

**1.3 SUBMITTALS**

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit product data for the following items:
  - 1. Silt fence.
  - 2. Catch basin inlet protection

**1.4 QUALITY ASSURANCE**

- A. Comply with the requirements of Section 01 40 00 – Quality Requirements.
- B. Documents affecting Work of this Section include, but are not necessarily limited to; the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda, and all Sections of Division 1 are hereby made a part of this Section.
- C. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.

- D. All Work shall comply with the requirements of the applicable Maine Department of Environmental Protection standards, the Androscoggin and Sagadahoc County Soil & Water Conservation District Standards, the Town of West Bath, Maine Standards, to minimize adverse environmental impacts. Strict adherence to the Specifications and Plans is required in order to prevent adverse downstream impacts.
- E. All Work shall be in conformance with the requirements of the Androscoggin and Sagadahoc County Soil and Water Conservation District and the Maine Department of Environmental Protection Erosion and Sediment Control Best Management Practices (BMPs).
- F. All Work shall comply with the conditions of the enclosed permits.
- G. Work shall be accomplished in accordance with regulations of local, county and state agencies and national or utility company standards as they apply.
- H. The Contractor shall protect structures, utilities, sidewalks, pavements, property monuments, monitoring wells, and other facilities from damages caused by settlement, lateral movement, undermining, washout, and other hazards created from earthwork operation.
- I. The Contractor shall bear all cost associated with correcting any Work that does not meet the requirements of this Section or any damaged items due to construction activities. These costs include any professional services required for inspection of repairs or replacements.
- J. Paved surfaces: Do not operate equipment on paved surfaces. Paved surfaces outside the limits of Work which become damaged shall be repaved by the Contractor.
- K. Contractor shall be responsible for notifying all affected utility companies and Dig Safe before starting work.
- L. The Contractor shall pay all fines issued to the Owner as a result of poor erosion control practices by the Contractor.
- M. Requirements of Regulatory Agencies: The Contractor shall be familiar and comply with the requirements of all regulatory permits and applications, including the following:
  - 1. Oxford County Soil and Water Conservation District
  - 2. Maine Department of Environmental Protection
    - a. Current edition of Erosion and Sediment Control Best Management Practices (BMPs)

#### 1.5 PRE-INSTALLATION MEETINGS

- A. Section 01 31 00 – Project Management and Coordination: Pre-installation conferences.
- B. Convene minimum one week prior to commencing work of this section.

## **PART 2 - PRODUCTS**

### **2.1 EROSION AND SEDIMENTATION CONTROLS**

- A. Silt Fence: Material shall comply with MDOT 656.02 and shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 to 120 degrees F. Post spacing shall not exceed 8 feet.
- B. Catch basin inlet protection: Pre-fabricated non-woven polypropylene geotextile unit designed to insert into catch basin and be held in place by catch basin grate. The material shall have the following minimum specifications:
  - 1. Tensile strength: 200 lbs.
  - 2. Puncture strength: 500 lbs.
  - 3. Ultraviolet stability @ 500 hours: 70%
  - 4. Flow through: 80 gpm/ft<sup>2</sup>
- C. Mulch: Hay or straw mulches that are dry and free from undesirable seeds and coarse materials. Application rate must be 2 bales (70-90 lbs.) per 1,000 square feet or 1.5 to 2 tons (90-100 bales) per acre to cover 75 to 90% of the ground surface.
- D. Mulch Binder: May be emulsified asphalt, or approved equivalent.
- E. Temporary Seeding: Conservation Mix of 100% perennial rye grass.
- F. Erosion Control Blanket: Bionet S75BN as manufactured by North American Green, or approved equal.
- G. Turf Reinforced Matting: Enkamat 7020 as manufactured by Colbond, or approved equal.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Section 01 73 00 - Execution: Verification of existing conditions before starting work.

### **3.2 SITE STABILIZATION**

- A. Install all erosion and sedimentation controls in conformance with Erosion & Sedimentation Control Plan.
- B. Incorporate erosion control devices indicated on the Drawings into the Project at the earliest practicable time prior to grubbing, stripping, or other construction operations.
- C. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of

those controls.

- D. Stockpile and waste pile heights shall not exceed 35 feet. Slope stockpile sides at 2:1 or flatter.
- E. Stabilize diversion channels, sediment traps, and stockpiles immediately.

### 3.3 FIELD QUALITY CONTROL

- A. Comply with Section 01 40 00 - Quality Requirements.
- B. Comply with Section 01 73 00 - Execution Requirements.
- C. Inspect erosion control devices on a weekly basis and after each rain event. Make necessary repairs to ensure erosion and sediment controls are in good working order.

### 3.4 MAINTENANCE AND CLEANING

- A. Comply with Section 01 73 00 - Execution Requirements: Requirements for cleaning.
- B. Comply with Erosion and Sedimentary Control Plan.
- C. When sediment accumulation in sedimentation structures has reached a point one-third depth of sediment structure or device, remove and dispose of sediment.
- D. Do not damage structure or device during cleaning operations.
- E. Do not permit sediment to erode into construction or site areas or natural waterways.
- F. Clean channels when depth of sediment reaches approximately one half channel depth.

### 3.5 PROTECTION

- A. Section 01 73 00 - Execution Requirements: Requirements for protecting finished Work.

END OF SECTION 31 25 00

## **SECTION 32 11 23**

### **AGGREGATE BASE COURSES**

#### **PART 1 - GENERAL**

##### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### **1.2 SUMMARY**

- A. Provide all labor, material, equipment, and services required to complete the work specified in this section, and as shown on the drawings.
- B. The work of this section includes but is not necessarily limited to:
  - 1. Preparation of subgrade.
  - 2. Construction of base and subbase course materials under, pavements, curbs, walks including pavers, and exterior slabs.
  - 3. Geotextile installation as necessary.
  - 4. Material testing and compaction retesting as required.

##### **1.3 SUBMITTALS**

- A. Comply with Section 01 33 00 - Submittal Procedures.
- B. Comply with Section 01 40 00 – Quality Requirements.
- C. Test Reports: Submit the following reports:
  - 1. Reports on material gradations (ASTM D422).
  - 2. Field density test reports (ASTM D2922) for retesting.
  - 3. One optimum moisture-maximum density curve for each type of material used in the Work (ASTM D-1557 modified).
- D. Materials Source: Submit name of imported materials source.
- E. Material Certifications: Submit materials certificate signed by the material supplier and Contractor, certifying that materials comply with, or exceed, the requirements herein.
- F. Product Data: Submit data for geotextile fabric indicating fabric and construction.
- G. A mechanical analysis test and moisture-density curve test shall be submitted and approved by the Engineer for all materials used in this section prior to placement of the material.

- H. Product Data: Submit manufacturer's data for geotextile fabric.

#### 1.4 QUALITY ASSURANCE

- A. Comply with the requirements of Section 01 40 00 – Quality Requirements.
- B. Furnish each aggregate material from single source throughout the Work.
- C. All materials used for the Work in this Section must be reviewed and approved by the Engineer prior to delivery to the Site.
- D. Documents affecting Work of this Section include, but are not necessarily limited to; the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda, and all Sections of Division 1 are hereby made a part of this Section.
- E. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.
- F. All Work shall comply with the requirements of the Maine Department of Environmental Protection, the York County Soil & Water Conservation District Standards, and the City of Sanford, Maine, to minimize adverse environmental impacts. Strict adherence to the Specifications and Plans is required in order to prevent adverse downstream impacts.
- G. All Work shall comply with the conditions of any and all site permits including the town Site Plan Approval.
- H. Work shall be accomplished in accordance with regulations of local, county and state agencies, and national or utility company standards as they apply.
- I. The Contractor shall protect structures, utilities, sidewalks, pavements, property monuments, monitoring wells, and other facilities from damages caused by settlement, lateral movement, undermining, washout, and other hazards created from earthwork operation.
- J. The Contractor shall bear all cost associated with correcting any Work that does not meet the requirements of this Section or any damaged items due to construction activities. These costs include any professional services required for inspection of repairs or replacements.
- K. Costs related to retesting due to unacceptable qualities of work and failures discovered by testing shall be paid for by the Contractor at no additional expense to Owner, and the costs thereof will be deducted by the Owner from the Contract Sum.
- L. Paved surfaces: Do not operate equipment on paved surfaces. Paved surfaces outside the limits of Work which become damaged shall be repaved by the Contractor.
- M. Contractor shall be responsible for notifying all affected utility companies and Dig Safe before starting work.
- N. Field Measurements:
  - 1. Verify that survey horizontal and vertical control reference points are present and correct as indicated. Protect these points from disturbance during the course of the Work, or

correctly re-establish as necessary.

2. During construction, provide all necessary line and grade staking to properly control the Work.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Crushed Ledge or Crushed Gravel for Pavement Base: Material shall be crushed ledge or crushed gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances meeting Maine DOT Standard Specification, Highways and Bridges; Section 703.06a, Type A, conforming to the following gradation:

Sieve Size	Percent Finer by Weight
3 Inch	100
½ Inch	45 to 70
¼ Inch	30 to 55
No. 40	0 to 20
No. 200	0 to 6.0

- B. Sand or Gravel for Pavement Subbase: Material shall be sand or gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances meeting Maine DOT Standard Specification, Highways and Bridges; Section 703.06c, Type D conforming to the following gradation:

Sieve Size	Percent Finer by Weight
3 Inches	100
½ Inch	35 to 80
¼ Inch	25 to 65
No. 40	0 to 30
No. 200	0 to 7.0

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Section 01 73 00 - Execution: Verification of existing conditions before starting work.
- B. Verify substrate has been inspected, gradients and elevations are correct, and are dry.

### 3.2 PREPARATION

- A. Verify subgrade has been inspected, gradients and elevations are correct, and is dry.
- B. Prior to placement of subbase, the Engineer shall review subgrade conditions.
- C. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.
- D. Do not place fill on soft, muddy, or frozen surfaces.
- E. Verify that subgrade has been prepared according to Section 31 20 00.
- F. Refer to Section 31 20 00 for testing requirements.

### 3.3 FIELD QUALITY CONTROL

- A. Comply with Section 01 40 00 - Quality Requirements.
- B. Comply with Section 01 73 00 - Execution Requirements.
- C. Testing and Field Observations:
  - 1. The Owner may retain and pay for the services of an independent testing and inspection firm and/or a Geotechnical Consultant to perform on-site observation and testing during the various phases of the construction operations. The scope of services will be determined by the Owner and the independent testing and inspection firm and/or the Geotechnical Consultant and will be provided to the contractor. The Owner reserves the right to modify or waive the services of the independent testing and inspection firm and/or the Geotechnical Consultant. The services of a Geotechnical Consultant/Inspection and testing firm may include, but not necessarily be limited to, the following:
    - a. Observation during backfilling and compacting operations.
    - b. Laboratory testing and analysis of fill materials as specified herein and proposed by the Contractor for incorporation into the Work.
    - c. Observation of construction and performance of water content, gradation and compaction tests at a frequency and locations that he shall select. The results of these tests will be submitted to the Owner, Engineer, and Contractor on a timely basis so that action can be taken to remedy indicated deficiencies. During the course of construction, the Geotechnical Consultant will advise the Owner in writing if at any time in his opinion the Work hereunder is of unacceptable quality. Failure of Geotechnical Consultant to give notice, shall not excuse the Contractor from latent defects discovered in his work.
  - 2. The Contractor shall make provisions for allowing observations and testing of Contractor's Work by the independent testing and inspection firm and/or the Geotechnical Consultant. The Contractor shall assist the testing agency as required and shall deliver samples of all materials required to the testing agency at the Contractor's expense.
  - 3. The presence of the independent testing and inspection firm and/or the Geotechnical

Consultant does not include supervision or direction of the actual work of the Contractor, his employees or agents. Neither the presence of the independent testing and inspection firm and /or the Geotechnical Consultant, nor any observations and testing performed by them, nor failure to give notice of defects shall excuse the Contractor from defects discovered in his work.

4. Costs related to retesting due to unacceptable qualities of work and failures discovered by testing shall be paid for by the Contractor at no additional expense to Owner, and the costs thereof will be deducted by the Owner from the Contract Sum.
- D. Contractor will pay for all proposed material gradation testing. Owner will pay for initial field compaction tests.
  - E. Minimum Number of Tests:
    1. Paved areas and Precast paver areas: In each compacted fill layer, make one field density test for every 2,000 square feet of overlaying slab or paved area, but in no case less than 3 tests for each.

### 3.4 AGGREGATE PLACEMENT

- A. Place aggregate in maximum 8 inch layers and compact each course to 95 percent of the maximum dry density as determined by ASTM D-1557 with self-propelled vibratory compaction equipment.
- B. Course thicknesses shown on the Drawings are compacted thicknesses.
- C. Construction methods shall conform to MDOT Standard Specifications, Section 304.03 and 304.04.
- D. Coordinate aggregate placement with curb installation.
- E. Level and contour surfaces to elevations and gradients indicated.
- F. Maintain optimum moisture content of fill materials to attain required compaction density.
- G. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

### 3.5 TOLERANCES

- A. Maximum Variation From Flat Surface: 1/2 inch measured with 10 foot straight edge.
- B. Maximum Variation From Thickness: 1/4 inch.
- C. Maximum Variation From Elevation: 1/2 inch.

END OF SECTION 32 11 23

**SECTION 32 12 16**

**ASPHALT PAVEMENT**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Description of Work: Provide labor, materials, equipment, and services necessary for proper and complete installation of all paving and related items as indicated on the drawings and as herein specified including the following items:
  - 1. Bituminous concrete paving, base and top course.
  - 2. Testing.
  - 3. Pavement repair.
  - 4. Accessible curb cuts/ramps.

**1.3 REFERENCES**

- A. Comply with applicable requirements of the following standards.
  - 1. State of Maine, Department of Transportation Standard Specifications latest edition. Substitute all references to the "Department" with "Owner" and all references to "Resident" with "Engineer".
  - 2. American Society for Testing Materials (ASTM):
    - a. C 131: Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

**1.4 SUBMITTALS**

- A. Comply with the requirements of Section 01 33 00 - Submittal Procedures.
- B. Perform Work in accordance with the following, unless otherwise noted herein:
  - 1. American Society for Testing and Materials (ASTM), Standard Specifications and Methods of Testing.
  - 2. State of Maine, Department of Transportation, Standard Specifications, Highways and Bridges, Latest Edition.
- C. Product Data: Before any paving is constructed, submit actual design mix to the Engineer for

review and approval.

- D. Manufacturer's Certificate: Submit materials certificate signed by the material producer and Contractor, to the independent testing laboratory certifying that materials comply with, or exceed, the requirements herein.
- E. Test Reports: Submit test reports as required according to the following standards:
  - 1. Mechanical analysis ASTM D421
  - 2. Asphalt content ASTM D2172
  - 3. In-place density ASTM D2041 and ASTM D2726

#### 1.5 QUALITY ASSURANCE

- A. Comply with the requirements of Section 01 40 00 – Quality Requirements.
- B. Perform Work in accordance with the following, unless otherwise noted herein:
  - 1. American Society for Testing and Materials (ASTM), Standard Specifications and Methods of Testing.
  - 2. State of Maine, Department of Transportation, Standard Specifications, Highways and Bridges, Latest Edition.
- C. Obtain materials from same source throughout.
- D. Documents affecting Work of this Section include, but are not necessarily limited to; the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda, and all Sections of Division 1 are hereby made a part of this Section.
- E. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.
- F. The Contractor shall coordinate paving with all other work, especially underground utility construction, to prevent covering up unfinished or uninspected work and loss of time or labor by improper scheduling. Any repaving required shall be done at no cost to Owner.
- G. All Work shall comply with the requirements of the Maine Department of Environmental Protection standards, the York County Soil & Conservation District Standards, and City of Springvale, Maine requirements, to minimize adverse environmental impacts. Strict adherence to the Specifications and Plans is required in order to prevent adverse downstream impacts
- H. Work shall be accomplished in accordance with regulations of local, county and state agencies and national or utility company standards as they apply.
- I. Maintain one copy of the Construction Documents on Site including the Drawings and Specifications.
- J. The Contractor shall bear all cost associated with correcting any work that does not meet the requirements of this Section or any damages to property outside the limits of Work.

1.6 QUALIFICATIONS

- A. Installer: Company specializing in performing work of this section.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.
- B. All asphalt materials and mixes shall be applied at temperatures within their optimum range as defined by MDOT Standard Specifications.
- C. Weather Limitations for Bituminous Placement: Apply asphalt prime and tack coats when ambient temperature is above 50 degrees F (10 degrees C), and when temperature has not been below 40 degrees F (1 degree C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.
- D. Construct asphalt concrete surface course or leveling course when atmospheric temperature is above 50 degrees F (4 degrees C) and when base is dry. Base course may be placed when air temperature is above 40 degrees F (1 degrees C) and rising. Do not place pavement on frozen gravel base.

1.8 TRAFFIC CONTROL

- A. Maintain access for vehicular and pedestrian traffic as required for normal activities and other construction activities.
- B. Utilize flagmen, barricades, warning signs and warning lights as may be required. Two uniformed flaggers required when working in Main Street.
- C. The construction of all pavements within public rights-of-way shall be in accordance with the rules, regulations and requirements of the Public Agency having control and ownership of such rights-of-way.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Asphalt Cement for Base Course, Top Course, and Sidewalks: Bituminous material conforming to Maine DOT Specifications.
- B. Asphalt Cement for Curbs: Bituminous material conforming to Maine DOT Specifications, Section 712.36.
- C. Aggregate for Base Course Mix: In accordance with MDOT Specifications, 19.0mm Superpave HMA.
- D. Aggregate for Top Course Mix: In conformance with MDOT Specifications, 9.5mm Superpave HMA.

- E. Aggregate for Sidewalk Top Course: In conformance with MDOT specifications, 9.5mm Superpave HMA.
- F. Mineral Filler: Shall conform to the requirements of AASHTO M17.
- G. Tack Coat: Shall conform to MDOT Specifications.

## 2.2 ASPHALT PAVING MIX

- A. Use dry material to avoid foaming. Mix uniformly.
- B. Nominal Asphalt content shall be 6% for base course, top course, curbing, and sidewalk courses.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Section 01 73 00 – Execution Requirements: Verification of existing conditions before starting work.
- B. Verify compacted subgrade, Subbase, and base is dry and ready to support paving and imposed loads.
- C. Verify gradients and elevations of base are correct.
- D. Verify gutter drainage grilles and frames, manhole frames and water valve boxes are installed in correct position and elevation.

### 3.2 SUBBASE

- A. Aggregate Base and Subbase: Install as specified in Section 32 11 23 – Aggregate Base Courses.

### 3.3 PLACING ASPHALT PAVEMENT

- A. Install Work in accordance with MDOT Specifications, Section 401.16, 401.17, 401.18, and 401.20.
- B. Construct pavement to lines, grades, sections, compacted thicknesses as shown on the Drawings.
- C. Edge of pavement shall be clean and true. Raveled edges are not acceptable. Hand tamp edged and bevel if forms or screed strips are not used.
- D. Spread and strike-off asphalt concrete mix with a self-propelled finishing machine. At inaccessible or irregular areas, pavement may be placed by hand methods. If hand methods are used, the hot mixture shall be spread uniformly to the required depth with hot shovels and rakes. After spreading, the hot mixture shall be carefully smoothed to remove all segregated coarse aggregate and rake marks. Rakes and lutes used for hand spreading shall be of the type designed

for this use. Material loads shall not be dumped faster than they can be properly spread. Workers shall not stand on the loose mixture while spreading.

- E. Paving Machine Placement: In the larger parking fields, the binder course shall be placed in a transverse direction to the top course. The top course shall be placed in the direction of surface-water flow. Place in typical strips not less than 10 feet wide.
- F. Spread mixture at Minimum temperature of 225 degrees F (107 degrees C).
- G. Joints: Make joints between old and new pavements, and between successive days' work, to ensure continuous bond between adjoining works. Construction joints shall have same texture, density, and smoothness as other sections of paving. Clean contact surfaces and apply tack coat.
- H. Place top course within 24 hours of placing and compacting the base course. When binder course is placed more than 24 hours before placing wearing course, clean surface and apply tack coat before placing wearing course.
- I. If a tack coat is required, place top course within 24 hours of applying tack coat.

#### 3.4 ROLLING

- A. After the pavement has been spread as described in 3.3 of this Section, it shall be thoroughly compacted by rolling with a powered steel wheel tandem roller weighing not less than 2 or more than 10 tons. Begin rolling as soon as mixture will bear roller weight without excessive displacement.
- B. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
- C. Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.
- D. Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.
- E. Any displacement or irregularities occurring as the result of the reversing of the direction of a roller, or from other causes, shall be corrected once by the use of rakes or lutes and addition of fresh mixture when required. Care shall be exercised in rolling not to displace the line and grade of the edges of the bituminous mixture.
- F. Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.
- G. Compaction Tests: After construction, the Project Representative will designate locations for in-place nuclear density tests.
- H. Remove and replace paving areas mixed with foreign materials and defective areas and fill with fresh, hot top or binder course material. Compact by rolling to maximum surface density and smoothness.

- I. Protect the asphaltic concrete paved areas from traffic until the sealer is set and cured and does not pick up under foot or wheeled traffic.

### 3.5 TOLERANCES

- A. Smoothness:
  - 1. Top Course: maximum variation of 1/4inch measured with 10 foot straight edge.
  - 2. Base Course: maximum variation of 3/8inch measured with 10 foot straight edge.
- B. Scheduled Compacted Thickness: Within 1/8 inch.
- C. Variation from Indicated Elevation: Within 1/2 inch.

### 3.6 FIELD QUALITY CONTROL

- A. Comply with Section 01 40 00 - Quality Requirements.
- B. Comply with Section 01 73 00 - Execution Requirements.
- C. See item 1.3 - Submittals of this Section for required tests and reports.
- D. Test in-place bituminous concrete courses for compliance with requirements of this Section.
- E. After Construction, the Engineer will designate locations for in-place nuclear density tests to be performed by an independent testing agency.
- F. Contractor will pay for all proposed material gradation testing. Owner will pay for initial field compaction tests.
- G. In-place compacted thickness shall not be less than thickness specified on the drawings within a tolerance of 1/8 inch as determined by ASTM D-3549. Areas of deficient paving thickness shall be cleaned and receive a tack coat a minimum 1 inch compacted thickness overlay; or shall be removed and replaced to the proper thickness, at the discretion of the Engineer, until specified thickness of the course is met or exceeded, at no additional cost to the Owner.
- H. Field density test for in-place materials shall be performed by nuclear density tests and shall have a compacted density of between 95% and 97% of the theoretical maximum density as determined by ASTM D-2041.
- I. Areas of insufficient compaction shall be delineated, removed, and replaced in compliance with the specifications.
- J. Check all finished surfaces of each asphalt concrete course for smoothness using 10-foot straightedge applied parallel with, and at right angles to centerline of paved area. The results of these tests shall be made available to the Owner upon request. Surfaces will not be acceptable if they exceed the tolerances listed in 3.6 - Tolerances of this Section. Remove and replace unacceptable paving as directed by Engineer.
- K. Check surface areas at intervals necessary to eliminate ponding areas. Remove and replace

unacceptable paving as directed by Engineer.

- L. If, at any time before the final acceptance of the Work, any damaged, soft, or imperfect places, or spots shall develop in the surface, all such places shall be removed and replaced with new materials and then compacted until the edges at which the new Work connects with the old become invisible.

### 3.7 PROTECTION OF FINISHED WORK

- A. Section 01 73 00 - Execution Requirements: Protecting finished work.
- B. Protect all pavement areas including curbs from damage during construction operations.

### 3.8 MEETING EXISTING PAVEMENTS

- A. Full-Depth Pavement: Sawcut by approved method to the full depth of the pavement prior to placement of any new pavement. The sawcut surface shall be a neat true line with straight vertical edges free from irregularities. The sawcut surface shall be tack coated immediately prior to the installation of the new abutting bituminous concrete material to provide a bond between the old and new pavement. The new compacted pavement surface shall be finished flush with the abutting pavement.
- B. Bituminous Concrete Overlays: The existing bituminous pavement shall be sawcut to a neat true line with straight vertical edges free of irregularities for a minimum depth of one and one half inches. Prior to completing overlays, existing pavements shall be tapered by grinding. The taper, along the entire length of the joint, shall be one and one-half inches deep at the sawcut face and shall taper to zero inches deep at a distance of two feet from the sawcut face in driveways and at a distance of six feet in roadways and parking areas. The taper shall be cleaned and shall receive an asphalt emulsion tack coat immediately prior to placement of the overlay. The new compacted surface at the joint shall be flush with the abutting existing pavement.
- C. Immediately prior to the placement of the bituminous concrete overlay, the sawcut edges of the existing pavement shall be tack coated to bond the new pavement to the old pavement. The new pavement surface shall be finished flush with the abutting pavement. The surface seam of the pavement joint shall be sealed with tack coat and back sanded.

END OF SECTION 32 12 16

## **SECTION 32 16 13**

### **GRANITE CURB**

#### **PART 1 - GENERAL**

##### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### **1.2 SUMMARY**

- A. Description of Work: Provide labor, materials, equipment, and services necessary for proper and complete installation of all curbing and related items as indicated on the drawings and as herein specified including the following items:
  - 1. Granite curbing.
  - 2. Accessible curb cuts/ramps.

##### **1.3 REFERENCES**

- A. Comply with applicable requirements of the following standards.
  - 1. State of Maine, Department of Transportation Standard Specifications latest edition. Substitute all references to the "Department" with "Owner" and all references to "Resident" with "Engineer".
  - 2. American Society for Testing Materials (ASTM):
    - a. C 131: Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
    - b. C 615 Structural Granite

##### **1.4 SUBMITTALS**

- A. Comply with the requirements of Section 01 33 00 - Submittal Procedures.
- B. Perform Work in accordance with the following, unless otherwise noted herein:
  - 1. American Society for Testing and Materials (ASTM), Standard Specifications and Methods of Testing.
  - 2. State of Maine, Department of Transportation, Standard Specifications, Highways and Bridges, Latest Edition.
- C. Deliver granite curbing to job adequately protected from damage during transit.

- D. Protect granite curbing against staining, chipping and other damage. Cracked, badly chipped, or stained units will be rejected and not employed in the Work.
- E. Product Data: For granite curb and accessory materials, submit product data including certificate of compliance.
- F. Manufacturer's Certificate: Submit materials certificate signed by the material producer and Contractor, to the independent testing laboratory certifying that materials comply with, or exceed, the requirements herein.

#### 1.5 QUALITY ASSURANCE

- A. Comply with the requirements of Section 01 40 00 – Quality Requirements.
- B. Perform Work in accordance with the following, unless otherwise noted herein:
  - 1. American Society for Testing and Materials (ASTM), Standard Specifications and Methods of Testing.
  - 2. State of Maine, Department of Transportation, Standard Specifications, Highways and Bridges, Latest Edition.
- C. Obtain materials from same source for all granite curbing to be used on the project.
- D. Documents affecting Work of this Section include, but are not necessarily limited to; the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda, and all Sections of Division 1 are hereby made a part of this Section.
- E. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.
- F. All Work shall comply with the requirements of the Maine Department of Environmental Protection standards, the Oxford County Soil & Water Conservation District Standards, and City of South Paris, Maine requirements, to minimize adverse environmental impacts. Strict adherence to the Specifications and Plans is required in order to prevent adverse downstream impacts.
- G. Work shall be accomplished in accordance with regulations of local, county and state agencies and national or utility company standards as they apply.
- H. Maintain one copy of the Construction Documents on Site including the Drawings and Specifications.
- I. The Contractor shall bear all cost associated with correcting any work that does not meet the requirements of this Section or any damages to property outside the limits of Work.

#### 1.6 QUALIFICATIONS

- A. Installer: Company specializing in performing work of this section.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.
- B. Store materials properly to prevent damage, deterioration and inclusion of foreign matter. Aggregates shall be stockpiled in a well-drained location.

1.8 TRAFFIC CONTROL

- A. Maintain access for vehicular and pedestrian traffic as required for normal activities and other construction activities.
- B. Utilize flagmen, barricades, warning signs and warning lights as may be required. Two uniformed flaggers required when working in Main Street.
- C. The construction of all pavements within public rights-of-way shall be in accordance with the rules, regulations and requirements of the Public Agency having control and ownership of such rights-of-way.

**PART 2 - PRODUCTS**

2.1 MATERIALS

A. GRANITE CURBING

- 1. Granite: Provide structural granite conforming to ASTM C 615, Class I Engineering Grade, suitable for curbstone use.
  - a. Provide material that is light gray, free from seams which impair structural integrity and with percentage of wear less than 32 percent as determined by ASTM C 131.
  - b. Product: Swenson Granite or approved equivalent.
- 2. Curbing: Provide curbing complying with MDOT Specifications Section 712.04, Vertical Curb, Type 1 complying with MDOT Material Specifications 712.04.
  - a. Provide radius curbing wherever sections are not straight. No short pieces (less than 3-ft.) shall be permitted.
  - b. Provide with split-face and sawn top.

**PART 3 - EXECUTION**

3.1 EXAMINATION

- A. Section 01 73 00 – Execution Requirements: Verification of existing conditions before starting work.

### 3.2 SETTING GRANITE CURBING

- A. Install as indicated on Drawings and except as otherwise specified or indicated in compliance with MDOT 609.03.
- B. Set curbing in 18-inch wide trench, with trench bottoms at 6 inches below bottom of curb. Fill excavation to required level with subbase course material conforming to requirements of Section 32 11 23 – Aggregate Base Courses.
- C. Set curb with vertical face plumb, curb top parallel to adjacent surface.
- D. Set curb accurately to line and grade. Fit units as closely together as possible. Do not field cut curbing.
  - 1. Do not exceed 1/2 inch width for expansion joints.
- E. Backfill material on each side of curb as specified for adjacent surface, thorough compacted by power tampers. Exercise extreme care not to destroy alignment.
  - 1. Reset any curb section disturbed during backfilling or otherwise reset to proper line and grade and properly backfill.

### 3.3 TOLERANCES

- A. Variation from Indicated Elevation: Within 1/2 inch.

### 3.4 FIELD QUALITY CONTROL

- A. Comply with Section 01 40 00 - Quality Requirements.
- B. Comply with Section 01 73 00 - Execution Requirements.
- C. See item 1.4- Submittals of this Section for required tests and reports.
- D. Areas of insufficient installation shall be delineated, removed, and replaced in compliance with the specifications.

### 3.5 PROTECTION OF FINISHED WORK

- A. Section 01 73 00 - Execution Requirements: Protecting finished work.
- B. Protect all curbs from damage during construction operations.
- C. Clean all pavement splatter and smears from top and faces of all curb following paving activities.

END OF SECTION 32 16 13

**SECTION 32 17 23**

**PAVEMENT MARKINGS**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Description of work: Provide labor, materials, equipment, and services necessary for proper and complete pavement marking as indicated on the Drawings and as herein specified including the following items:
  - 1. Parking stalls
  - 2. Traffic directional arrows
  - 3. Crosswalks
  - 4. Fire Lane Markings

**1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
  - 1. Include technical data and tested physical and performance properties.

**1.4 INFORMATIONAL SUBMITTALS**

- A. Qualification Data: For manufacturer and installer.
- B. Material Certificates: For each pavement marking material.
- C. Field quality-control reports.

**1.5 FIELD CONDITIONS**

- A. Environmental Limitations: Do not apply pavement markings if pavement is wet or excessively damp, if rain is imminent or expected before time required for adequate drying.

## **PART 2 - PRODUCTS**

### **2.1 PAVEMENT MARKING MATERIALS**

- A. Pavement-Marking Paint: Latex, waterborne emulsion, lead and chromate free, ready mixed, complying with FS TT-P-1952, Type II, with drying time of less than 45 minutes  
Color: White
- B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following: Sherwin-Williams Waterborne Traffic Paint, or equal.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Verify that pavement is dry and in suitable condition to begin painting.

### **3.2 PAVEMENT MARKING**

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Engineer.
- B. Allow paving to age for at least 30 days before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust prior to painting.
- D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges.
- E. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils. Apply sufficient thickness to completely cover the underlying pavement with solid white lines, such that no pavement color shows through.

### **3.3 FIELD QUALITY CONTROL**

- A. Inspection Agency: Owner may engage a qualified agency to perform material and layout inspections. This will not relieve the Contractor of his quality control responsibilities

END OF SECTION 32 17 23

SECTION 32 92 00

TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Preparing sub-grade for turf areas
2. Soil Preparation
3. Seeding
4. Hydro-seeding
5. Sodding

B. Related Sections include the following:

1. Division 31 Section "Earth Moving" for soil materials, excavating, backfilling, and site grading.
2. Division 31 Section "Erosion & Sedimentation Control" for erosion and sedimentation control measures.
3. Division 31 Section "Site Clearing" for clearing and grubbing and stockpiling stripped materials

C. References Included in this Section:

1. USDA – United States Department of Agriculture
2. TPI – Turfgrass Producers International
3. ASTM- American Society for Testing & Materials.
4. AOSA – Association of Official Seed Analysis

1.3 DEFINITIONS

- A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

- D. Topsoil (Loam): The uppermost layer of soil characterized by high concentrations of organic matter. When found in its natural state it has a minimum depth of 4 inches. For the purpose of these specifications it can be natural or cultivated surface-soil layer containing organic matter and friable sand, silt, and clay particles; free of subsoil, clay lumps, gravel, and other objects more than 1 inch (50 mm) in diameter; weeds, roots, toxic materials, and other nonsoil materials.
- E. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- F. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill that will meet the specified compaction requirements.
- G. Subgrade: Surface or elevation of subsoil remaining after excavation is completed, or top surface of a fill or backfill before planting soil is placed.
- H. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- I. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

#### 1.4 SUBMITTALS

- A. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
  - 1. Certification of each seed mixture for turfgrass sod. Include identification of source and name and telephone number of supplier.
  - 2. For topsoil, submit topsoil analysis done by a plant and soil testing agency such as the Maine Soil Testing and Analytical Lab (207-581-2934) for review by the Owner's Representative. State recommended quantities for amendments necessary to produce satisfactory topsoil as stated in the specifications herein.
  - 3. Submit product information with mix ratios and amounts for hydro mulching to be used during hydro seeding for Owner's Representative's approval.
  - 4. Submit fertilizer, herbicide and fungicide products for application as required for Owner's Representative's approval.
- B. Product Certificates: For soil, soil amendments and fertilizers, from manufacturer.

#### 1.5 QUALITY ASSURANCE

- A. Soil-Testing Laboratory Qualifications: An independent laboratory with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

- B. Soil Analysis: For topsoil, Contractor to 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; 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 soil-testing laboratory shall oversee soil sampling, with depth, location, and number of samples to be taken per instructions from Owner's Representative. A minimum of three representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
  3. Report suitability of tested soil for turf growth.
    - a. Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. (92.9 sq. m) or volume per cu. yd. (0.76 cu. m) 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.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.
- B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying. Store in a cool, dry, shaded area.
- C. Bulk Materials:
1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
  2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
  3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.
- D. Use all means necessary to protect seed from moisture and other contaminants which may adversely effect proper germination.
- E. Use all means necessary to protect fertilizers, amendments and other materials from moisture and other contaminants which may adversely effect their efficacy.

## 1.7 PROJECT CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.
1. Spring Planting: April 15th to June 15th.
  2. Fall Planting: August 15 to September 15th.
  3. The Contractor may seed at times other than those specified, only upon authorization by the Owner's Representative.
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

## 1.8 MAINTENANCE SERVICE

- A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established but for not less than the following periods:
1. Seeded Turf: 60 days from date of planting completion.
    - a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

## PART 2 - PRODUCTS

### 2.1 TOPSOIL

- A. Topsoil (Loam):
1. Natural, fertile loam typical of cultivated topsoil of the locality, containing not less than 3.5 percent or more than 8 percent by weight, of decayed organic matter (humus) as determined by ASTM F1647.
  2. Obtain from a well drained arable site, free of subsoil, earth clods, large stones, sticks, stumps, clay lumps, roots, or other objectionable, extraneous matter or debris. Screen topsoil to a maximum stone size of 3/4 inch.
  3. Topsoil shall be free of Quack-grass rhizomes, *Agropyron Repens*, and the nut-like tubers of Nutgrass, *Cyperus Esculentus*, and all other primary noxious weeds.
  4. Topsoil shall have a pH of not less than 6.0 or greater than 6.8.
  5. Do not deliver topsoil or use while in a frozen or muddy condition.
  6. Topsoil shall have a loam texture classification and conform to the following particle size distribution, as determined by pipette method in compliance with ASTM F1632.
    - a. Sand: 40-60 percent.
    - b. Silt: 30-40 percent.

c. Clay: 5-20 percent.

- B. Existing topsoil stockpiled from on-site stripping may be utilized if in compliance with the requirements for topsoil. Clean existing soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth. If determined by a soil test the existing topsoil that was stripped does not meet said requirements, the topsoil may be amended to provide and acceptable topsoil for use.
1. Supplement existing topsoil with suitable off site topsoil when quantities are insufficient.
  2. If determined by a soil test the existing topsoil does not meet these specifications, the topsoil may be amended to provide acceptable topsoil. Once amendments are made the soil shall be retested for compliance with topsoil specifications.

## 2.2 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species: Seed of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:
1. Lawn Mixture: **See L1 Landscape Plan**

## 2.3 TURFGRASS SOD

- A. Turfgrass Species: Sod of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:
1. Proportioned by weight as follows:
    - a. 80 percent Kentucky Bluegrass (2 varieties minimum).
    - b. 20 percent Perennial Ryegrass (2 varieties minimum).

## 2.4 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
1. Class: O, with a minimum of 98 percent passing through No. 20 sieve and a minimum of 55 percent passing through No. 60 sieve.
  2. Provide lime in form of ground dolomitic limestone.

## 2.5 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 6.1 to 7.8; moisture content 40 to 60 percent by weight; 100 percent passing through 1/2-inch (12.5-mm) sieve; soluble salt content of less than 2mnho/cm in final topsoil mix; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: 30 to 60 percent of dry weight.
  2. Nutrients: Provide NPK level information.
  3. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or of granular texture, with a pH range of 3.4 to 4.8 and an ash content not exceeding 15 percent as determined by ASTM D2974.

## 2.6 FERTILIZERS

- A. Slow-Release Fertilizer: Granular or pellet fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
1. Composition: 15 percent nitrogen, 15 percent phosphorous, and 15 percent potassium, by weight or as otherwise recommended by the soil analysis.
  2. Registration: Fertilizer must be registered with the Maine State Department of Agriculture and shall meet their standard requirements.

## 2.7 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley. No material shall be used which is too wet, decayed or compacted as to inhibit even uniform spreading.
- B. Fiber Mulch: Biodegradable, green dyed wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5. Provide in moisture resistant sealed bags marked with the manufacturer's name, the air dry weight and composition of the contents.
- C. Hydro mulch: Shall be Terra-Sorb GB, or an approved equal. Add Terra-Sorb to the hydro seed tank at the amount of 60 pounds per acre.
- D. Mulch Binder: Asphalt emulsion; ASTM D 977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel,

- paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
  2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
  3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
  4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Owner's Representative and replace with new planting soil.

### 3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
1. Protect adjacent and adjoining areas from hydro-seeding and hydro-mulching overspray.
  2. Protect grade stakes set by others until directed to remove them.

### 3.3 TURF AREA PREPARATION

- A. Limit turf subgrade preparation to areas to be planted.
- B. Prevent surface water and ground water from entering excavations, from ponding on prepared sub-grades, and from flooding project site and surrounding area.
- C. Protect sub-grade 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.
- D. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
1. Stockpile soil materials away from edges of excavation and outside drip line of remaining trees.
- E. Uniformly moisten or aerate subgrade as required for proper placement and compaction.
- F. It is critical that neither the sub-soil nor top-soil shall be over-compacted and that as soil is brought in to raise the grade that underlying areas be scarified to eliminate layering of materials. Heavy road building equipment should be avoided. Use wide tracked or tired equipment specifically designed to minimize compaction. Heavy equipment should be kept off subgrades and topsoil areas during wet conditions.

- G. Place soil as indicated on the Drawings in layers not to exceed 8 inches or as directed by the Owner's Representative. Prior to placing soil scarify or otherwise loosen a minimum of 4 inches below sub-grade. Soils shall not be compacted beyond 85%.
- H. Use tilling equipment to thoroughly mix soil amendments into the entire depth of soil prior to fine grading or as other wise directed to insure uniform mixing.
- I. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 2 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
  - 1. Spread topsoil, apply planting soil amendments and fertilizer on surface, and thoroughly blend planting soil.
    - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
    - b. Mix lime with dry soil.
  - 2. Spread topsoil to a depth as indicated or a minimum to meet finish grades after light rolling and natural settlement. Do not spread if topsoil or subgrade is frozen, muddy, or excessively wet.
- J. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
  - 1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
  - 2. Loosen surface soil to a depth of at least 6 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches of soil. Till soil to a homogeneous mixture of fine texture.
  - 3. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
  - 4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.
- K. 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 finish grading to areas that can be planted in the immediate future.
- L. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- M. Before planting, obtain Owner's Representative acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.
- N. Provide fertilizer and lime application as recommended by the soil testing lab. Apply with broadcast spreader and incorporate into the top 4 inches of topsoil.

### 3.4 SEEDING

- A. Method of seeding may be varied at discretion of Contractor. It is his or her responsibility to establish a smooth, uniform turf composed of approved grasses.
- B. Sow seed with spreader or seeding 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.
  - 2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- C. Sow seed at rate recommended by the supplier.
- D. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.
- E. Protect seeded areas with slopes exceeding 1:4 with erosion-control blankets and 1:6 with erosion-control fiber mesh installed and stapled according to manufacturer's written instructions.
- F. Mulch seeded areas with straw mulch, 1-1/2 to 2 tons per acre. Secure mulch at Contractor's discretion as to method or need.

### 3.5 HYDRO-SEEDING

- A. Method of seeding may be varied at discretion of Contractor. It is his or her responsibility to establish a smooth, uniform turf composed of approved grasses.
- B. Hydro-seeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydro-seed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
  - 1. Mix slurry with asphalt-emulsion tackifier.
  - 2. Apply slurry uniformly to all areas to be seeded in a two-step process. Apply first slurry coat at a rate so that mulch component is deposited at not less than 500-lb/acre (5.2-kg/92.9 sq. m) dry weight, and seed component is deposited at not less than the specified seed-sowing rate. Apply slurry cover coat of fiber mulch (hydromulching) at a rate of 1400 lb/acre.

### 3.6 TURF MAINTENANCE

- A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and additional mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
  - 1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.

2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
  3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
  4. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
  5. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.
- B. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain a grass height of 2-1/2 to 3 inches.

### 3.7 INSPECTION AND ACCEPTANCE

- A. Turf installations shall meet the following criteria as determined by Owner's Representative. The Owner's Representative will inspect lawns upon written request by the Contractor. The request shall be received at least ten (10) days before the anticipated date of inspection.
1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches.
- B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.
- C. If the grass is in satisfactory condition, the Contractor's care and maintenance responsibilities will end. If the grass stand is unsatisfactory, the Contractor's maintenance responsibility shall continue, including a normal program of mowing, trimming, reseeding, fertilization and repair until and acceptable stand of grass is achieved.

### 3.8 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- C. Remove nondegradable erosion-control measures after grass establishment period.

END OF SECTION 32 92 00