

March 2015

*Revised July 2015*

Project Manual and Technical Specifications:

# Veteran's Memorial Park

## Trails Improvements Project

A.P. 24, Lots 2, 18, 46, and 96

West Street, Barrington, RI

### Funding:

Rhode Island Department of Environmental Management (RIDEM) and  
Rhode Island Department of Transportation (RIDOT)

**Trails Advisory Committee Recreational Trails Grant Program**

**RIDEM Narragansett Bay and Watershed Restoration Bond Fund**

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Administered by:  
The Town of Barrington, RI



Designed by:

**KEVIN M. ALVERSON, LA**  
LANDSCAPE ARCHITECTURE



Kevin M. Alverson, LA  
360 Annaquatucket Road  
Wickford, RI 02852  
(401) 338 • 0044

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Town of Barrington, RI

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# LIST OF DRAWINGS

**Project Title:**  
**Veterans Memorial Park Trail Improvements**

Town of Barrington, RI

## **Contract Drawings:**

Contract Drawings shall be those plans entitled, '*Veteran's Memorial Park Trail Improvements*', sheets 1-7 of 7, dated March 2015, with Revisions through July 27, 2015, as prepared by Kevin M. Alverson, LA.

## **List of Drawings:**

<i>Drawing Number</i>	<i>Drawing Title</i>
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# INSTRUCTIONS TO BIDDERS

## Veterans Memorial Park Trails Improvements: Barrington, RI

### Project Title:

Veterans Memorial Park Trail Improvements Project

### Awarding Authority:

Town of Barrington  
Office of the Town Manager  
283 County Road  
Barrington, Rhode Island 02806  
Telephone: 401-247-1900

### Project Description:

Work shall be to provide the Town with completed ready-for-use facilities. Scope includes but is not limited to the following: **Veterans Memorial Park Trail Improvements**. Incidental to these improvements are the installation of **erosion control** measures.

### Pre-Bid Conference:

A **mandatory pre-bid conference** will be held for all interested parties at 10:00 am Thursday, August 27, 2015, in the Town Council Chamber, 2nd Floor, Barrington Town Hall, 283 County Road, Barrington, RI

### Bid Specifications:

Bids shall be submitted to complete the improvements in accordance with the attached **Contract Documents** detailing the proposed project. The contract, if awarded, will be on the basis of materials and equipment described in the Contract Documents as proposed by the Contractor and approved by the Town. Application for substitution or "or-equal" items of material or equipment where specified will be considered by the Town after the effective date of the agreement with the Contractor.

### Responsibility of Bidders:

It is the responsibility of each bidder before submitting the bid to:

- Examine thoroughly the bidding documents.
- Visit the site and become familiar with and satisfy bidder as to the general local and site conditions that may affect the cost, progress, performance or furnishing of the work.
- Promptly notify the Owner/Town (hereinafter referred to as "the Town") and Owner's Representative of all conflicts, errors, ambiguities, or discrepancies which bidder has discovered in or between the Contract Documents and other related documents.

## Interpretation:

The **Plans and Specifications are to be considered together and are intended to be mutually complementary**, so that any work shown on the Plans though not specified in the Specifications, and any work specified in the Specifications though not shown on the Plans, is to be executed by the Contractor as a part of this Contract.

Any **questions by prospective Bidders** concerning interpretation of the Contract Documents must be submitted in writing **to the Awarding Authority** and should be in its possession at least five (5) working days before the date set for the receipt of Bids.

The Awarding Authority will **post on the Town's Website any addenda or written interpretations** that it deems necessary to Bidders who have taken out plans at the address given by them before the date set for the receipt of affected Bids:

<http://www.barrington.ri.gov/topics/govbids.php>

Bidders may not rely upon oral communications or interpretations from the Awarding Authority or the Designer, and the Awarding Authority shall not be bound by them. Written questions shall be submitted by email to Town Planner Philip Hervey: [phervey@barrington.ri.gov](mailto:phervey@barrington.ri.gov)

All bidders must acknowledge receipt of any issued addenda in the appropriate location, on the Bid Form.

## Bid Preparation & Submission:

One (1) Original and one (1) copy of the completed **Bid Form** (attached) shall be submitted no later than **11:00 am, on Friday, September 18, 2015**, at which time and place they will be publicly opened and read. Bids shall be submitted on the Bid Form included. Bids are to include **Proof of Insurance**. All entries on the bid form shall be typewritten or in ink. The bid submission shall be enclosed in a sealed envelope on which the bidder's return address, including the bidder's name, is listed, and be addressed as follows:

### **Town of Barrington**

Office of the Town Manager

283 County Road

Barrington, Rhode Island 02806

CONSTRUCTION BID ENCLOSED

Contract Title: Veteran's Memorial Park Trail Improvements Project

Bidder Name:

Bidder Address:

Where so indicated on the Bid Form, sums shall be expressed in both words and numerals.

Where there is a discrepancy between the Bid sum expressed in words and the Bid sum expressed in figures, the Bid sum expressed in words shall control unless the intention of the Bidder clearly is otherwise as determined by the Awarding Authority in its sole discretion. Each Bidder shall acknowledge all required alternates in the appropriate location on the Bid Form, by entering the dollar amount of addition or deduction necessitated by the alternate(s). General Bidders shall enter on the General Bid Form a single amount for each alternate that shall consist of the amount for work performed by the general Bidder and all required sub-contractors.

All bids will remain subject to acceptance for sixty (60) days after the date of bid opening. The Town may, in its sole discretion, release any bid prior to that date. *The Town reserves the right to reject any or all Bids, including without limitation the right to reject any or all nonconforming, non-responsive, unbalanced or conditional bids, as the best interests of the Town may require. The Town further reserves the right to rebid any or all portion(s) of a bid that it feels may be non-competitive.*

### **Selection Process:**

The Town shall utilize a Project-Qualification Based Selection Process. Among the elements to be considered in the selection process are the following:

- A. Years in business;
- B. History of successful completion of similar projects and quality of workmanship;
- C. References (provide a list of all pertinent projects undertaken in the past five years and name and phone number of contact person);
- D. Price (base bid and alternate pricing).

### **Reservation of Rights:**

The Town reserves the right to waive all informalities and to negotiate contract terms with the successful bidder. Alternate prices are in addition to and are not included in the lump sum price.

### **Tax Exemption:**

The Town of Barrington is a tax-exempt purchaser to the extent that materials and supplies are used and incorporated into the performance of this contract.

### **Payment Terms:**

The Contractor will be required to submit Applications for Payment a maximum of once a month. The Town will make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment and based on the value of the work completed, on or about the 25th day of each month during construction. All such payments will be measured by the schedule of values established before first request for payment.

## **Bid Materials:**

All bid materials shall become the property of the Town and the Town shall not be under any obligation to return any bid materials to bidders.

## **Contract Form:**

A contract between the Contractor awarded the project and the Town shall be drafted by the Town utilizing the AIA document “**A101-2007**”, **Standard form of Agreement Between Owner and Contractor**,” as amended, and the project Bid Documents.

## **Project is Subject to RI Prevailing Wage:**

Labor costs used as a basis for the Bid shall be in conformance with the wage rates for the relevant work classifications as listed in the **attached Wage Decision** (Attached Herewith).

## **Certified Payrolls:**

The project is subject to Prevailing Wage requirements. The Contractor awarded the project shall be required to submit RI Certified Weekly Payroll forms to the Town verifying compliance with the applicable Wage Decision.

## **Minority, Disadvantaged, or Woman Owned Business Requirement:**

Competitive Procurement: Consistent with RIGL 37-14.1, the Contractor shall ensure that at least ten percent (10%) of the dollar value of the work performed shall be performed by a Minority, Disadvantaged, or Woman Owned Business Enterprise certified by the Department of Administration (DOA).

## **Completion Date:**

The project shall be substantially complete by **Friday, December 11, 2015**.

## **Permits:**

All work shall conform to Federal, State and local ordinances and regulations. The Project shall comply with Regulatory Requirements as specified in **Section 01060**, attached.

A building permit shall be obtained by the Contractor, where applicable. The Contractor is subject to local and state building permit fees.

## **Bid Bond:**

A Bid Bond is **not** required.

## **Performance and Payment Bonds:**

Performance and Payment bonds are **not** required.

## **Insurance:**

The Contractor shall submit proof of General Liability Insurance as specified below:

- a. General aggregate \$2,000,000
- b. Personal injury \$2,000,000
- c. Each occurrence \$1,000,000
- d. Fire damage (any one fire) \$100,000

The Contractor shall submit proof of Workers Compensation Coverage as required by State law.

## **Other Requirements:**

- Demolition required for construction will be completed by the Contractor.
- Construction debris shall be removed from the site and properly disposed.
- The Contractor will provide all tools and equipment necessary to professionally complete the project.
- The project site shall be left clean with all labels removed and surfaces washed.
- Contractor to provide a one-year warranty on items constructed starting at final completion.
- The Contractor shall provide submittals of all products and systems for the Owner's review and approval, prior to purchase of products. Allow for minimum 1 week to review submittals.

**Project Title:  
Veterans Memorial Park Trail Improvements**

Town of Barrington, RI

**Submitted By:**

In compliance with the invitation for bids for the **Veteran's Memorial Park Trail Improvements Project**, located in Veterans Memorial Park in the Town of Barrington, Rhode Island, the undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with the Owner on the form provided by the Owner to perform all Work as specified or indicated in the Bidding Documents for the prices and in accordance with the other terms and conditions of the bidding documents.

The prices that are herein quoted will be the price to the Owner, if accepted by the Owner, including all expenses incurred in performing the work required under the Contract Documents in which this proposal is a part.

Company Name: \_\_\_\_\_ Telephone \_\_\_\_\_

Company Address: \_\_\_\_\_

Telephone No.: \_\_\_\_\_ Email: \_\_\_\_\_

Bidder's Signature: \_\_\_\_\_

Title: \_\_\_\_\_ Date \_\_\_\_\_

**Bidder's Representations**

By Signature above, the Bidder acknowledges he/she has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, including the below representations, and the following Addenda, receipt of which is hereby acknowledged:

<b>Addendum No.</b>	<b>Addendum Date</b>	<b>Signature of Bidder</b>
_____	_____	_____
_____	_____	_____

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

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

The Bidder has fully examined the Contract Documents and related specifications, and is familiar with the availability of all materials and labor required to successfully construct the Project in accordance with the Contract Documents.

**Part 1: Lump Sum Base Bid**

Pursuant to and in compliance with the Town of Barrington Invitation for Bids of **Veteran’s Memorial Park Trail Improvements Project**, and in compliance with the Contract Documents and the Specification relating hereto, the undersigned, unless explicitly noted, hereby offers to furnish the items necessary, proper and incidental to this work, whether incorporated on the bid the undersigned or not, for the **Total Lump Sum Base Bid** as follows:

\_\_\_\_\_ \$ \_\_\_\_\_  
(written) (figures)

The bidder shall specify his bid price in both words and figures. All words and figures shall be in ink or typed. In case of a discrepancy between the prices written words and those in figures, the written word shall govern.

Addenda or written interpretations deemed necessary to Bidders, if any, shall be posted on the Town’s website before the date set for the receipt of affected bids:

<http://www.barrington.ri.gov/topics/govbids.php>

It shall be the responsibility of the Bidder to acquire any and all addenda, as posted on the Town’s website, in advance of submission on this bid.

One (1) original and one (1) copy of this completed submittal shall be delivered to the **Office of the Town Manager** on or before **Date and Time noted on the Invitation to Bid and Instructions to Bidders**:

**Town of Barrington, RI**  
Office of the Town Manager  
Barrington Town Hall  
283 County Road  
Barrington, RI 02806

The bid may be withdrawn prior to the scheduled time for opening of bids or any authorized postponement thereof. No bidder may withdraw a bid within sixty (60) days after actual date of opening thereof.

**Part 2: Alternates**

- A. Alternates as quoted below are proposed to provide for Lump Sum adjustments to the Base Bid **prior to Contract Award**.
- B. One or more Alternates may be executed at the Owner's Option, and accepted Alternates will be made a part of the Owner / Contractor Agreement.

Alternate No. 1: **ADD new Legion Trail Improvements**, including all necessary site clearing and preparation, erosion and sedimentation control, new stonedust trail surfacing, new boulder retaining wall, landscaping, and all incidental site work necessary for installation of these improvements, as illustrated on the Contract Drawings as 'Add Alternate 1'.

\$ \_\_\_\_\_ \_\_\_\_\_ LS  
Add (Lump Sum)                      In Words

Alternate No. 2: **ADD new Trail Head Improvements** at the **Red Trail** Bike Path Trail Head and **Blue Trail** Bike Path Trail Heads, including all necessary site clearing and preparation, erosion and sedimentation control, new stonedust surfacing, new Granite Curb Stone Erosion Control (where indicated), new landscaping, and all incidental site work necessary for installation of these improvements, as illustrated on the Contract Drawings as 'Add Alternate 2'.

\$ \_\_\_\_\_ \_\_\_\_\_ LS  
Add (Lump Sum)                      In Words











# SUMMARY OF WORK

## Section 01010

### Part 1 - General:

#### 1.01 – Work Covered by Contract Documents:

- A. Base Bid: The work to be done under this Contract, 'Veteran's Memorial Park Trail Improvements Project,' consists of site preparation, trail improvements, erosion control measures, and landscape improvements, as specified, and as shown on the Contract Drawings.
- B. Alternates: All Alternates to allow for adjustments to the Base Bid Prior to Contract Award are listed under Part 2 of the Bid form as provided by the Town of Barrington and included within the Project Manual.
- C. Contract Adjustments: Contract Adjustments and procedures for said adjustments to Scope of Work during the Course of Construction are outlined in other sections of this Project Manual, including, but not necessarily limited to Section 01035 of these specifications.

#### 1.02 – Schedule of Work:

- A. The Contractor is required to submit a detailed Schedule of Work outlining the anticipated tasks and specific project schedule for the successful completion of the project. This shall be submitted to the Owner's Representative after a Pre-construction conference to be scheduled between the Owner, the Owner's Representative, and the Contractor, and prior to the start of construction. The schedule shall be updated every two weeks during construction procedures.
- B. The Contractor is advised of the following when preparing the required Schedule of Work:
  - 1. The Contractor shall coordinate input from all Subcontractors and Suppliers in the preparation of this schedule.
  - 2. The Contractor's operations, scheduling, and site access shall be coordinated with the Owner.
  - 3. Work at night, on Sundays, or on major Holidays will be prohibited without explicit Owner's written permission except in the case of emergency. The Contractor shall provide, at his own expense, all lighting, traffic control, safety equipment, and other facilities necessary for the proper execution of the work.

## **SUMMARY OF WORK**

### **Section 01010**

#### 1.03 – Contract Drawings and Specifications:

- A. The Contract Drawings shall be those drawings entitled, ‘Veteran’s Memorial Park Trail Improvements,’ as prepared by Kevin M. Alverson, LA, dated March 2015, as amended.
- B. The Contract Drawings and Specifications are included in the Contract Documents, and intended to complement each other. All work called for by either shall be as binding as if called for by both.
- C. The Contractor shall thoroughly acquaint himself with the Project Site, Contract Agreement, and all requirements of the Specifications and Contract Drawings. For reference, these Specifications are separated into sections. All sections are complimentary and as such shall not operate to make the Owner’s Representative an arbiter to establish jurisdictional limits.
- D. Additional Drawings, Memoranda, Illustrations, etc., prepared during the course of construction to clarify or interpret the Project Specifications, or modify the contract during construction shall be incorporated into the Contract Documents, and will be considered part of the Project Record.
- E. All Drawings, Specifications and Memoranda relative to the work are the property of the Owner and shall be returned to the Owner’s Representative at the completion or cessation of the work.

#### 1.04 – Obligations of the Contractor:

- A. The contractor shall furnish all labor, materials, plant, supplies, equipment, tools and all other facilities necessary to the proper and complete construction of the project, as required by the Contract Drawings and as specified herein.
- B. Throughout the duration of the Contract, wherever it is specified that work is to be done, or labor, materials or equipment are to be furnished, it is understood to mean that the said work to be done or the labor, materials or equipment to be furnished is to be supplied or done by the Contractor at his own proper cost or expense.
- C. Errors and/or Discrepancies:
  - 1. The Contractor shall verify all quantities and measurements as may be shown on the Contract Drawings or called for in the Specifications and shall notify the Owner’s Representative of all discrepancies, errors or omissions found therein.

## **SUMMARY OF WORK**

### **Section 01010**

2. The Contractor shall notify the Owner's Representative immediately of any apparent ambiguity, error or omission in the Contract Drawings or Specifications. The failure to correctly or specifically mention or note any portion of the work, the proper performance of which is evidently necessary to fulfill the general intention of the Contract Drawings and Specifications, shall not act to release the Contractor from the proper performance of such work in the identical manner as if fully and correctly indicated and without expense to the Owner beyond the stipulated Contract price or prices. The forgoing shall not apply to additions, improvements or changes for which provisions have been otherwise made.

#### **D. Mutual Responsibility:**

1. If the Contractors or Subcontractors suffer loss or damage to their work through acts of neglect on part of General Contractor, then General Contractor agrees to satisfactorily arrange for settlement with other such Contractor or Subcontractor, if other such Contractor or Subcontractor will so settle.
2. If, however, such other Contractor or Subcontractor chooses to assert claim against Owner, on account of damage alleged to have been sustained, Owner shall notify Contractor, who shall defend, at his expense, any suit based on such claims, and, if judgment or claims against Owner shall be allowed, Contractor shall pay or satisfy such judgment or claims, and pay costs and expenses in connection with same.

#### **E. Legal Address of the Contractor:**

1. The address given in the Bid or Proposal submitted by the Contractor and the Contractor's office are hereby designated as places to either of which notices, letters and other communications to the Contractor shall be certified, mailed or delivered. The delivering at the above-named place, or depositing in a postpaid package directed to the first-named place, in any post office box regularly maintained by the Post Office Department, or any notice, letter or other communication to the Contractor, shall be deemed sufficient service thereof upon the Contractor and the date of said service shall be the date of such delivery or mailing. The first-named address may be changed at any time by an instrument in writing, executed and acknowledged by the Contractor and delivered to the Owner's Representative. Nothing herein contained shall be deemed to preclude or render inoperative the service of any notice, letter or other communication upon the Contractor personally.

## **SUMMARY OF WORK**

### **Section 01010**

#### F. Employees of the Contractor:

1. The Contractor shall employ a competent, experienced Superintendent and Forman to represent him at the several parts of the work. These persons shall be present at all times while the work entrusted to them is in progress and shall be fully informed regarding it. The Superintendent shall be satisfactory to the Owner's Representative and shall represent and have full authority to act for the Contractor in his absence. All other persons employed on the work shall be competent and skillful persons.

#### G. Safety Precaution Measures (Generally):

1. The Contractor shall take all necessary precautions to conduct his operations in such a manner so as to provide maximum possible safety for all employees on the work and the public as well. The Contractor shall provide suitable barricades, bridges, railings and similar protection around and over excavations and open trenches so as to insure maximum protection. All State and Federal Laws applicable to the work shall receive compliance.
2. The Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's Superintendent unless otherwise designated in writing by the Contractor to the Owner and the Owner's Representative.

#### H. Permits and Licenses:

1. The Contractor shall secure and pay for all local Town, State, & Federal permits and licenses necessary for the execution of the work.
2. The Contractor shall give such notices, comply with all laws, ordinances, rules or regulations having bearing on the conduct of the work. The Contractor shall indemnify the Owner, its officers and agents against claim or liability arising from failure to comply with such rules, laws or ordinances by himself, his employees or Subcontractors. Fees shall be waived for Municipal permits only.

#### 1.05 – Obligations of the Owner:

- A. The Owner will provide all land and easements necessary for the construction of all permanent structures called for by the Contract. The limits of the land acquired for the permanent construction are shown on the Contract Drawings.

## **SUMMARY OF WORK**

### **Section 01010**

#### 1.06 – Obligations of the Owner’s Representative:

- A. The Owner’s Representative shall be the interpreter of the requirements of the Contract Documents and the judge of the performance there under by both the Owner and Contractor. The Owner’s Representative shall render interpretations necessary for the proper execution or progress of the work with reasonable promptness on written request of either the Owner or the Contractor, and shall render written decisions, within a reasonable time, on all claims, disputes and other matters in question between the Owner and the Contractor relating to the execution or progress of the work or the interpretation of the Contract Documents.
- B. Interpretations and decisions of the Owner’s Representative shall be consistent with the intent of and reasonably inferable from the Contract Documents and shall be in written or graphic form. In the capacity of interpreter and judge, the Owner’s Representative shall endeavor to secure faithful performance by both the Owner and the Contractor, shall not show partiality to either, and shall not be liable for the result of any interpretation or decision rendered in good faith in such capacity.
- C. The Owner’s Representative shall have authority to reject work that does not conform to the Contract Documents. Whenever, in the Owner’s Representative’s reasonable opinion, it is necessary or advisable for the implementation of the intent of the Contract Documents, the Owner’s Representative will have authority to require special inspection or testing of the work in accordance with the provisions of the Contract Documents, whether or not such work be fabricated, installed or completed.
- D. The Owner’s Representative will not control over, take charge of or, be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the work, since these are solely the Contractor’s responsibility.

#### 1.07 – Site Control and General Protection Measures:

- A. The Contractor shall, at his own expense, protect all work completed or partially completed under this Contract and shall be solely responsible for the care and protection of all materials covered by this Contract. Damage, loss, or injury from any cause whatsoever shall be made good by the Contractor at his own expense. The method of providing against such damage, loss or injury is left to the discretion of the Contractor. All damaged work must be replaced to the satisfaction of the Owner’s Representative at no cost to the Owner.
- B. Utility Protection and "DIG-SAFE" DAMAGE PREVENTION SYSTEM: All Contractors or Subcontractors performing drilling, boring, auguring, jetting, sheeting or pile

## **SUMMARY OF WORK**

### **Section 01010**

installation, soil preloading for consolidation, demolition, excavation or like work shall, prior to commencement of these activities, shall verify utility locations by contacting DIG SAFE (888-DIG-SAFE (344-7233) or dial 811), in accordance with the laws of the State of RI.

1. Contractor shall be responsible for injury to water pipes, gas pipes, oil pipes, electrical wires, conduits, drains, sewers, fiber optic cables and other structures that may be met within the project area, owned by individuals, by firms or corporations, or by the municipality. Contractor shall be liable for damages to public or private property resulting there from.
2. Shore or sling up in their places, without injury, gas pipes, water pipes, oil pipes, gasoline pipes, electrical conduits and other structures, public service owned, or controlled by individuals, firms or corporations, which may be intercepted during and by work under this Contract. Maintain them in constant operation except as may be required to connect and disconnect from them.

#### 1.08 – Weather Conditions:

- A. No work shall be done when in the opinion of the Owner's Representative the weather is unsuitable. In no instance shall concrete, earth backfill, paving or embankment be placed upon frozen material. The Contractor shall be responsible for the protection of all completed or partially completed work as a result of extreme weather conditions. The Contractor shall be fully aware of the extremes of weather conditions in the area in regards to the depth of frost and snowfall, and the degree and length of sub-freezing temperatures during the winter season. If there is delay or interruption in the work due to weather conditions, the necessary measures must be taken to bond new work to old. Only such work as will not suffer injury to workmanship or materials will be permitted in inclement weather.
- B. Should tornado, hurricane, gale or heavy wind warnings be issued, the Contractor shall take every practicable precaution to minimize the danger to persons, to the work, and to adjacent properties. Such damage caused to any part of the work shall be rectified or replaced to the complete satisfaction of the Owner's Representative and at no expense to the Owner. Injury to personnel or damage to adjacent property because of the work shall be the complete responsibility of the Contractor, and he accepts exclusive liability for same.

#### 1.09 – Loading:

- A. No part of any work involved in this Contract shall be loaded during construction with a load greater than it is calculated to carry with safety. Should any accidents or

## **SUMMARY OF WORK**

### **Section 01010**

damage occur through any violation of this requirement, the Contractor shall be held responsible under his Contract and Bond.

#### 1.10 – Partial Occupancy:

- A. The Owner shall have the right to take possession of or use any part of the completed or partially completed work prior to final acceptance.
- B. Should Partial Occupancy be desired by Owner, the Owner will give notice thereof to Contractor, and such occupancy shall be upon the following terms:
  - 1. The occupancy or use of any area shall not constitute acceptance of work not performed in accordance with the Contractor, nor relieve Contractor of liability to perform any work required by Contract but not completed at time of said occupancy.
  - 2. The general guarantee period, called for in General Conditions, for work substantially completed shall not begin to run until issuance of certificate by Owner's Representative.
  - 3. Contractor shall be relieved of all maintenance costs on portions occupied under this Agreement.
  - 4. Contractor shall not be responsible for wear and tear or damage resulting from Partial Occupancy as agreed to by Owner and Contractor.
  - 5. Owner shall assume risk of loss with respect to any portion occupied by it under the terms of this Agreement. However, Contractor shall assume full responsibility for loss or damage traceable to his fault or negligence in the performance of his Contract.

#### 1.11 – Materials and Workmanship:

- A. All work shall be done in a neat, workmanlike manner. All materials, equipment and workmanship shall fully conform to the requirements of the Contract Documents and shall be in every respect in accordance with the best modern practice. All materials and equipment shall be new and of standard first-grade quality and design. Materials and equipment shall be assembled and erected in a neat, workmanlike manner and in proper level and alignment.

## SUMMARY OF WORK

### Section 01010

#### 1.12 – Other Requirements:

##### A. Grades, Lines and Layout:

1. Contractor shall determine the finish grades and lines in the field as provided by the elevations of the existing grades and surfaces specified to remain.
2. Deviation from established grades or lines determined by the elevations of the existing grades and surface, etc., specified to remain, will not be permitted except by written approval of Owner's Representative, or unless obvious error exists in designated grades or lines.

##### B. Test Pits:

1. The Contractor shall not proceed with the work at locations where new stormwater facilities or utilities are to be constructed or connect to existing until a test pit has been dug to determine the existing conditions.
2. If existing conditions differ from those shown on the Drawings, such as debris, unsuitable materials, inverts, size, etc., the Contractor shall notify the Owner's Representative so that the revisions can be made to suit conditions found. If differing conditions are found, no test pits are to be backfilled until the Owner's Representative has reviewed to his satisfaction.
3. Compensation for test pits shall be considered as having been included in the prices stipulated for the appropriate items of utility work as listed in the Bid. Test pits shall be backfilled immediately after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the Owner's Representative.

C. Disposal of Excess and Unsuitable Non-Hazardous Material: The Contractor shall be responsible for the disposal of all excess and unsuitable non-hazardous material. The Owner's Representative may direct the Contractor to dispose material at a site selected by the Owner at no additional cost to the Owner.

D. Water: The Contractor shall not operate any valves nor tie-into the water service unless approval has been received from the Owner.

E. Electric: The Contractor shall not tie-into the electric service unless approval has been received from the Owner and appropriate Utility Company(ies).

F. Environmental Regulations: The Contractor shall conform operations to all applicable environmental regulations.

**End of Section**

# MODIFICATION PROCEDURES

## Section 01035

### Part 1 – General:

#### 1.01 – Related Documents:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Division 1 Section 01010 "Summary of Work" for requirements for the Contractor's Construction Schedule.
  - 2. Division 1 Section 01631 "Substitutions" for administrative procedures for handling requests for substitutions made after award of the Contract.

#### 1.02 – Minor Changes in the Work:

- A. Minor changes in the Work, not involving adjustment to the Contract Sum or Contract Time/Schedule may be requested by the Owner or Owner's Representative. Should such minor changes be requested, Owner's Representative will issue supplemental instructions authorizing this work.

#### 1.03 – Change Order Proposal Requests:

- A. Owner-Initiated Proposal Requests: The Owner's Representative will issue a detailed description of proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal requests issued by the Owner's Representative are for information only. Do not consider them as an instruction either to stop work in progress or to execute the proposed change.
  - 2. Within 1 day of receipt of a proposal request, submit an estimate of cost necessary to execute the change to the Owner's Representative for the Owner's review.
  - 3. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.

## MODIFICATION PROCEDURES

### Section 01035

4. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  5. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.
- B. Contractor-Initiated Proposals: When latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Owner's Representative.
1. Include a statement outlining the 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 Contract Time.
  2. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
  3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  4. Comply with requirements in Section 01631 "Substitutions" if the proposed change requires substitution of one product or system for a product or system specified.
- C. Change Order/Proposal Request Form: All Change Order Documentation shall be provided by contractor on appropriate standardized AIA forms.

#### 1.04 – Construction Change Directive:

- A. Construction Change Directive: When the Owner and the Contractor disagree on the terms of a Proposal Request, the Owner's Representative, upon request by the Owner, may issue a Construction Change Directive on appropriate AIA Form. The Construction Change Directive instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
1. The Construction Change Directive contains a complete description of the change in the Work. It also designates the method to be followed to determine change in the Contract Sum or Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

## **MODIFICATION PROCEDURES**

### **Section 01035**

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

#### 1.05 – Change Order Procedures:

- A. Upon the Owner's approval of a Proposal Request, the Contractor will issue a Change Order for signatures of the Owner and the Owner's Representative. Use appropriate AIA standardized documents for Change Order Proposals.

#### **Part 2 - Products (Not Applicable)**

#### **Part 3 - Execution (Not Applicable)**

**End of Section**

**Part 1 – General:**

1.01 – Related Documents:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Section 01010 "Summary of Work"
  - 2. Section 01340 "Shop Drawings, Product Data, and Samples"
  - 3. Section 01700 "Contract Closeout"
  - 4. Section 01720 "Project Record Documents"
  - 5. Structural drawings and Shop Drawings Provided by Contractor

1.02 – Summary:

- A. The Contractor shall acquire and bear the cost of the services of a licensed Land Surveyor to establish the Benchmarks and position of the proposed new site features. Refer to the Construction Documents for further information.
- B. General: This Section specifies administrative and procedural requirements for field-engineering services, when required throughout the construction of this project, including, but not limited to Layout Engineering Services, and As-Built Drawing Preparation.

1.03 – Submittals:

- A. As-Built Survey: Upon completion of construction, prepare a final as-built survey showing significant features for the Project. Include on the survey a certification, signed by the surveyor, that principal lines, and levels of the Project are accurately positioned as shown on the survey.
- B. Certificates: Submit a certificate signed by the land surveyor or professional engineer certifying the location and elevation of improvements.

## FIELD ENGINEERING

### Section 01050

- C. Project Record Documents: Submit a record of Work performed and record survey data as required under provisions of section 01700 "Project Closeout" and Section 01720 "Project Record Documents" Section.

#### 1.04 – Quality Assurance:

- A. Survey Qualifications: Surveyor Engaged by the Contractor shall be a surveyor licensed in Rhode Island, with active Certificate of Authorization from the State to perform required engineering services. Upon request, Contractor shall supply the Owner with all documentation of licensing and/or qualifications.

### **Part 2 – Products (Not Applicable)**

### **Part 3 – Execution**

#### 3.01 – Examination:

- A. Identification: The Surveyor will locate and identify existing control points on the project site. Refer to Contract Drawings for original control points and establish additional or temporary controls as necessary. Coordinate with authorities as necessary for traffic control and/or access to areas outside of the identified Limit of Disturbance as noted on plans.
- B. Contractor to make themselves aware of existing field conditions and project site and verify layout information shown on the Drawings, in relation to those conditions, before proceeding to lay out the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
  - 1. Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost or destroyed reference points or requirements to relocate reference points because of necessary changes in grades or locations.
  - 2. Promptly replace lost or destroyed Project control points. Base replacements on the original survey control points.
- C. Establish and maintain a minimum of 2 permanent benchmarks on the site, referenced to data established by survey control points.
  - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

## FIELD ENGINEERING

### Section 01050

- D. Existing Utilities and Equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction – refer to Section 01010 of these Specifications for DIG-SAFE Utility Verifications.
1. Prior to construction, the Contractor shall verify the location of sanitary sewer, storm sewer, water-service piping, electric conduit and /or all other under ground components, so as to not impose damage to any existing under ground utilities and/or structures.

#### 3.02 – Performance:

- A. Work from lines and levels established by the existing conditions survey. Establish benchmarks and markers to set lines and levels at each story of construction and elsewhere as needed to locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.
1. Advise entities engaged in construction activities of marked lines and levels provided for their use.
  2. As construction proceeds, check every major element for line, level, and plumb.
- B. Surveyor's Log: Maintain a surveyor's log of control and other survey work. Upon request, this log shall be available for reference to the Owner, Owner's Representative, and any local, State, or Federal Regulatory Staff.
1. Record deviations from required lines and levels, and advise the Project Manager and Owner's Representative when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.
  2. On completion of construction, prepare a certified as-built survey showing dimensions, locations, angles, and elevations of construction and sitework.
- C. Existing Utilities: Furnish information necessary to adjust, move, or relocate existing structures, utility poles, lines, services, or other appurtenances located in or affected by construction. Coordinate with local authorities having jurisdiction.

**FIELD ENGINEERING**  
**Section 01050**

- D. As-Built Survey: Prepare a final as-built survey showing significant features for the Project. Include on the survey a certification, signed by the surveyor, that principal lines, and levels of the Project are accurately positioned as shown on the survey.

**End of Section**

**Part 1 - General:**

1.01 – General Permitting:

- A. The Contractor shall abide by all local, state, and federal regulations and regulatory authorities for all aspects of this project, including, but not necessarily limited to local building code, Rhode Island Department of Environmental Management (RIDEM) regulations, Local Utility Commissions, RI Governor’s Commission on Disabilities, The Americans with Disabilities Act, and Conservation and Preservation Authorities.

1.02 – Related Documents:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Related Sections: Prior to construction commencement, Contractor shall coordinate with installation of RIDEM Permit Signage to be provided by the Owner.

1.03 – Environmental Permitting:

- A. This Project has been permitted through the RIDEM Office of Water Resources under the RI Freshwater Wetlands Act, and the RI Pollutant Discharge Elimination System (RIPDES) for General Permit for Storm Water Discharge Associated with Construction Activity (CGP).
- B. The Contractor shall abide by the plans and Terms and Conditions identified in RIDEM Freshwater Wetlands Permit #14-0079. A copy of this Permit is included herewith for reference:

REGULATORY REQUIREMENTS  
Section 01060

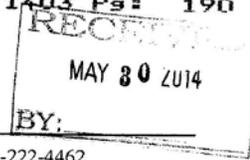
INST: 1127 Bk: 1403 Ps: 190



RHODE ISLAND  
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462



May 23, 2014

Town of Barrington  
c/o Peter A. DeAngelis, Jr.  
283 County Road  
Barrington, RI 02806

**Insignificant Alteration - Permit**

Re: Application No. 14-0079 in reference to the location below:

Approximately 320 feet north of Legion Way, approximately 560 feet northeast of the intersection of Legion Way and Middle Highway and continuing north to the East Bay Bike Path; at various locations within Veteran's Memorial Park, including along the eastern shore of Brickyard Pond, and east of the YMCA, Assessors Plat 24, Lots 2, 18, 46, and 96, Barrington, RI.

Dear Mr. DeAngelis:

Kindly be advised that the Department of Environmental Management's ("DEM") Freshwater Wetlands Program ("Program") has completed its review of your **Request for Preliminary Determination** application. This review included a site inspection of the above referenced property ("subject property") and an evaluation of the proposed upgrade of several existing trails within Veterans Memorial Park, including improvements to signage, resurfacing, repairs to eroded shoreline access points with construction of raised overlook platforms on the pond, and construction of a boardwalk wetland crossing, as illustrated and detailed on site plans submitted with your application. These site plans were received by the DEM on April 24, 2014.

Our observations of the subject property, review of the site plans and evaluation of the proposed project reveals that alterations of freshwater wetlands are proposed. However, pursuant to Rule 9.00 of the Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act (Rules), this project may be permitted as an **insignificant alteration** to freshwater wetlands under the following terms and conditions:

Terms and Conditions for Application No. 14-0079:

1. This letter is the DEM's permit for this project under the R.I. Fresh Water Wetlands Act, Rhode Island General Laws (RIGL) Section 2-1-18 et seq.
2. This permit is specifically limited to the project, site alterations and limits of disturbance as detailed on the site plans submitted with your application and received by the DEM on April 24, 2014. A copy of the site plans stamped approved by the DEM is enclosed. Changes or revisions to the project that would alter freshwater wetlands are not authorized without a permit from the DEM.

Office of Water Resources/Permitting Section/Tel.401-222-6820/Fax:401-222-3564



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# REGULATORY REQUIREMENTS

## Section 01060

Application No. 14-0079  
Page 2

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3. Where the terms and conditions of the permit conflict with the approved site plans, these terms and conditions shall be deemed to supersede the site plans.
4. You must notify this Program in writing immediately prior to the commencement of site alterations and upon completion of the project.
5. A copy of the stamped approved site plans and a copy of this permit must be kept at the site at all times during site preparation, construction, and final stabilization. Copies of this permit and the stamped approved plans must be made available for review by any DEM representative upon request.
6. Within ten (10) days of the receipt of this permit, you must record this permit in the land evidence records of the Town of Barrington and supply this Program with written documentation obtained from the Town showing this permit was recorded.
7. The effective date of this permit is the date this letter was issued. This permit expires on July 1, 2019.
8. Any material utilized in this project must be clean and free of matter that could pollute any freshwater wetland.
9. Prior to commencement of site alterations, you shall erect or post a sign resistant to the weather and at least twelve (12) inches wide and eighteen (18) inches long, which boldly identifies the initials "DEM" and the application number of this permit. This sign must be maintained at the site in a conspicuous location until such time that the project is complete.
10. Temporary erosion and sediment controls detailed or described on the approved site plans shall be properly installed at the site prior to or commensurate with site alterations. Such controls shall be properly maintained, replaced, supplemented, or modified as necessary throughout the life of this project to minimize soil erosion and to prevent sediment from being deposited in any wetlands not subject to disturbance under this permit.
11. Upon permanent stabilization of all disturbed soils, temporary erosion and/or sediment controls consisting of hay bales and/or silt fence must be removed.
12. You are responsible for the proper operation, maintenance and stability of any mitigative features, facilities, and systems of treatment and control that are installed or used in compliance with this permit to prevent harm to adjacent wetlands.
13. You are obligated to install, utilize and follow all best management practices detailed or described on the approved site plans in the construction of the project to minimize or prevent adverse impacts to any adjacent freshwater wetlands and the functions and values provided by such wetlands, until such time that you document that this responsibility has been assumed by another person or organization.
14. Please note that the Limit of Disturbance shall be confined to the limits of the existing trails for all work associated with selective pruning, spot repairs, and new signage. North of Legion Way, the Limit of Disturbance shall be confined to the new trail limit as shown on Sheet 2 of 7. In the

Office of Water Resources/Permitting Section/Tel.401-222-6820/Fax:401-222-3564

REGULATORY REQUIREMENTS

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locations of the repair to eroded bluffs, the line noted on the site plan on Sheet 4 of 7 as the "Approximate edge of slope/bluff at overlooks" shall be considered the Limit of Disturbance. At the new blue trail connection and boardwalk, the Limit of Disturbance shall be that area as shown in the trail and boardwalk details on Sheet 6 of 7.

Pursuant to the provisions in Rule 7.09 and Rule 11.04, as applicable, any properly recorded and valid permit is automatically transferred to the new owner upon sale of the property.

You are required to comply with the terms and conditions of this permit and to carry out this project in compliance with the Rules at all times. Failure to do so may result in an enforcement action by this Department.

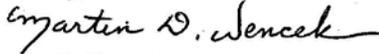
In permitting the proposed alterations, the DEM assumes no responsibility for damages resulting from faulty design or construction.

**Kindly be advised that this permit is not equivalent to a verification of the type or extent of freshwater wetlands on site. Should you wish to have the types and extent of freshwater wetlands verified, you may submit the appropriate application in accordance with Rule 8.03.**

This permit does not remove your obligation to obtain any local, state, or federal approvals or permits required by ordinance or law and does not relieve you from any duties owed to adjacent landowners with specific reference to any changes in drainage.

Please contact Claire Swift of this office (telephone: 401-222-6820 x 7418) should you have any questions regarding this letter.

Sincerely,



Martin D. Wencek, Permitting Supervisor  
Office of Water Resources  
Freshwater Wetlands Program

MDW/CVS/evs

Enclosure: Approved site plans

xc: Kevin M. Alverson, Kevin M. Alverson Landscape Architecture, LLC

RECEIVED FOR RECORD  
Jun 02, 2014 09:34:35A  
Barrington, R.I.  
Meredith J. DeSisto  
TOWN CLERK

## REGULATORY REQUIREMENTS

### Section 01060

- C. Contractor shall be responsible for all coordination with RIDEM and Owner for receipt of all necessary documentation and permits in accordance with stipulations of all environmental permits, prior to commencement of construction activities.
- D. A copy of the RIDEM Approved Plans and Permit Letter can be found through the RIDEM online Wetlands Permit Search: <https://www.ri.gov/DEM/wetlands/>

A copy of this Stamped Approved Plan and Permit must be kept on-site at all times throughout construction, and made available to regulatory staff for inspection upon request.

- E. RIDOT has approved a Categorical Exclusion (CE) for the subject project. A copy of this approval is provided herewith for reference:

REGULATORY REQUIREMENTS  
Section 01060

CATEGORICAL EXCLUSION DOCUMENTATION FORM

PROJECT TITLE:

RIFAP NO:

PROJECT LIMITS AND LOCATION MAP:

PROJECT PURPOSE AND NEED:

PROJECT DESCRIPTION:

DESCRIPTION OF SURROUNDING AREA:

PART I EXEMPT ACTION CATEGORICAL EXCLUSION

- Is the project an action listed within the Exempt Action CE's section of the Categorical Exclusion Agreement?  YES  NO
- If YES, the project qualifies for a Categorical Exclusion (CE). What Section of Type I Exempt Action CE's qualifies this project (1-17)?

PART II DOCUMENTED CATEGORICAL EXCLUSION

All of the following questions must be answered. Wherever the answer is YES, and as required, documentation must be attached that states the process has begun and the status of the process to satisfy the criteria for demonstrating that significant environmental effects will not result from this project. Close coordination with the Office of Environmental Programs will be essential to insure regulatory compliance. All process documentation for these questions will be completed before advertisement.

1. Is the project near historic properties, in an historic district, or in an area of known archaeological significance?  YES  NO

If Yes, document that the process has begun and the present status.

2. Does the project have the potential to involve a significant, publicly-owned park, recreational area, wildlife or waterfowl refuge?  YES  NO

If Yes, document that the process has begun and the present status.

**REGULATORY REQUIREMENTS**  
**Section 01060**

**CATEGORICAL EXCLUSION DOCUMENTATION FORM**

**PROJECT TITLE:** Town of Barrington, RI Veterans Memorial Park, Brickyard Pond Loop Trail

**RIFAP NO:** RTP LOCL (003)

3. Does the project have the potential to involve a publicly-owned park or recreational area that was established or improved with federal Land and Water Conservation Funds? YES  NO

If Yes, document that the process has begun and the present status.

4. Does the project have the potential to involve ROW acquisitions? YES  NO   
If YES, document that the process has begun and the present status.

5. Does the project have the potential to be within wetland jurisdiction? YES  NO   
Provide documentation for the determination and if appropriate, application status.

Attached RIDEM Insignificant Alteration Permit dated 5/23/14.

6. Does the project have the potential to affect any Federal or Rhode Island Endangered Species? YES  NO   
Provide documentation.

No effect determination 9/18/14.

7. Is the project listed in the approved Transportation Improvement Program (TIP)? YES  NO   
(Listing in the TIP acknowledges Air Quality Conformity)

FY 2013-2016 TIP page 1 TIP Tables, Recreational Trails Program.

Part III Based upon the above information and supporting documentation, as required, this project qualifies as a Categorical Exclusion at this time. The project manager will not advertise this project until all Part II processes have been completed and permits have been obtained, unless approved by the Chief Engineer of the Rhode Island Department of Transportation, with concurrence for the FHWA Division Administrator.

SUBMITTED BY: *Steven C. Church* DATE: 10/7/14  
Project Manager

APPROVAL: *P.A. Healey* DATE: 10/9/2014  
Peter A. Healey, P.E.  
Chief Civil/Engineer/Road Engineering

APPROVAL: *V. J. Palumbo* DATE: 10/9/14  
Vincent J. Palumbo, P.E.  
Managing Engineer/Road Engineering

**End of Section**

# REFERENCE STANDARDS AND DEFINITIONS

## Section 01095

### Part 1 – General:

#### 1.01 – Related Documents:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 1.02 – Definitions:

- A. General: Defined below are Terms utilized throughout these project specifications and Contract Documents. Additionally, basic contract definitions may be included in the Conditions of the Contract between Owner and Contractor.
- B. Definitions:
  1. Approved: The term "approved," when used in conjunction with the Owner's Representative's action on the Contractor's submittals, applications, and requests, is limited to the Owner's Representative's duties and responsibilities as stated in the Conditions of the Contract.
  2. Directed: Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the Owner's Representative, requested by the Owner's Representative, and similar phrases.
  3. Experienced: The term "Experienced", or "Experience" when used with the term "installer," means having a minimum of 5 previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of authorities having jurisdiction.
  4. Furnish: The term "furnish" means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
  5. Indicated: The term "indicated" refers to graphic representations, notes, or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the reader locate the reference. Location is not limited.
  6. Install: The term "install" describes operations at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying,

## REFERENCE STANDARDS AND DEFINITIONS

### Section 01095

working to dimension, finishing, curing, protecting, cleaning, and similar operations.

7. Installer: The term "installer" refers to the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.
  8. Project Site: The term "Project Site" is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
  9. Provide: The term "provide" means to furnish and install, complete and ready for the intended use.
  10. Regulations: The terms "regulations", "regulators", and "regulatory", include laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
  11. Testing Agencies: The terms "testing agency" or "testing agencies", refer to an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.
- C. Trades: Using terms 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 tradespersons of the corresponding generic name.
- D. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.
1. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to

## REFERENCE STANDARDS AND DEFINITIONS

### Section 01095

interfere with local trade-union jurisdictional settlements and similar conventions.

#### 1.03 – Specification Format and Content Explanation:

- A. Specification Format: These Specifications are organized, generally, into Sections and Divisions based on CSI's 16-Division format. Where variations exist between the format of these specifications and those of the Standard CSI Format, the organization of these Contract Documents shall take precedence. In all Project Records, Contractor shall refer to any specifications by the codifications utilized in these specifications.
  
- B. Specification Content: This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
  - 1. Abbreviated Language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
  
  - 2. Streamlined Language: These Specifications generally use the imperative mood and streamlined language. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.
  
  - 3. The words "shall be" are implied where a colon (:) is used within a sentence or phrase.

#### 1.04 – Industry Standards:

- A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
  
- B. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents.



## REFERENCE STANDARDS AND DEFINITIONS

### Section 01095

AISI	American Iron and Steel Institute 1101 17th St., NW Washington, DC 20036-4700	(202) 452-7100
ANSI	American National Standards Institute 11 West 42nd St., 13th Floor New York, NY 10036	(212) 642-4900
ASTM	American Society for Testing and Materials 1916 Race St. Philadelphia, PA 19103-1187	(215) 299-5400
FM	Factory Mutual Systems 1151 Boston-Providence Turnpike P.O. Box 9102 Norwood, MA 02062	(617) 762-4300
NEC	National Electrical Code (from NFPA)	
NECA	National Electrical Contractors Assoc. 3 Bethesda Metro Center, Suite 1100 Bethesda, MD 20814	(301) 657-3110
NFPA	National Fire Protection Assoc. One Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101	(617) 770-3000
UL	Underwriters Laboratories 333 Pfingsten Rd. Northbrook, IL 60062	(708) 272-8800

2. Federal Government Agencies: Names and titles of federal government standards, or Specification producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standards or Specification producing agencies of the federal government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

## REFERENCE STANDARDS AND DEFINITIONS

### Section 01095

OSHA Occupational Safety and Health Administration  
(U.S. Department of Labor)  
200 Constitution Ave., NW  
Washington, DC 20210

(202) 219-6091

#### 1.05 – Submittals:

- A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

#### **Part 2 - Products (Not Applicable)**

#### **Part 3 - Execution (Not Applicable)**

**End of Section**

# SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

## Section 01340

### Part 1 – General:

#### 1.01 – Requirements Included:

- A. Submit Shop Drawings, Product Data and Samples required by the Contract Documents.
- B. Shop Drawings:
  - 1. Drawings shall be presented in a clear and thorough manner.
  - 2. Shop Drawings and Details shall be identified by reference to sheet and detail shown on Contract Drawings, or Contract Specification Section and Subsection.
  - 3. Minimum Sheet Size: 8-1/2 inch by 11 inch.
- C. Product Data:
  - 1. Preparation:
    - a. Clearly mark each copy to identify pertinent products or models.
    - b. Product Data shall be identified by reference to sheet and detail shown on Contract Drawings, or Contract Specification Section and Subsection.
    - c. Show performance characteristics, capacities and efficiencies, as well as showing dimensions and clearances required.
    - d. Where applicable, show utility, wiring, or piping, etc., diagrams and controls as may be appropriate.
  - 2. Manufacturer's Standard Schematic Drawings and Diagrams:
    - a. Modify Drawings and Diagrams to delete information that is not applicable to the work.
    - b. Supplement standard information to provide information specifically applicable to the work.

# SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

## Section 01340

### D. Samples:

1. Office samples: Samples shall be of sufficient size and quantity to clearly illustrate:
  - a. Functional characteristics of the product, with integrally related parts and attachment devices.
  - b. Full range of color, texture and pattern.
2. Field Samples and Mark-ups: Contractor shall erect, at the project site, at a location acceptable to the Owner's Representative.
3. Size or Area: That specified in the respective Specification Section.
4. Fabricate each sample and mark-up complete and finished.
5. Remove mark-ups at conclusion of work or when acceptable to the Owner's Representative.

### 1.02 – Contractor Responsibilities:

- A. Review Shop Drawings, Product Data and Samples prior to submission.
- B. Determine and Verify:
  1. Field measurements.
  2. Field construction criteria.
  3. Catalog numbers and similar data.
  4. Conformance with Specifications.
- C. Coordinate each submittal with requirements of the work and of the Contract Documents.
- D. Notify the Owner's Representative in writing, at time of submission, of any deviations in the submittals from requirements of the Contract Documents, stating the difference in value between the Contract Requirements and those illustrated on the Shop Drawings submitted for review.
- E. No fabrication or work which requires submittals shall begin until submittals are reviewed and approved by Owner's Representative.

# SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

## Section 01340

### 1.03 – Owner’s Representative Duties:

- A. The Owner’s Representative will check and review Shop Drawings, Product Data, and Submittals only for conformance with the Design Concept and for compliance with information given in the Contract Documents. Review by the Owner’s Representative of submittals is only for general conformance with the design concept of the project and general compliance with the information in the Contract Documents. Any approval or denial of submittals is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be fabricated and correlated at the job site, fabrication processes and techniques of construction, coordination of his work with that of all other trades, and the satisfactory performance of his work to fulfill the requirements and intent of the Contract Documents. Such review will not relieve the Contractor from responsibility for errors of any sort in the Shop Drawings, nor for the proper coordination of any such submittal with all other work.
  
- B. Following review, the Owner’s Representative will affix a stamp and initials or signature indicating determinations made for each submittal in accordance with the following classifications:
  - 1. "Approved", indicates that the Submittal is Approved by the Owner’s Representative noting no exception to the intent of the Contract Documents. Fabrication or ordering of item may commence.
  
  - 2. "Approved with Changes Noted", indicates that the Submittal is Approved by the Owner’s Representative with minor corrections or additions noting no exception to the intent of the Contract Documents. No further review of submittal is required and item may be fabricated or ordered on basis of and following the corrections noted.
  
  - 3. "Revise and Resubmit" indicates that no fabrication may be commenced, and that the Contractor must resubmit the Submittal to the Owner’s Representative only after appropriate revisions are made to meet the intent of the Contract Documents.
  
  - 4. "Rejected" indicates the Submittal’s non-conformance with the Contract Requirements, or that too many corrections would be necessary to meet the intent of the Contract Documents. The Owner’s Representative will state the reasons for rejection.
  
- C. Following Review and Determinations made, Stamped Submittals are to be returned to the Contractor for their file, distribution, and/or for resubmission.

# SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

## Section 01340

### 1.04 – Contractor’s Submission Requirements:

- A. Make submittals promptly in accordance with reviewed schedule, and in such sequence as to cause no delay in the work or in the work of any other Contractor.
- B. No submittals will be accepted by the Owner’s Representative if transmitted via FAX Machine.
- C. Scheduling of Submittals: Scheduling of Submittals shall be the responsibility of the Contractor, and shall be so submitted in proper sequence, in order of appropriate lead-time of fabrication and priority of construction procedures, following a logical schedule of construction procedures. Such scheduling shall allow reasonable time for review, revisions, resubmission, and rechecking where required, until material submitted is acceptable to Owner’s Representative. To allow the Owner’s Representative adequate time for checking and processing, contractor shall provide three (3) weeks from the date of receipt of Submittals by the Owner’s Representative, to the mailing date of the Submittals returned to the Contractor by the Owner’s Representative. Such submittal schedule dates shall recognize the possibility of rejections and/or required resubmission. Such schedules shall be subject to change from time to time, as required, by mutual agreement of the Owner’s Representative and the Contractor.
- D. No work shall commence in the shop or on the job nor shall material be delivered to the site until pertinent Shop Drawings have been reviewed and approved by the Owner’s Representative.
- E. Product Specific Items, Equipment, or Materials: Specific manufacturers' names and catalog numbers are used herein to establish quality and design of a particular item. Where items, equipment, or materials in the Plans and Specifications reference a particular brand, manufacturer, or trade name, it is understood that a reviewed and approved equal product may be substituted by the Bidder or Contractor only following approval by the Owner’s Representative.
- F. If the Contractor proposes to use a material which deviates in any way from the detailed requirements of the Contract Documents, he shall inform the Owner’s Representative in writing of the nature of such deviations at the time the material is submitted for review. Contractor shall request a review of the deviation from the requirements of the Contract Documents. Proposed Deviated Material must be suitable for the intended use, and Contractor must provide evidence of this when the request is made, and prior to review by Owner’s Representative
  - 1. Evidence provided by Contractor shall lead to a reasonable certainty that the proposed substitution or deviation will provide a result at least equal in quality

## **SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

### **Section 01340**

to that specified. If, in the opinion of the Owner's Representative, the evidence presented by the Contractor does not provide a sufficient basis for such reasonable certainty, the Owner's Representative will reject such substitution or deviation without further investigation. The Contractor must then resubmit with a material which meets the Project Specifications.

- G. A Contractor or Subcontractor who carries the cost of a substituted product in his Bid with no prior review by the Owner's Representative, does so at his own risk. The Owner's Representative is in no way obligated to review nor allow a substitution to be furnished. The Contractor shall submit all requests for substitutions sufficiently ahead of need to cause no delay in the job because of the subsequent rejections and/or resubmissions.
  
- H. Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by the Contractor, notwithstanding review or acceptance of such substitution by the Owner or the Owner's Representative, unless such substitution was made at the written initiation of the Owner. Any additional cost for redesign of any components for a substituted product shall be borne by the Contractor unless such substitution was initiated in writing by the Owner.
  
- I. Only Shop Drawings or Submittals received from the General Contractor will be considered for review by the Owner's Representative. All Shop Drawings or Submittals prepared by Subcontractors shall be processed through the General Contractor in the same manner as stipulated in the paragraphs above. The General Contractor shall check all Shop Drawings and Submittals for conformity with the Contract Documents and particularly for field measurement and proper fit with adjoining work prior to submitting same to the Owner's Representative for review. Certification shall appear on each Shop Drawing or Submittal stating that the General Contractor has made this check. Terms such as "by others" or "not by (this supplier or Subcontractor)" shall not be used on Shop Drawings or Submittals; the Contractor shall state by whom related items are to be furnished, supplied, and/or installed. The Owner's Representative reserves the right to reject and return to the Contractor, without examination, any Shop Drawings or Submittals which have not been previously checked and certified by the General Contractor, or which in any way obviously are not in conformity with Contract Requirements.

# SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

## Section 01340

### J. Shop Drawings:

1. Shop Drawings shall show the design, dimensions, connections, and other details necessary to insure that they accurately interpret the contract Documents and shall show adjoining work in such detail as required to provide proper connection with same. Where adjoining work also requires Shop Drawings, they shall be submitted for review at the same time to ensure that connections can be accurately checked.
2. Submit two (2) legible blackline prints of each Shop Drawing with sufficient blank space (minimum 4 inches by 2 inches) for the Owner's Representative's annotations and review stamp, except as otherwise called for herein. The Shop Drawing(s) shall be delivered to the Owner's Representative in flat or roll form. The Owner's Representative will make annotations directly on the blackline, stamp same with appropriate review, and return original to the Contractor.
3. Shop Drawings marked "Approved" or " Approved with Changes Noted" shall be used by the General Contractor to obtain and distribute the prints necessary for fabrication and construction. They shall then be copied and returned to vendor or Subcontractor from whom they were originally received.
4. Shop Drawings marked "Revise and Resubmit" or "Rejected" shall be used by the General Contractor to make a record print and then copied and returned to vendor or Subcontractor who made the submittal for corrections required. Submittals marked "Rejected" or "Revise and Resubmit" shall not be sent to job site or used for shop fabrication.
5. This procedure shall be repeated until all corrections are made to the satisfaction of the Owner's Representative. The reviewed Shop Drawing(s) will be returned to the Contractor who in turn will be responsible for making prints in sufficient numbers for his own and his Subcontractors' use.

### K. Product Data:

1. Submit two (2) legible copies with sufficient blank space (minimum 4 inches by 2 inches) for the Owner's Representative's annotations and review stamp, except as otherwise called for herein.
2. Data sheets shall show illustrated cuts of item to be furnished, scale details, dimensions, capacity, performance, characteristics, efficiencies, wiring diagrams, controls, and other pertinent information, as applicable. If more than one type of size is shown on these sheets, the item being submitted shall be clearly denoted.

## SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

### Section 01340

3. Product Data Submittals marked "Approved" or " Approved with Changes Noted" shall be used by the General Contractor to obtain and distribute the prints necessary for fabrication and construction. They shall then be copied and returned to vendor or Subcontractor from whom they were originally received.
4. Product Data Submittals marked "Revise and Resubmit" or "Rejected" shall be used by the General Contractor to make a record print and then copied and returned to vendor or Subcontractor who made the submittal for corrections required. Submittals marked "Rejected" or "Revise and Resubmit" shall not be sent to job site or used for shop fabrication.
5. This procedure shall be repeated until all corrections are made to the satisfaction of the Owner's Representative. The reviewed Product Data Submittal(s) will be returned to the Contractor who in turn will be responsible for making prints in sufficient numbers for his own and his Subcontractors' use.

#### L. Samples:

1. Each Sample submitted by the Contractor shall clearly note the appropriate Specification Section, as noted in these specifications.
2. Samples and related certificates shall be delivered to location designated by Owner's Representative. Samples requiring testing should be submitted to testing laboratory with adequate time to provide approximately twenty (20) days following completion of testing, and from date of receipt of results by Owner's Representative to date of completion of review by Owner's Representative.
3. Each sample shall be labeled to indicate material, trade name, place or origin, name of producer, name of Contractor, name of project, and Specification section correlated to these specifications. Samples must be packaged and delivered in such a manner as to reach destination in good condition. Letter of transmittal shall accompany samples and shall include certificate as to compliance with Contract Requirements.
4. No materials submitted for review and/or testing shall be delivered to Project Site until reviewed and approved by Owner's Representative.
5. Review of samples shall be deemed to be general only, and shall not constitute waiver of Owner's rights to demand full compliance with Contract Requirements. After actual delivery of material to site, Owner's Representative will make such inspection and testing as deemed necessary, and may reject such materials,

# SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

## Section 01340

equipment and accessories for cause, even though such items may have been given general review.

6. When a sample has been designated "Approved" or "Approved with Changes Noted", no change in brand or make may be made unless manufacturer fails to make satisfactory delivery or the delivered material fails to conform with Contract Requirements.
7. If materials, equipment or accessories which fail testing have been incorporated in work, Owner shall have the right to demand their removal and replacement by proper materials, or to demand and secure such reparation by Contractor as is equitable at the Contractor's expense.
8. Samples designated as "Rejected" or "Revise and Resubmit" will be returned to Contractor upon request, and at his expense, within thirty (30) days after rejection.

M. Submittals, Unless Otherwise Noted, Shall Contain:

1. The date of submission and the dates of any previous submissions.
2. The project title and number.
3. Contract identification and/or Correlating Specification Section(s).
4. The names of: Contractor, Supplier, and Manufacturer
5. Field dimensions, clearly identified as such.
6. Relation to adjacent or critical features of the work or materials.
7. Applicable standards, such as ASTM or Federal Specification Numbers.
8. Identification of deviations from Contract Documents.
9. Identification of revisions on resubmittals.
10. An 4" x 2" blank space for Owner's Representative stamps.
11. Contractor's stamp, initialed or signed, certifying their review of submittal, and other pertinent information such as verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and of Contract Documents.

1.05 – Resubmission Requirements:

- A. Make any corrections or changes in the submittals required by the Owner's Representative and resubmit until they are denoted "Approved" or "Approved with Changes Noted" by the Owner's Representative.

# SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

## Section 01340

### B. Resubmitted Submittals:

1. Contractor shall revise initial drawings or data and resubmit as specified by the Owner's Representative on the returned initial submittal.
2. Contractor shall indicate any changes which have been made other than those requested by the Owner's Representative.

### C. Resubmitted Samples:

1. Contractor shall submit new samples as required by Owner's Representative on the returned initial submittal.

### 1.06 – Distribution:

- A. Contractor shall Distribute reproductions of Shop Drawings and copies of product data which carry the Owner's Representative stamp denoting "Approved" or "Approved with Changes Noted" to:
1. Job Site File.
  2. Record Documents File.
  3. Other Affected Contractors.
  4. Subcontractors.
  5. Supplier or Fabricator.
  6. As directed by the Owner's Representative

### 1.07 – Operation, Instruction, and Maintenance Manual:

- A. Two (2) bound copies of the Operation, Instruction, and Maintenance Manual shall be submitted to Owner's Representative for approval prior to beginning of Contract Closeout Procedures (See Section 01700 of this Project Manual). If the Manual is satisfactory, submit five (5) copies of the final manual as directed by Owner's Representative. If the Manual is not satisfactory, one (1) copy will be returned to the Contractor. When unsatisfactory Manuals are resubmitted, two (2) copies will again be required. Upon final acceptance by the Owner's Representative, submit five (5) bound copies of the final manual as directed by Owner's Representative.
- B. All elements and components of the equipment installed or furnished as part of the project shall be included in the Manual including a description of how the equipment or complete system works. Additionally, where a number of components are furnished to provide a complete system, the operation of the components as they relate to the complete system shall be described.

## **SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

### **Section 01340**

- C. The Manual shall include all necessary instruction for the maintenance and operation of the equipment installed or furnished as part of the project in accordance with the manufacturer's recommendations. The Manuals shall include, but not limited to the following:
1. Index or Table of Contents.
  2. A complete written description of the operation of the equipment.
  3. Clear and concise maintenance instruction including schedules and types of finishes.
  4. Detailed drawings.
  5. Plumbing and/or wiring diagrams and control schematics including connection diagrams, as appropriate.
  6. Complete parts lists including the specific part or identification number utilized by the manufacturer of the parts.
  7. Recommended spare parts list.
  8. Current parts price list.
  9. All calibrations and other data for future modifications, alterations or reconfigurations shall be completely indicated and described.
  10. Pages are to be numbered consecutively through all sections of the Manual.
  11. Shop Drawing submittal data.
- D. Only data pertaining to the specific equipment installed or furnished as part of the project shall be included.
- E. The Manual(s) shall be bound in a heavy gauge three (3) ring vinyl binder with a minimum of two (2) interior vinyl pockets, or similar binding approved by the Owner. The color of the manual front and back cover will be chosen by the Owner.
- F. The Manual(s) shall be identified by title on the front cover, back cover and spine and shall include the Name of Project, Name of Owner, Title of Manual (identifying type or name of equipment), and Project Completion Date.

**End of Section**

# SCHEDULE OF VALUES

## Section 01370

### Part 1 – General:

#### 1.01 – Related Requirements:

- A. Conditions of the Contract between Owner and Contractor.
- B. Section 01035 “Modification Procedures”
- C. Section 01700 “Contract Closeout”
- D. Section 01720 “Contract Record Documents”

#### 1.02 – Form and Content of Schedule of Values:

- A. Submit Schedule of Values in duplicate, as soon as practicable after notification of selection for the award of Contract, and prior to the Scheduled Pre-Construction Meeting and start of work.
- B. Submit typed schedule on AIA Form G703 – Application and Certificate for Payment, Continuation Sheet. Identify schedule by including AIA Form G702, filling all the blanks in the upper portion.
- C. Schedule shall list the installed value of the component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- D. Elements included on Schedule of Values shall follow the Codification and Table of Contents as noted in this Project Manual as the format for listing and identifying component items.
- E. For each major line item list sub-values of major products or operations, as appropriate or requested by Owner’s Representative, under the line.
- F. For the various portions of the work:
  - 1. Each item shall include a directly proportional amount of the Contractor’s overhead and profit.
  - 2. For items on which progress payments will be requested for stored materials, break down the value into:

**SCHEDULE OF VALUES**  
**Section 01370**

- a. The cost of materials, delivered and unloaded
  - b. The total installed value.
3. Submit schedule values of work prior to application for payment for such work.
- G. The sum of all values listed in the schedule shall equal the total Contract Sum.
- H. Revise schedule to list approved Change Orders, with each Application for Payment.

**End of Section**

**Part 1 – General:**

1.01 - Inspection and Tests:

- A. In addition to those components of the project specifically outlined in the Contract Documents for specialized testing and submittals, the Contractor shall not use any material or equipment in the work which has not been inspected and reviewed by reputable professionals qualified to review such materials and/or equipment. Ample time and opportunity shall be given the Owner's Representative for testing materials to be used in the work, should the Owner's Representative request additional testing. The Contractor shall promptly advise the Owner's Representative upon the placing of orders for materials so that arrangements may be made, if desired, for the testing of materials at the place of manufacture.
- B. The Owner may decide to have some or all of the materials inspected or tested as required. The Contractor shall furnish all samples, labor, materials and equipment necessary for the inspection and tests required and should anticipate possible delays caused by this testing and acceptance procedure. Scheduling shall be coordinated as necessary and the project schedule adapted, if needed.
- C. Seals and Pressure Testing: All piping, pumps and like equipment transporting liquid shall be first tested with water and then with the material they will carry when in final operation. The Contractor shall pay for all electric power and fuel necessary for the operation of all mechanical equipment prior to completion of the Contract. All equipment and appliances shall be subject to acceptance tests prior to final payment.
- D. The Owner's Representative or any person employed by him in connection with the work shall, at any time, have the right to enter upon the work and inspect the work and any materials being used in the work. Contractor shall provide ample time and facilities for such inspection. The contractor also shall provide all reasonable facilities for viewing the work by the owner or any representatives or Agencies having jurisdiction in regard to the work.

**QUALITY CONTROL**  
**Section 01400**

1.02 – Experience of Equipment Manufacturer:

- A. Whenever it is written that an equipment manufacturer must have a specified period of experience with his product, a manufacturer who does not meet with the specified experience period can be considered. However, such manufacturer shall only be considered if the equipment supplier or manufacturer is willing to provide a Bond or Cash Deposit for the duration of the specified time period which will guarantee replacement of that equipment in the event of failure.

**End of Section**

# TESTING LABORATORY

## Section 01410

### Part 1 – General:

#### 1.01 – Requirements Included:

- A. Unless otherwise noted or required to be conducted by third parties or the Contractor by these Contract Documents or other sections of these Specifications, Owner will employ and pay for the services of an independent testing laboratory, as recommended by the Owner's Representative, to perform specified testing.
  - 1. If testing (or additional testing) is required, Contractor shall cooperate with the laboratory to facilitate the execution of its required services.
  - 2. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the work of the Contract, in accordance with the requirements of the Contract Documents.
- B. Owner will employ services of an independent testing laboratory, as recommended by Owner's Representative to perform specified testing on any material which the Owner or Owner's Representative feels may not comply with Contract Document Requirements.
  - 1. If results of these tests show that material does not conform to the requirements of the Contract Documents, the cost of testing shall be borne by the Contractor.
  - 2. If results of these tests show the material does conform to the requirements of the Contract Documents, the cost of testing shall be borne by the Owner.

#### 1.02 – Qualification of Laboratory:

- A. Laboratory facilities, personnel, and materials must meet the "Recommended Requirements For Independent Laboratory Qualification", Published by the American Council of Independent Laboratories.
- B. Laboratory facilities, personnel, and materials must meet basic qualifications of appropriate ASTM testing requirements.
- C. Laboratory facilities and personnel, etc. shall be authorized to operate in the State, and municipality in which the project is located.
- D. Laboratory must submit a copy of Report of Inspection of Facilities made by materials referenced laboratory of National Bureau of Standards during the most recent tour of

## TESTING LABORATORY

### Section 01410

inspection, with memorandum of remedies of any deficiencies reported by the inspection.

- E. Testing Equipment: All Equipment must be calibrated at reasonable intervals by devices of accuracy traceable to either:
  - 1. National Bureau of Standards
  - 2. Accepted values of natural physical constants

#### 1.03 – Laboratory Duties:

- A. Laboratory and Personnel shall cooperate with Owner's Representative and Contractor and provide qualified personnel after due notice.
- B. Laboratory shall notify Owner's Representative promptly after review of Contractor's proposed design mixes for concrete and other material mixes which require control by the testing laboratory so that Owner's Representative can approve, disapprove or modify them.
- C. Laboratory and/or testing agency shall secure adequate quantities of representational samples of materials proposed to be used and which require testing. Laboratory must furnish incidental labor and facilities to obtain and handle samples at the project site or at the source of the product to be tested.
- D. Laboratory and/or testing agency shall perform specified inspections, sampling and testing of materials and methods of construction:
  - 1. Comply with specified standards.
  - 2. Ascertain compliance of materials with requirements of Contract Documents.
- E. Laboratory and/or testing agency Promptly notify Owner's Representative and Contractor of observed irregularities or deficiencies of work or products.
- F. All work will be checked as it progresses, but failure to detect defective work or materials shall in no way prevent later rejection when such defect is discovered. Failure to detect defective work shall not obligate Owner's Representative for final review.
- G. Laboratory and/or testing agency personnel shall promptly submit typed or legibly printed report of each test and inspection. Distribution of reports shall be as

## TESTING LABORATORY Section 01410

determined at a Preconstruction Meeting between the Owner's Representative, Contractor and Representative of the Testing Laboratory. Each report shall include:

1. Date Issued.
  2. Project Title and Number.
  3. Testing Laboratory Name, Address, Email and Telephone Number.
  4. Name, Title, and Signature of Laboratory Inspector.
  5. Date, Time, and Location of Sampling or Inspection.
  6. Record of Temperature and Weather Conditions.
  7. Identification of Product and Specification Section.
  8. Type of Inspection or Test.
  9. Results of Tests and Determination of Compliance with Contract Documents.
  10. Further Interpretation of Test Results, when requested by Owner's Representative.
- H. Laboratory and/or testing agency shall perform additional tests as required by Owner's Representative or Owner if there is cause for concern that a particular material may not comply with Contract Document Requirements.

### 1.04 – Limitations of Authority of Testing Laboratory:

- A. Laboratory Is Not Authorized To:
1. Release, revoke, alter or enlarge on requirements of Contract Documents.
  2. Approve or accept any portion of the work.
  3. Perform any duties of the Contractor.

### 1.05 – Contractor's Responsibilities:

- A. Use of testing services shall in no way relieve Contractor of responsibility to furnish materials and construction in compliance with Plans and Specifications.
- B. Contractor shall cooperate with laboratory personnel, and provide access to work and to manufacturer's operations.
- C. Contractor shall provide to the laboratory and the Owner's Representative for review, the preliminary design mix proposed to be used for concrete and other materials mixes which require control by the testing laboratory.
- D. Contractor shall furnish copies of product test reports as required.
- E. Contractor shall furnish all Incidental Labor and Facilities to:

## **TESTING LABORATORY**

### **Section 01410**

1. Provide access to work to be tested.
  2. Facilitate inspections and tests.
  3. Store and cure test samples, as required.
- F. Contractor must notify laboratory sufficiently in advance of operations to allow for laboratory assignments of personnel and scheduling of tests. Procedure shall be as determined at a Preconstruction Meeting between Owner's Representative, Contractor and Testing Laboratory Representative.
1. When tests or inspections cannot be performed after such notice, promptly notify Owner's Representative and reimburse Owner for laboratory personnel and travel expenses incurred due to Contractor's negligence. No claims for delays shall be allowed if work must be rescheduled due to the unavailability of laboratory personnel.
- G. Contractor shall employ and pay for the services of the same or a separate, equally qualified independent testing laboratory, approved by the Owner and Owner's Representative, to perform additional inspections, sampling and testing required for the Contractor's convenience or when initial tests indicate work does not comply with the requirements of the Contract Documents.

#### 1.06 – Specific Tests, Inspections and Methods Required:

- A. Refer to other Sections of the Specifications for specific Testing and Inspection requirements of materials.

**End of Section**

# CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

## Section 01500

### Part 1 – General:

#### 1.01 – Requirements Included:

- A. Contractor shall furnish, install and maintain construction facilities and temporary controls required for construction, as specified herein, and remove said construction facilities and temporary controls on completion of work.

#### 1.02 – Regulatory Agencies:

- A. Contractor shall comply with all Federal, State and Local Codes, Laws, Ordinances and Regulations and with all pertinent utility company requirements.

### Part 2 – Products:

#### 2.01 – Materials, General:

- A. Material may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.
- B. Contractor shall coordinate any and all interruptions of permanent utilities with utility companies and affected users.

#### 2.02 – Temporary Sanitary Facilities:

- A. Contractor shall provide sanitary facilities in compliance with local, state, and federal laws and regulations. Such facilities shall be properly secluded from public view.
- B. Contractor shall service, clean and maintain facilities and enclosures.

#### 2.03 – Hoisting Facilities:

- A. Contractor shall provide hoisting facilities as required for the vertical movement of all materials.
- B. Contractor and Facilities or Materials shall comply with OSHA, and all local, state, and federal regulations.
- C. Contractor shall maintain all facilities in compliance with the law.

# CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

## Section 01500

### 2.04 – Temporary Barriers:

- A. Contractor must provide barricades, guards, coverings, lighting, warning lights and signs as required by Federal, State, and Local Regulations to protect obstructions in streets and sidewalks, open trenches and pits, hazards and like items. Mark and light barricades and guards as required.
- B. The Contractor shall, at times, employ watchmen when such action is required to prevent injury or damage to the public. The contractor shall indemnify and protect the Owner from any damage or injury caused by any act or neglect of the Contractor or his Subcontractors.
- C. Contractor shall comply with OSHA and all local, state, and federal regulations with regard to standards and requirements for guardrails, openings and stairways.

### 2.05 – Protection:

- A. The contractor shall at all times protect excavations, trenches, new construction, old construction, all job materials, apparatus and fixtures from rain, wind, snow, ice, dust, dirt, mud, ground water, back-up or leakage of sewers, drains, or other piping and from water of any other origin and shall remove promptly any accumulation of the above. Contractor shall provide and operate all pumps, piping and other equipment necessary to this end at no additional cost to Owner.
- B. Contractor shall thoroughly protect all completed work and all stored materials.
- C. When needed, Contractor shall provide boards, cloths, planks, waterproof paper, canvas or other approved protection and use as necessary to prevent any damage.
- D. Contractor must provide protective measures to prevent damage to lawns, trees and shrubs specified to remain after project is complete.
- E. At the end of each day's work, Contractor shall protect such work that may be susceptible to damage by the elements.
- F. Contractor shall replace or rectify work or materials damaged by workmen, by the elements or by any other cause, to the satisfaction of the Owner's Representative at no additional expense to the Owner.
- G. Contractor shall repair streets, curbs, sidewalks, poles, grass, shrubs, trees or other existing site features, if disturbed by construction operations or contractor personnel. Contractor must leave all existing site features specified to remain in as good condition as they were before being disturbed.

# CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

## Section 01500

- H. Do not allow workmen, including those of any Subcontractor or supplier to mark finished surfaces with marking pens or other such devices which are not readily erasable.

### 2.06 – Traffic:

- A. The Contractor shall at all times keep roads and sidewalks open for pedestrian and vehicular traffic. The Contractor shall bridge or construct plank crossing over trenches where required or as directed by the Owner's Representative.
- B. When portions of a travel way are made dangerous for the movement of vehicles or pedestrians, the Contractor shall employ a sufficient number of uniformed police officers, flagmen, or traffic men to direct the traffic safely through the area as required by Federal, State, and Local Regulations. If such conditions exist at the close of the working day, a watchman and a sufficient number of flagmen or police officers shall be assigned by the Contractor to direct traffic at night. The work must be planned to avoid such conditions whenever possible. Cost for traffic control shall be included in the Base Bid and born by the Contractor.

### 2.07 – Security:

- A. The Contractor shall take all precautions necessary to prevent loss or damage caused by vandalism, theft, burglary, pilferage, or unexplained disappearance of property of the Owner or this Contractor, whether or not forming part of the work, located within the limits of work. The contractor shall have full responsibility for the security of such property located in such areas and shall reimburse the Owner for any such loss, damage or injury, except such as may be directly caused by agents or employees of the Owner.

### 2.08 – Project Access:

- A. Contractor shall provide access from adjacent road, as approved by the Owner, and maintain such access in a safe and neat condition throughout the construction process. Construction Access, as coordinated with Owner, shall be protected throughout construction through use of RIDOT Standard 9.9.0 Construction Access. Contractor shall inspect Construction Access Regularly, and repair access as needed to ensure access meets the standards of RIDOT Standard 9.9.0.
- B. Storage areas shall be as directed and approved by the Owner. Storage areas shall be protected in accordance with Drawings and General Provisions of Contract, including General and Supplementary Conditions, Section 01060 of these Specifications, and Division 2 Specification Sections as they apply to work of this Section.

# CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

## Section 01500

### 2.09 – Temporary Controls:

- A. Erosion and Sediment Control: Sufficient precautions shall be taken during construction to minimize the run-off of polluting substances such as silt, clay, soils, fuels, oils, calcium chloride or other polluting materials harmful to humans, or other life, into supplies and surface waters of the State as required by Federal, State and Local Regulations. Contractor shall abide by all local, state, and federal regulations and all components of the approved Soil Erosion and Sediment Control Plan.
  - 1. Contractor shall ensure all Soil Erosion and Sediment Control Devices, such as Haybales, Silt Fence, and Silt Socks are installed in accordance with Contract Drawings, approved Soil Erosion and Sediment Control Plan, and other pertinent sections of these Specifications.
  
- B. Control of Snow and Ice: Contractor shall remove snow and ice as required for safety, access, and proper execution of work. Remove snow and ice build-up which endanger structures during construction. Cost for snow and ice removal shall be included in the Base Bid and born by the Contractor. No extra payment will be made for such work.
  
- C. Dust Control: During periods of dry weather, water, Contractor shall spread calcium chloride or otherwise treat unpaved areas, within contract limits in accordance with all local, State and Federal Regulations, and the approved Soil Erosion and Sediment Control Plan, which may be source of dust nuisance. Treatment shall be of sufficient effectiveness to allay dust nuisance.
  
- D. Trash Control:
  - 1. Contractor shall maintain premises and properties free from accumulation of waste, debris and rubbish caused by operations.
  - 2. Contractor must provide sufficient trash receptacles around site.
  - 3. Contractor shall collect and deposit debris in appropriate and legal collection facilities.
  - 4. Contractor shall remove all debris from the job site on a regular basis.
  
- E. Hazards Control:
  - 1. Contractor shall store volatile wastes in sealed covered containers, approved for storage of such wastes, in accordance with all local, State, and Federal regulations, and remove wastes from premises daily.

## CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

### Section 01500

2. Contractor must prevent accumulation of wastes which create hazardous conditions.
3. Contractor shall provide adequate ventilation during use of volatile or noxious substances.
4. Should any hazardous waste be caused by the Contractor, the Contractor shall correct the situation in the proper, legal manner and remove and dispose such waste at no loss or cost to the Owner.

#### F. Cleaning and Disposal:

1. Contractor shall conduct cleaning and disposal operations in compliance with all Local, State, and Federal Ordinances and Anti-Pollution Laws.
2. Contractor must not burn or bury rubbish or waste materials on project site.
3. Contractor must not dispose of volatile wastes such as mineral spirits, oil or paint thinner, etc., in storm or sanitary drains, or waters of the State.
4. Contractor must not dispose of wastes into streams or waterways.
5. Contractor shall maintain cleaning procedures until project or portion thereof is occupied by Owner.

#### G. Storage Areas:

1. Contractor shall coordinate the allocation of storage areas to the various trades and Subcontractors.
2. All storage areas shall be approved by the Owner's Representative.
3. Contractor must maintain all storage areas in a clean condition at all times.
4. Field houses, storage sheds, and work facilities for workmen shall be the responsibility of the Contractor or their Sub-Contractors and shall be removed by them following construction procedures for each task these facilities may be needed.

# CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

## Section 01500

### Part 3 – Execution:

#### 3.01 – General:

- A. Contractor must maintain and operate temporary utility systems, where necessary, to assure continuous service. Such temporary utility systems must be modified and extended by the Contractor as work progress requires.

#### 3.02 – Length of Trench to be Opened:

- A. The length of trench to be opened at any time, from the point where ground is being broken to completed backfill, and also the amount of space in streets or public and private lands occupied by equipment, trench and supplies, shall not exceed the length or space considered reasonably necessary for installation of work.
- B. In determining the length of open trench or spaces for equipment, materials, supplies, and other necessities: The Contractor will consider the nature of the lands or streets where work is being done, types and methods of construction and equipment being used, inconvenience to the public or to private parties, and possible dangers and other proper matters. All work must be constructed with a minimum of inconvenience and danger to the public and all other parties concerned.
- C. Whenever any trench obstructs pedestrian and vehicular traffic in or to any public street, private driveway or property entrance, or on private driveway or property entrance, or on private property, the Contractor shall take such means as may be necessary to maintain pedestrian and vehicular traffic and access. Until such time as the work may have attained sufficient strength to support backfill, or if for any other reason it is not expedient to backfill the trench immediately, the Contractor shall construct and maintain suitable plank crossings and bridges to carry essential traffic in or to the street, driveway, or property in question as specified or directed.
- D. Contractor shall furnish and maintain all suitable signs, lights, and such required items to direct traffic.
- E. The Contractor must keep streets and premises free from unnecessary obstructions, debris and all other materials. The Owner's Representative may, at any time, order all equipment, materials, surplus from excavations, debris and all other materials lying outside that length of working space promptly removed. Should the Contractor fail to remove such material within twenty four (24) hours after notice to remove the same, the Owner's Representative may cause any part or all of such materials to be removed by such persons as he may employ, at the Contractor's expense and may deduct the cost thereof from payment which may be or may become due to the Contractor under the Contract. In special cases, where public safety urgently demands it, the Owner's Representative may cause such materials to be removed without prior notice.

# CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

## Section 01500

### 3.03 – Interference with Existing Structures:

- A. Whenever it may be necessary to cross or interfere with existing culverts, drains, water pipes or fixtures, guardrails, fences or other such structures needing special care, due notice shall be given by the Contractor to the Owner's Representative and to the various public and private agencies or individuals responsible for the utility or structure that is interfered with.
- B. Whenever required, all objects shall be strengthened by the Contractor to meet any additional stress that the work herein specified may impose upon it. Any damage caused shall be thoroughly repaired by the Contractor at their own expense. The entire work shall be the responsibility of the Contractor. All damaged items of work or items required to be removed and replaced or repaired by the Contractor to the complete satisfaction of the property Owners and/or the Owner's Representative, shall be repaired or replaced at no additional expense to the Owner.

### 3.04 – Removal of Water and Protection from Flooding:

- A. The Contractor shall construct and maintain, at no additional expense to the Owner, all pumps, drains, well-points or any other facility for the control and collection of groundwater and/or surface water and provide all pumps and piping for the removal of water from the trenches and excavations so that all trenches and excavations may be kept at all times free from water and so that all construction work may be performed in dry conditions.
- B. Any damage resulting from the failure of the dewatering operations of the Contractor and any damage resulting from the failure of the Contractor to maintain the areas of all work in a suitable dry condition shall be repaired by the Contractor as directed by the Owner's Representative at no additional expense to the Owner.
- C. The Contractor's pumping and dewatering operations shall be carried out in such a manner as to prevent damage to existing structures and utilities and the contract work and so that no loss of ground will result from these operations. Precautions shall be taken by the Contractor to protect new and existing work and/or to maintain satisfactory progress.
- D. All pipelines or structures not stable against uplift during construction or prior to completion shall be thoroughly braced or otherwise protected by the Contractor.
- E. Water from the trenches, excavations, and drainage operations shall be disposed of by the Contractor in such a manner as will neither cause public nuisance nor cause injury to public health nor to public or private property nor to the work completed nor to

# **CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

## **Section 01500**

work in progress. No extra payment will be made for the removal of water, protection from flooding, drainage work, diversion of existing water courses and such other work, but compensation therefore shall be considered as having been included in the prices stipulated for the appropriate items of work as listed in the Base Bid.

### 3.05 – Removal of Construction Facilities and Temporary Controls:

- A. Contractor shall completely remove temporary materials and equipment when their use is no longer required.
- B. Upon completion of work of all trades and before final acceptance of entire project, each trade shall remove, at own expense, all wiring, appurtenances, and accessories used in performance of its respective work.
- C. Temporary sheds, utilities, barricades, signs and other appurtenances related to execution of the work, and not incorporated in the permanent construction, shall be completely removed by the Contractor from the site prior to acceptance of work by Owner.
- D. Contractor shall clean and repair any and all damage caused by temporary installations or use of temporary facilities.

**End of Section**

# MATERIAL AND EQUIPMENT

## Section 01600

### Part 1 – General:

#### 1.01 – Requirements Included:

- A. Material and Equipment Incorporated Into the Work:
  - 1. Shall conform to applicable Specifications and Standards.
  - 2. Shall comply with size, make, type and quality specified or as specifically reviewed by the Owner’s Representative.
- B. Manufactured and Fabricated Products:
  - 1. Products shall be designed, fabricated, and assembled in accordance with the best engineering and shop practices and Industry Standards.
  - 2. Like parts of duplicate units shall be manufactured to standard sizes and gages, to be interchangeable.
  - 3. Two (2) or more items of the same kind shall be identical and manufactured by the same manufacturer.
  - 4. Products shall be suitable for service conditions.
- C. Equipment capacities, sizes, and dimensions shown or specified shall be adhered to unless variations are specifically reviewed and approved by Owner’s Representative.
- D. Contractor shall not use material or equipment for any purpose other than that for which it is designed or is specified.

#### 1.02 – Manufacturer's Instructions:

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, Contractor shall obtain and distribute copies of such instructions to parties involved in the installation, including two (2) copies to Owner’s Representative.
- B. Contractor shall maintain one (1) set of complete instructions at the job site during installation and until completion. Copies of all instructions shall be included in final Contract Record Documents, as assembled by the Contractor.

## **MATERIAL AND EQUIPMENT**

### **Section 01600**

- C. Contractor shall handle, install, connect, clean, prepare, acclimatize, and adjust products in strict accord with such instructions and in conformity with specified requirements.
- D. Should job conditions or specified requirements conflict with manufacturer's instructions, Contractor shall consult with Owner's Representative for further instructions.
- E. Contractor shall not proceed with work without clear instructions.
- F. Contractor shall perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

#### 1.03 – Transportation and Handling:

- A. Contractor must arrange deliveries of products in accordance with construction schedules, and coordinate appropriately so as to avoid conflict with work and conditions at the site and when two (2) or more trades, Contractors or suppliers are involved.
- B. All materials and equipment shall be transported on legally approved conveyances as required or recommended by the respective manufacturer or supplier.
- C. All products shall be delivered in undamaged condition, in manufacturer's original containers or packaging, and with identifying labels intact and legible.
- D. Contractor shall receive and handle all materials and equipment, at the project site, by conveyances or methods as recommended by the respective manufacturer or supplier to prevent damage to products.
- E. Immediately on delivery, Contractor shall inspect shipments to assure compliance with requirements of Contract Documents and reviewed submittals, and that products are properly protected and undamaged.
- F. Contractor shall remove from the site any material or item of equipment damaged during the transportation or handling process and immediately replace at no additional cost to the Owner.

# MATERIAL AND EQUIPMENT

## Section 01600

### 1.04 – Storage and Protection:

- A. Products shall be stored in accordance with manufacturer's instructions with seals and labels intact and legible.
- B. Contractor shall store products subject to damage by the elements in weather tight enclosures.
- C. Contractor shall take appropriate measures to maintain temperature and humidity of materials within the ranges required by manufacturer's instructions.
- D. Contractor shall maintain all storage areas in a clean and orderly condition at all times.

### 1.05 – Exterior Storage:

- A. Contractor shall store fabricated products above the ground, on blocking and skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, and provide adequate ventilation to avoid condensation.
- B. Loose granular materials shall be stored in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. Contractor shall arrange storage in a manner to provide easy access for inspection. Contractor shall make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.
- D. Contractor must immediately replace any material or item of equipment damaged due to inadequate storage protection at no additional cost to the Owner.

### 1.06 – Protection after Installation:

- A. Contractor shall provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove Protections only when they are no longer needed.

## **MATERIAL AND EQUIPMENT**

### **Section 01600**

#### 1.07 – Certificates of Conformance and Manufacture:

- A. In addition to other requirements specified therein, the Contractor shall furnish to the Owner's Representative, in the manner as directed, three (3) notarized certificates of conformance and manufacture that all materials and/or equipment to be furnished under this Contract meets the Specification Requirements. When directed, each shipment of material shall be accompanied by the manufacturer's notarized certificates of conformance and manufacture. Unless otherwise specified, all testing of materials shall be provided by the Contractor at no additional expense to the Owner.
- B. Each manufacturer's certificate shall be endorsed or accompanied by the Contractor's certificate that the material certified by the manufacturer will be the material incorporated in the work.

**End of Section**

# **SUBSTITUTIONS**

## **Section 01631**

### **Part 1 – General:**

#### 1.01 – Related Documents:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 1.02 – Summary:

- A. This Section includes administrative and procedural requirements for handling requests for substitutions made after award of the Contract.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Section 01340 “Shop Drawings, Product Data and Samples”
  - 2. Section 01600 “Materials and Equipment”

#### 1.03 – Definitions:

- A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents that are proposed by the Contractor after award of the Contract are considered to be requests for substitutions. The following are not considered to be requests for substitutions:
  - 1. Substitutions requested during the bidding period, and accepted by Addendum prior to award of the Contract, are included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
  - 2. Revisions to the Contract Documents requested by the Owner or Owner’s Representative.
  - 3. Specified options of products and construction methods included in the Contract Documents.
  - 4. The Contractor’s determination of and compliance with governing regulations and orders issued by governing authorities.

## **SUBSTITUTIONS**

### **Section 01631**

#### 1.04 – Submittals:

- A. Substitution Request Submittal: The Owner's Representative will consider requests for substitution if received within 14 days after commencement of the Work. Requests received more than 14 days after commencement of the Work may be considered or rejected at the discretion of the Owner's Representative.
1. Contractor shall submit copies of each request for substitution for consideration to the Owner's Representative. Submit requests in the form and according to procedures required for change-order proposals.
  2. Contractor shall identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers for reference.
  3. Contractor shall provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
    - a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors, that will be necessary to accommodate the proposed substitution.
    - b. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as performance, weight, size, durability, and visual effect.
    - c. Product Data, including Drawings and descriptions of products and fabrication and installation procedures.
    - d. Samples, where applicable or requested.
    - e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
    - f. Cost information, including a proposal of the net change, if any in the Contract Sum.
    - g. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.



## **SUBSTITUTIONS**

### **Section 01631**

may include compensation to the Owner's Representative for redesign and evaluation services, increased cost of other construction by the Owner, and similar considerations.

7. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
  8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.
  9. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.
  10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
- B. Where a proposed substitution involves more than one prime contractor, each contractor shall cooperate with the other contractors involved to coordinate the Work, provide uniformity and consistency, and assure compatibility of products.
- C. The Contractor's submittal and the Owner's Representative's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

### **Part 3 – Execution (Not Applicable)**

**End of Section**

# CONTRACT CLOSE-OUT

## Section 01700

### Part 1 – General:

#### 1.01 – Requirements Included:

- A. Comply with requirements stated in conditions of the Contract and in Specifications for administrative procedure in closing out the work.

#### 1.02 – Substantial Completion:

- A. Substantial Completion: As defined by the AIA, and defined herein in accordance with these Specifications, “Substantial Completion” is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or use the Work or a portion thereof for its intended use.
- B. When Contractor considers the work is substantially complete, he or she shall submit to Owner’s Representative for review:
  - 1. A written notice that the work or designated portion thereof is “Substantially Complete”.
  - 2. A list of items to be completed or corrected prior to achievement of Final Completion (to be referred to as “Punch List”).
- C. Within a reasonable time after receipt of such notice, Owner’s Representative will review the work to determine the status of completion.
- D. Should Owner’s Representative determine that the work is *not* “Substantially Complete”:
  - 1. Owner’s Representative will promptly notify the Contractor in writing, giving the reasons therefore.
  - 2. Contractor shall remedy the deficiencies in the work and send a second written notice of substantial completion to the Owner’s Representative.
  - 3. Owner’s Representative will again review the work.
- E. When Owner’s Representative concurs that the work is substantially complete, he will:

## **CONTRACT CLOSE-OUT**

### **Section 01700**

1. Prepare a Certificate of Substantial Completion accompanied by Contractor's list of items to be completed or corrected (Punch List), as verified and amended by the Owner's Representative.
2. Submit the Certificate to Owner, Contractor, and Manufacturer (as may be appropriate) for their written acceptance of the responsibilities assigned to them in the Certificate.

#### 1.03 – Final Review:

- A. When Contractor considers the work is complete, he shall submit written certification that:
  1. Contract Documents have been reviewed.
  2. Work has been inspected for compliance with Contract Documents.
  3. Work has been completed in accordance with Contract Documents, including completion of all Punch List Items.
  4. Equipment and systems have been tested in the presence of the Owner's Representatives and are operational.
  5. All Work is complete and ready for final review.
- B. Owner's Representative will make final review to verify that status of completion with reasonable promptness after receipt of such certification.
- C. Should Owner's Representative consider that the work is incomplete or defective:
  1. Owner's Representative will promptly notify the Contractor in writing, listing the incomplete or defective work.
  2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Owner's Representative that the work is complete.
  3. Owner's Representative will again review the work.
- D. When the Owner's Representative finds that the work is acceptable under the Contract Documents and that all Punch List Items have been accomplished to the

## CONTRACT CLOSE-OUT

### Section 01700

Owner's Representative's satisfaction, he or she shall request the Contractor to make close-out submittals.

#### 1.04 – Fees for Additional Reviews:

- A. Should Owner's Representative perform additional reviews due to failure of the work to comply with the claims of status of completion made by the Contractor:
  - 1. Owner will compensate Owner's Representative for such additional services.
  - 2. Owner will deduct the amount of such compensation from the final payment to the Contractor.

#### 1.05 – Contractor's Close-Out Submittal to Owner's Representative:

- A. Operation, Instruction, and Maintenance Manual: Contractor shall provide bound copies of the Operation, Instruction, and Maintenance Manual, in accordance with Section 01340 of these Specifications.
- B. Operating and Maintenance Data:
  - 1. Contractor shall instruct the Owner's Personnel with regard to equipment, systems and operating specialties which are installed as part of this project.
  - 2. Contractor shall submit brochures indicating operating instructions and maintenance schedules for all equipment, systems, operating devices and specialties.
  - 3. Contractor shall submit detailed maintenance methods and schedules for all materials and equipment provided in this project.
- C. Warranties, Guarantees and Bonds: In addition to the Warranty and Guarantee Requirements of the General Conditions, provide all other guarantees, bonds, affidavits, and certifications required throughout the Specifications.
- D. Contractor shall provide all spare parts and maintenance materials to Owner, unless otherwise specified.

#### 1.06 – Final Adjustment of Accounts:

- A. Submit a Final Statement of Accounting to Owner's Representative.

**CONTRACT CLOSE-OUT**  
**Section 01700**

1. Statement shall reflect all adjustments to the Contract Sum, including:
    - a. The original Contract Sum.
    - b. Additions and deductions resulting from:
      - i. Previous Change Orders.
      - ii. Allowances
      - iii. Unit Prices
      - iv. Deductions for non-corrected work
      - v. Penalties and Bonuses
      - vi. Deductions for Liquidated Damages
      - vii. Deductions for Re-inspection Payments
      - viii. Other adjustments
  2. Total Contract Sum, as adjusted.
  3. Previous Payments
  4. Sum Remaining Due
- B. Owner's Representative will prepare a Final Change Order reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.07 – Final Application for Payment:

- A. Contractor shall submit the Final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

**End of Section**

# SITE CLEARING AND PREPARATION

## Section 02100

### Part 1 – General:

#### 1.01 – Related Documents:

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this Section.
- B. This portion of the specifications shall conform to Section 201: Site Preparation of the *Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, 2004 Edition*, as amended by the RIDOT, and as amended as follows:
  - a. Delete Section 201.04 - Method of Measurement
  - b. Delete Section 201.05 - Basis of Payment

#### 1.02 – Description of Work:

- A. Provide all materials, equipment and labor necessary to complete the work as indicated on the Drawings or as specified herein.
- B. The principal work of this Section includes, but may not be limited to the following:
  - 1. Site clearing
  - 2. Unclassified Excavation
  - 3. Sawcutting existing pavement
  - 4. Pavement removal
  - 5. Dust control
  - 6. Root Zone Protection
  - 7. Tree Bark Protection
  - 8. Pruning

#### 1.03 – Regulatory Requirements:

- A. Conform to applicable codes for disposal of debris.
- B. Refer to Section 01060 of these Specifications. Contractor shall abide by all stipulations outlined in environmental permits of this project.
- C. Contractor to verify location of all utilities, both underground and overhead, before excavation begins in accordance with the “Dig Safe Program Law” enacted by the Rhode Island legislature and by calling 811 or 888-DIG-SAFE and individual utility companies. Excavation shall be in accordance with all statutes, ordinances, rules and

# SITE CLEARING AND PREPARATION

## Section 02100

regulations of any Town, State or Federal agency that may be applicable. Any damage to existing utilities shall be the Contractors responsibility.

### Part 2 – Products:

#### 2.01 – Calcium Chloride for Dust Control:

- A. Calcium chloride shall only be utilized when necessary for Dust Control, and shall meet the requirements of RIDOT Standard Specifications, as amended, and all environmental regulations and permits applicable.
- B. Calcium chloride shall have weights marked on the shipping containers to be used, or if directed by Owner's Representative, scales shall be furnished by and at Contractor's expense to measure calcium chloride by the ton.

#### 2.02 – Snow Fencing for Root Protection:

- A. Bright colored synthetic snow fencing, erected with 8' interval wood stakes or steel posts. Conform to RIDOT Standards 51.1.1 and 51.2.0

#### 2.03 – Tree Bark Protection:

- A. Protect trees which fall within or immediately adjacent to the temporary limit of disturbance as indicated on plans.
- B. Wood Framing:  
Wood Framing shall conform to RIDOT Standard 51.1.0 and consist of nominal lumber 8 feet in length; the width and thickness shall be 2" x 4" but may vary from 2" x 2" to 2" x 6", depending on diameter of tree
- C. Strapping:  
Strapping shall conform with RIDOT Standard 51.1.0, and consist of Single Strand 9 gauge steel wire or ½" strapping stapled to each piece of wood.

### Part 3 – Execution:

#### 3.01 – Protection:

- A. Contractor shall protect plant growth and features remaining as final landscaping. All existing vegetation (trees, shrubs, grasses, etc.) to remain shall be protected from injury. Individual trees and shrubs to be saved within or immediately adjacent to the designated work area shall be adequately protected by Contractor as part of this Contract. Protect existing lawn areas not to be disturbed by snow fencing similarly as

## SITE CLEARING AND PREPARATION

### Section 02100

trees and shrubs, and as shown in RIDOT Standard 51.1.1. Remove all protective barriers following construction procedures as directed by Owner

- B. Existing vegetation, not called out to be removed and disposed, not adequately protected and damaged during construction shall be replaced with plants equal to or better than existing by the Contractor at no additional cost to the Owner. Contractor shall employ licensed Arborist to carefully prune branches in the way of construction. Only approved methods and tools will be permitted. Use of axes for trimming or spurs for climbing will not be permitted.
- C. Contractor shall protect all benchmarks and existing work from damage or displacement.

#### 3.02 – Site Clearing (General):

- A. Contractor shall clear areas required for access to site and execution of work as designated on Plans.
- B. Contractor shall establish Limits of Disturbance and place silt control as necessary (see sections 01060, 01500, and 02270 of this Project Manual).
- C. Contractor shall clear designated areas of all stumps, roots and other objectionable material, remove such material from the site, and dispose of material in legal manner. Stumps including root system shall be removed to minimum six (6) inches below finish grade, where stump falls within landscape areas. Stumps including root system of plants designated to be removed shall be removed entirely where they fall within designated pavement and weed control areas. Do not disturb root systems of existing trees to remain.
- D. Any poison ivy, Bittersweet, Japanese Knot Weed, Bull Briar or other noxious weeds remaining in cleared areas shall receive a foliar spray of herbicide approved by regulatory authorities for use in aquatic sites. This work shall be conducted by the Contractor or their Subcontractor. Any herbicides, pesticides, or similar controlled chemicals/substances shall be applied only by licensed technician according to State Regulations.
- E. Contractor shall remove all debris not including existing topsoil, from this work to an off-site location, and dispose of legally.

#### 3.03 – Stripping Of Topsoil:

- A. Contractor shall not mix topsoil with subsoil or other materials.

## SITE CLEARING AND PREPARATION

### Section 02100

- B. Unless specified by the Owner's Representative, or found to be unsuitable, Contractor shall not remove existing topsoil from the site.
- C. All retained/stockpiled existing topsoil shall be redistributed on site by Contractor where topsoil is proposed in accordance with these contract documents.

#### 3.04 – Saw Cutting:

- A. When required, Contractor shall cut pavement and/or concrete structures to the full depth of the course or courses. In removing any existing pavement, top course and/or base course, or combination thereof, the sections to be removed shall be cut to the neat lines shown on the Plans or as directed by the Owner's Representative. Portions of remaining pavements injured or destroyed by the Contractor's work shall be replaced by the Contractor without additional compensation. Saw cuts shall be neat and straight to the approval of the Owner. Additional saw cuts, to the approval of the Owner's Representative, shall be made at no additional cost when the initial cuts are unacceptable.

#### 3.05 – Pavement Removal:

- A. Contractor shall remove with the proper equipment, bituminous concrete, oil penetration and/or portland cement concrete pavements in varying depths. Where a remainder of the pavement is to remain, a clean saw cut to the full depth of pavement shall be made to separate that pavement from the one being removed.
- B. All utilities, gate hoses, catch basins, manholes, frames, covers and other miscellaneous items scheduled to remain or as directed by the Owner's Representative shall be protected from damage and shall be reset, repaired, or replaced by the Contractor to grade as required by the Owner's Representative.
- C. Unless otherwise directed by Owner's Representative, or required for inspection, Contractor shall immediately dispose of all waste material legally to an off-site location or as directed by the Owner's Representative.
- D. Contractor shall remove to full depth, all pavement scheduled for removal. A maximum of one (1) inch below pavement of the base material shall be removed during this work when new paving shall be placed. Base material removed to a depth lower than one (1) inch shall be replaced, spread and compacted to the satisfaction of the Owner's Representative. Such work shall be at the Contractor's expense. No additional payment for this work will be made. In areas where no new paving shall be placed, remove pavement and base to a total minimum depth of twelve (12) inches below proposed final grades.

## **SITE CLEARING AND PREPARATION**

### **Section 02100**

#### 3.06 – Unclassified Excavation:

- A. Contractor shall excavate and remove all unsuitable material such as defective gravel bases, bricks, brick or stone and mortar walls, blocks, curbing, conduits, pavements, Boulders over two (2) feet in diameter, Concrete foundations or footings that require jackhammer demolition, and any other waste materials or debris that is not scheduled for removal under other sections of the specifications.
- B. All unclassified materials are to be stockpiled by the Contractor and measured on site with the owner prior to removal. No material shall leave the site without the owner's permission.
- C. At the direction of the Owner's Representative, Contractor shall legally dispose of all unclassified excavation at an off-site location immediately after removal.

#### 3.07 – Dust Control:

- A. Contractor shall provide all equipment, labor, materials and related work necessary for the prevention and control of dust resulting from operations in the performance of the work of this Contract and in accordance with additional requirements specified herein. All costs in connection therewith shall be considered to be included in the various Unit and/or Lump Sum Prices Bid for the various items as listed in the Bid.
- B. When in the opinion of the Owner's Representative, conditions at the site are such as to require dust control measures to supplement those required to be provided by the Contractor as described in the preceding paragraph, the Owner's Representative may direct the Contractor to furnish and spread dust prevention measures over certain designated areas at the site, by approved mechanical devices at the rate for each area as required at no additional cost to the Owner.
- C. Calcium Chloride, if utilized, shall meet the requirements of RIDOT Standard Specifications.

#### 3.08 – Pruning:

- A. All pruning shall be performed by a Certified Arborist.
- B. Contractor shall prune trees to remove suckers, interfering branches, dead or diseased wood, and broken or deformed branches and in such a manner as to preserve the natural character of the plant. Only approved methods and tools will be permitted. Use of axes for trimming or spurs for climbing will not be permitted.

## **SITE CLEARING AND PREPARATION**

### **Section 02100**

- C. Perform all pruning with clean, sharp tools. All cuts shall be flush and clean, and in accordance with the latest recommendations and techniques of the International Society of Arboriculture (ISA) and the State Division of Forest Environment.
1. Unless otherwise specified, shade trees should be single trunked and have a single recognizable leader, where appropriate to the species and age of the tree.
  2. Unless otherwise specified, all existing and proposed trees shall be free of branching to 6'-8" min above finish grade.
  3. When applicable, trees shall be pruned for a minimum clearance of 18 inches around wires, in such a way as to allow wires to pass through the tree canopy rather than cropping foliage and branches

**End of Section**

**Part 1 – General:**

1.01 – Related Documents:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.02 – Description of Work:

- A. Provide all materials, equipment and labor necessary to complete the work as indicated on the drawings or as specified herein.
- B. The principal work if this section includes, but may not be limited to the following:
  - 1. Identifying Existing Utilities
  - 2. Removal of existing site improvements
  - 3. Dust Control

1.03 – Regulatory Requirements:

- A. Conform to applicable codes for disposal of debris.
- B. Conform to all environmental regulations and stipulations of any and all environmental permits, in accordance with Section 01060 of these Specifications.

**Part 2 – Products:**

2.01 – Calcium Chloride for Dust Control:

- A. Calcium chloride shall meet the requirements of the RIDOT Standard Specifications.
- B. Calcium chloride shall have weights marked on the shipping containers to be used, or if directed by Owner's representative, scales shall be furnished by and at the Contractor's expense to measure calcium chloride by the ton.

**Part 3 – Execution:**

3.01 – Identifying Existing Utilities:

- A. Contractor shall retain Dig Safe (Dial 811 or 888-DIG-SAFE) to identify all utilities. Record locations on Project Record Documents from Dig Safe field location markings.
- B. Contractor shall disconnect, remove, and cap utility lines within demolition areas that are not planned to be used.
- C. Location(s) of disconnected utilities shall be marked by the Contractor, and recorded on as-built drawings for owner.

3.02 – Selective Demolition:

- A. The Contractor shall prevent movement or settlement of adjacent structures and shall shore up, brace, underpin, and do whatever is necessary to protect adjacent structures. Damage to adjacent structures not intended to be removed, caused due to improper protection of such structures shall be repaired and/or replaced by the Contractor at their own expense.
- B. Contractor shall demolish indicated appurtenances in an orderly and careful manner so as to allow for minimal disturbance to adjacent areas.
- C. Contractor shall protect existing pavements, vegetation, appurtenances, and structures which are not denoted on plan to be demolished.
- D. Contractor shall cease operations and notify Owner's representative immediately if adjacent structures appear to be endangered. Do not resume operations until corrective measures have been taken.
- E. Except where noted otherwise, Contractor shall immediately remove demolished material from site and dispose of legally off-site.
- F. Relics, antiques, and similar objects, as indicated by the Owner's representative or as discovered or uncovered in the process of performing the Work of this Section, remain the property of the Owner. Contractor to notify Owner's representative and obtain acceptance regarding method of removal, prior to any removals.
- G. Unless otherwise directed, contractor shall remove and promptly legally dispose of contaminated, vermin infested, or dangerous materials encountered.

## DEMOLITION Section 02110

- H. Contractor may not burn or bury demolished materials on site.
- I. All areas excavated as a result of demolition shall be backfilled completely by the Contractor, as soon as possible. Excavated areas shall be protected by Contractor until backfilling is completed to ensure safety to surrounding structures, personnel, and the public.
  - 1. Contractor shall rough grade and compact areas affected by demolition to maintain site grades and contours.
- J. Contractor shall remove demolished materials from site as work progresses. Project Site shall be left in clean condition.

### 3.03 – Removal of Existing Site Improvements:

- A. Storage Tanks: Should below-ground storage tanks be found, Contractor shall stop work immediately, and notify Owner or Owner's Representative.
- B. Fencing: Contractor shall remove all fencing and fencing fabric as indicated on the drawings. Except as noted or requested by the Owner's Representative, all footings associated with fencing shall be removed without disturbance to surrounding pavements and site amenities. All fencing and fencing fabric shall be disposed of in an off-site location in accordance with all local, state, and federal regulations.
- C. Footings, Foundations and Structures: Where indicated in the Contract Drawings, Footings, foundations, and structures shall be removed by the Contractor to a minimum depth of 18". In certain locations, drawings may show excavation, grading operation, or other site improvements which require removal of footings and other unsuitable materials to full depth required to perform improvement work. Where footings need to be removed to 18" depth, all saw cutting or jack hammering required shall be performed at no additional cost to the owner.
- D. Curb: Contractor shall carefully remove, store, and clean any curbing specified for resetting in a manner consistent with RIDOT standards.

**DEMOLITION  
Section 02110**

3.04 – Dust Control:

- A. Contractor shall provide all equipment, labor, materials and related work necessary for the prevention and control of dust resulting from operation in the performance of the work of this contract and in accordance with additional requirements specified herein. All costs in connection therewith shall be considered to be included in the various unit and/or lump sum prices bid for the various items as listed in the bid, and shall not be borne by the Owner.
  
- B. When in the opinion of the Owner's representative, conditions at the site are such as to require dust control measures to supplement those required to be provided by the Contractor (and as described in the preceding paragraph) to protect the safety, health, and welfare of the surrounding community, the Owner's representative may direct the Contractor to furnish and spread dust control measures over certain areas at the site, at certain times, and at specific rates of application suitable for successful control of dust, at no additional cost to the Owner.
  
- C. Calcium Chloride utilized for dust control shall meet the requirements of RIDOT.

**End of Section**

**Part 1 – General:**

1.01 – Related Documents:

- A. The General Conditions, Supplementary Conditions and applicable portions of Division 1 of these Specifications are a part of this Section, which shall consist of all labor, equipment and materials necessary to complete all excavating, filling and grading work indicated on the Drawings, herein specified, or both.
- B. Applicable portions of Division 2 of these Specifications, including, but not necessarily limited to:
  - 1. Section 02100, “Site Clearing and Preparation”
  - 2. Section 02210, “Site Grading and Drainage”
  - 3. Section 02270, “Slope Protection and Erosion Control”

1.02 – Description of Work:

- A. Stripping of soil as herein specified or indicated on Construction Drawings.
- B. Stockpiling of surplus topsoil, if any, on-site where directed by the Owner or Owner’s Representative.
- C. Excavation of all trades is included herein, including, but not necessarily limited to excavation for footings, rough grading, utility services and extensions.
- D. Providing of additional material hereinafter specified or needed for fills. Removal and Legal Disposal of excess material and that which is unsuitable for filling.
- E. Backfilling of all trades.
- F. Compaction of fills of all trades as hereinafter specified.
- G. Repairs and Corrections of any major deformations caused by the removal of large boulders, sink holes, cave-in, etc., with concrete, bank run gravel or crushed stone.

1.03 – Protection and Precautionary Measurements:

- A. Carefully maintain benchmarks, monuments, and other reference points. If disturbed or destroyed, replace reference points as directed.

## **EARTHWORK**

### **Section 02200**

- B. Protect active pipes, if encountered, and notify persons owning same. If encountered, remove inactive utilities from within building lines. Plug or cap where indicated or directed.
- C. Protect persons and property from damage and discomfort caused by dust. Water as necessary, or apply other Dust Control techniques or products to quell dust.
- D. Protect trees and associated root zones of trees designated for protection

#### 1.04 – Erosion Control:

- A. Employ satisfactory methods and operations to minimize erosion of soil during earthwork operations. Follow accepted standards of the RI Department of Environmental Management and as otherwise specified within these specifications for erosion control.

### **Part 2 – Elevation and Obstructions:**

#### 2.01 – General:

- A. The Contract is based upon the following: That the surface elevations are as indicated; that no pipes or other artificial obstructions, except those indicated, will be encountered.
- B. In case the actual conditions differ substantially from those stated, and/or shown, Notify the Owner's Representative of all deviations. Should it be determined that Contract or Project Scope require adjustment or modification, the Owner and Contractor will negotiate such amendment, and shall adjust project scope and/or contract in accordance with procedures outlined in these specifications and the Unit Prices submitted with the Bid.

#### 2.02 – Quality Assurance:

- A. Materials, methods, and compaction tests will be subject to approval of an approved Inspection Agency specified elsewhere in these specifications.

#### 2.03 – Code and Standards:

- A. Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction. The contractor is required to contact Dig-Safe 72 hours prior to start of excavation.

**Part 3 – Requirements:**

3.01 – Traffic:

- A. Contractor shall conduct all earthwork operations and the removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
  - 1. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
  - 2. Provide all traffic control required throughout and due to construction procedures, or resulting conditions, and pay all costs incurred.

3.02 – Damages:

- A. Contractor shall promptly repair damages caused by operations to adjacent facilities, or facilities within project site not specified for removal, as directed by the Owner's Representative and at no additional cost.

3.03 – Existing Topsoil Removal:

- A. Before starting to excavate, Contractor shall strip and separate available topsoil, subsoil and unsuitable material to full depth from areas to be covered by pavements or other site structures, or areas where cuts or fills are to occur.
  - 1. Stripping shall be limited to small areas at a time, immediately followed by filling, to avoid unnecessary disturbance to the subgrade.
- B. Existing On-Site Topsoil shall be that material found in the upper horizon of excavated soils whose composition generally matches that defined by RIDOT M.18.01 LOAM.
- C. Contractor shall strip topsoil to whatever depths encountered, unless shown otherwise and in such manner so as to prevent intermingling with the underlying subsoil or other objectionable material. Remove heavy growths of grass from areas before stripping.

## **EARTHWORK**

### **Section 02200**

- D. Contractor shall screen and stockpile topsoil in storage piles in areas shown or where otherwise indicated or approved by Owner. Construct storage piles to freely drain surface water. Cover storage piles if required to prevent windblown dust. Protect toe of slopes of storage piles with Haybales or Silt Fence in accordance with the contract drawings and other sections of these specifications to prevent migration of sediments. Topsoil remains property of Owner, unless otherwise specified.

#### 3.04 – General Open Earth Excavation:

- A. Contractor shall excavate as necessary for work shown or specified. Remove earth, rocks, boulders and other obstructions as herein defined.
- B. When excavating, Contractor shall allow ample space for formwork.
- C. Contractor shall leave bearing surfaces undisturbed, level, and true. Excavate to solid bearing at elevations no higher than those shown.

#### 3.05 – Unauthorized Excavation:

- A. Unauthorized Excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Owner's Representative.
- B. If Unauthorized Excavation occurs in areas that are specified to be under footings, foundation bases, or retaining walls, Contractor shall fill unauthorized excavation by extending the indicated bottom elevation of the footing or base to the excavation bottom without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, only when acceptable to Owner's Representative.
- C. If Unauthorized Excavation occurs in areas not specified in above specification, Contractor shall backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Owner's Representative.
- D. Contractor shall complete all corrective work to Unauthorized Excavation as specified above at no expense to the Owner.

#### 3.06 – Stability of Excavations:

- A. Contractor shall slope sides of excavations to comply with Local Codes and Ordinances having jurisdiction. Shore and brace excavations where sloping is not possible either because of space restrictions or stability of material excavated.

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- B. Contractor shall maintain sides and slope of excavations in a safe condition until completion of backfilling.

#### 3.07 – Shoring and Bracing:

- A. Contractor shall brace and shore sides of excavation as necessary to prevent danger to persons or damage to structures, injurious caving, or erosion.
- B. Materials for shoring and bracing, such as sheet piling, uprights, stringers, and crossbraces, shall be provided by Contractor in good serviceable condition.
- C. All Shoring and bracing shall comply with Local Codes and Authorities having jurisdiction.
- D. Contractor shall maintain shoring and bracing in excavation regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.
- E. Should they occur, slides and cave-ins of excavations shall be repaired by the Contractor at their own expense.
- F. Contractor shall remove shoring and bracing before backfilling.
- G. In removing shoring and bracing, Contractor shall exercise care to prevent voids. Immediately fill voids, if formed, with approved fill material at Contractor's expense.

#### 3.08 – Water and Frost:

- A. Contractor shall keep earth under footings and slabs dry and free from frost. Should bearing surfaces be softened by water or frost, re-excavate to solid bearing and fill with concrete or gravel as directed by the Owner's Representative, and at no expense to Owner.

### **Part 4 – Filling:**

#### 4.01 – General:

- A. Contractor shall remove debris and organic matter before filling.
- B. Only approved materials shall be used by Contractor for fills.
- C. Unless otherwise specified or requested by the Owner's Representative, Contractor shall make fills as soon as feasible thereafter to insure maximum settlement and to avoid disturbance to the subgrade.

- D. Contractor shall not place fill on frozen ground.
- E. All material provided by Contractor shall be free from frost, roots and other vegetable matter, large rocks, rubbish, brick, and other undesirable material.
- F. Install fills in indicated thicknesses, compacted in lifts as specified herein.
- G. Fills executed by Contractor shall have neat, uniform side slopes, smoothed and graded to those excavations not required to be filled.

4.02 – Fill Materials:

- A. "Processed Gravel" in pipe trenches as roadway and sidewalk base course and other areas where indicated, shall be free from loam and other specified undesirable materials, conforming to the requirements of Table I, Column I, Section M.01.09 GRADATION OF AGGREGATES, RI Department of Transportation Standard Specifications for Road and Bridge Construction, as amended.

On-site material may be used under building areas only after satisfactory test data has been submitted and only with the approval of the Owner's Representative.

- B. "Bank Run Gravel" and/or "Gravel Borrow" under building slabs, in pipe trenches, around manholes and catch basins, against damp-proofed foundation walls, where indicated as "gravel fill", and where else shown, shall be free from loam and other specified undesirable material, and conforming to the requirements of Table I, Column I, Section M.01.09 GRADATION OF AGGREGATES, RI Department of Transportation Standard Specifications for Road and Bridge Construction, as amended.

On-site material may be used under building areas only after satisfactory test data has been submitted and only with the approval of the Owner's Representative.

- C. "Stone Fines" consisting of clean, inert, hard, durable grains of quartz or other hard durable rock; free from loam or clay, surface coatings and deleterious material; and conforming to the following analysis:

Sieve Size	% Passing
#8	100
#50	25-40
#100	0-10
#200	0-5

- D. "Washed Crushed Stone" consisting of clean, inert, hard, durable grains of quartz or other hard durable rock; free from loam or clay, surface coatings and deleterious material; and having an aggregate size no greater than 3/4" and no less than 1/2".
- E. "Bedding", unless otherwise specified by the Owner's Representative, shall be as defined by ASTM D2321, Class I, II, or III and installed as required in ASTM D2321.
- F. "Boulder" for use in Boulder Retaining Walls shall be hard durable rock generally with a rounded appearance, conforming to the size requirements of RIDOT R-6 to R-8.
- G. "Riprap" for use to mitigate erosion shall conform to the requirements of RIDOT M.10.03.

**Part 5 – Compaction:**

5.01 – General:

- A. Contractor shall place fill in horizontal layers, beginning with the lowest areas and building up until the entire area to be filled is at a uniform elevation.
  - 1. Compact each layer with an approved vibratory device to achieve minimum density requirements prior to placement of successive layer.
  - 2. Continue compaction of each layer until there is no evidence of weaving or creeping. Compact places inaccessible to large equipment with approved mechanical tampers, as well as around the perimeter of foundations, walls and around column pedestals and footings.
  - 3. Do not use rolling equipment in the area adjacent to the retaining walls.
  - 4. Earth in cut sections for paved areas shall be excavated to subgrade. The resulting surface of the cut shall be compacted as required, to not less than ninety five percent (95%) of maximum density.
- B. Subgrade or Fill Material: Unless otherwise specified, Contractor shall compact to ninety percent (95%) of maximum density in a maximum depth of twelve (12) inch loose layers, except for two (2) layers a maximum depth of six (6) inch loose layers directly over pipes.
- C. Compacted Gravel Base Material: Unless otherwise specified, Contractor shall compact to ninety percent (95%) of maximum density in three (3) inch loose layers.

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- D. Attention is directed to the grain size characteristics of the material and necessity for the difficulty of controlling and maintaining optimum moisture content during compaction. Material in each layer shall contain optimum moisture for maximum density compaction and the optimum moisture content shall be uniformly distributed throughout the layer. Harrowing or other working of the material may be required to produce uniformity and control of the water content.
- E. Contractor shall slope the surface of each layer a minimum of one percent (1%) plus or minus, at the conclusion of each day's work to provide surface drainage.
- F. Whenever in-place densities are below minimum acceptable limits, as determined by AASHTO T-191 or AASHTO T-205, additional compaction will be required of the Contractor to produce the specified densities, without additional cost to the Owner. When greater densities than the minimum specified are required by the Owner's Representative, the work will be subject to Contract Unit Prices.
- G. When requested by the Owner's Representative, the Owner will retain a laboratory approved by the Owner's Representative to supervise and control the construction of the fill. This laboratory shall perform tests in accordance with AASHTO T-180 on the materials the Contractor proposed to use to establish the compacted dry weight at optimum moisture. Results of these tests shall be submitted to the Owner's Representative for approval and work may start only after the Owner's Representative approves the test results.
- H. If required, the Owner's Representative or approved testing laboratory under the direction of the Owner's Representative shall provide continuous inspection of compacted fills.
- I. Backfilling material shall conform to laboratory requirements herein specified and shall be soil obtained from approved sources.
- J. The area to be filled shall be cleared of all loose material and inspected by Contractor to ensure area is suitable to receive fill. If area to be filled fails following filling operations, due to unsuitable nature of area to be filled, Contractor shall repair or replace fills as needed at no expense to the Owner.
- K. Fill material shall be free from frost and shall not be placed on frozen ground. Fill shall be deposited by Contractor in layers of such thickness as required by its nature or as directed, but the uncompacted thickness of each layer shall not exceed (12) inches. Each layer shall be separately compacted to a uniform solid mass by use of vibratory compactors or other approved equipment. Fill shall be placed in horizontal layers, beginning with the lowest areas and building up until the entire area to be filled is at a uniform elevation. The Contractor shall control the moisture content of the fill

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material, as directed by the laboratory to insure maximum density by either the addition of water, or by harrowing and working prior to compacting. Each layer shall be free of ruts and shall meet compaction requirements before a succeeding layer is placed. Compaction of each layer shall continue until no weaving or creeping takes place.

- L. Backfill in areas excavated after construction of the fill shall be constructed in layers whose loose thickness shall not exceed six (6) inches, which shall be thoroughly compacted with approved hand equipment to the density herein before specified prior to placement of successive layers.
- M. Field tests of moisture content prior to compaction and dry weight after compaction shall be made by the contractor or approved laboratory to assure thorough and uniform compaction. Testing shall be performed on the layer immediately below the layer just compacted.
- N. At least four (4) tests of moisture content shall be made each day by the Contractor of approved laboratory. Additional tests shall be made if material or moisture conditions change.

#### **Part 6 – Rough Grading:**

##### 6.01 – General:

- A. Contractor shall grade entire area of property to reasonable true and even surfaces, thoroughly compacted to indicated elevations.
- B. Unless otherwise specified, Contractor to slope ground away from paved surfaces to facilitate drainage.
- C. Contractor shall grade to uniform levels or slopes between points where grades are noted or specified.
- D. At abrupt changes in grade levels, Contractor shall round surfaces to ease transitions.
- E. Should as-built or on-site figures conflict with noted contours, consult Owner's Representative.

6.02 – Levels:

- A. Contractor shall grade paving, walks and other surface areas to subgrade.
- B. Contractor shall grade lawn areas to four (4) inches below finish grades.
- C. Contractor shall grade landscape beds to three (3) inches below finish grades.

**End of Section**

# SITE GRADING AND DRAINAGE

## Section 02210

### Part 1 – General:

#### 1.01 – Related Documents:

- A. The General Conditions, Supplementary Conditions and applicable portions of Division 1 of the Specifications are a part of this Section, which shall consist of trimming and grading of all shoulders, side slopes, sidewalks and subgrade whether in excavation or embankment, and the work shall be performed in a neat and workmanlike manner, to the lines and grades of the Typical Sections shown on the Plans and as the Owner's Representative may direct.
- B. This item shall also include the grading and compaction of the subgrade upon which the sidewalks, pavements, and topsoils shall rest, to the lines and grades of the Plans and as the Owner's Representative may direct.

#### 1.2 – Related Sections:

- A. Section 02200 "Earthwork"

### Part 2 – Materials (Not Applicable)

### Part 3 – Construction Methods:

- A. The areas to be graded shall have all unsatisfactory material removed and shall then be rolled by Contractor as directed to a tolerance of one (1) inch plus or minus, provided that this one (1) inch above and below grade is not maintained for a distance longer than one hundred (100) feet. Any depressions which may occur during the rolling shall then be filled with additional suitable material and the surface then regraded and rolled until true to the lines and grades as required.
- B. All slopes shall be graded and finished by Contractor to conform with the lines and grades indicated on the Plans and as directed to the tolerance of two (2) inches plus or minus.
- C. Areas to be loamed shall be trimmed and graded to the lines and grades as indicated on the Plans or as directed, before any loam is placed.

**End of Section**

# SLOPE PROTECTION AND EROSION CONTROL

## Section 02270

### **PART 1 – General:**

#### 1.01 – Related Documents:

- A. Drawing and General Provisions of Contract, including General Conditions and Supplementary Conditions and Division 1 Specification Sections apply to work in this Section.

#### 1.02 – Description of Work:

- A. Furnish and install temporary slope protection and erosion control measures as needed during the progress of the work or as ordered by the Owner’s Representative during the life of the Contract to control water pollution through use of Compost Silt Socks, Baled Hay Checks, Silt Fence, and other erosion control devices and methods.

#### 1.03 – Related Sections:

- A. Section 01060 “Regulatory Requirements”
- B. Section 02100 “Site Clearing and Preparation”

### **Part 2 – Products:**

#### 2.01 – Materials:

- A. Coir Fiber Erosion Control Blanket: Shall be natural, biodegradable coconut coir fiber mats, Semi-Temporary in nature, lasting between 9 and 24 months, similar to Control Mat OCF 30 Mattress Coir and Jute Net Erosion Temporary Control Mats as available through Granite Environmental (888-703-9889), or approved equal.
  - 1. Erosion Control Anchoring: Shall be Steel Landscape Staples, spacing and materials to be in accordance with manufacturer’s installation specifications.
- B. Coir Logs: Shall be natural, biodegradable coconut coir fiber logs, Constructed of bristle coir twine outer netting with 2”x2” openings, surrounding a mixture of mattress coconut coir, with a designed lifespan of 2-5 years, 12” or 16” diameter (as noted on plans), and 10’ in length with a density of 7lbs/cu.ft., similar to “Biodegradable Erosion Control Fiber Rolls”, as available through Granite Environmental (888-703-9889), or approved equal.
  - 1. Erosion Control Anchoring: Shall be 2” x 2” x 36” hardwood stakes, spacing to be in accordance with manufacturer’s installation specifications.

# SLOPE PROTECTION AND EROSION CONTROL

## Section 02270

- C. Straw Wattle: Wattles shall be biodegradable woven mesh netting (9" Dia x 25' in Length), filled with straw or hay and seed mix (where specified). Wattles shall be anchored with 1" x 1" x 18"-24" long hardwood stakes.
- D. Haybales: Haybales shall be mowings of acceptable herbaceous growth reasonably free from noxious weeds or woody stems and shall be reasonably dry. Haybales shall be approximately 36" long x 18" wide x 24" high. Bales shall be anchored with 1" x 1" x 3' long hardwood stakes.
- E. Silt Fence: Shall be a synthetic non-degradable fabric capable of trapping and holding accumulations of water born siltation. Silt fence shall be mounted on wood stakes, and shall be no less than 30" high.
- F. Jute Mesh Erosion Control: Shall be natural, biodegradable mat of undyed and unbleached single jute yarn. It shall be constructed of loosely twisted yarn with a uniform, open, plain weave. It's thickness shall not vary by more than one half of its normal diameter. Weave shall be constructed of .6-inch openings between strands in one direction, and .9-inch openings between strands in the perpendicular direction. Mesh shall have a weight averaging .9 lbs./square yard with a tolerance of 5%.
  - 1. Erosion Control Anchoring: Shall be Steel Landscape Staples, spacing and materials to be in accordance with manufacturer's installation specifications.

### Part 3 – Execution:

#### 3.01 – Preparation:

- A. If overland water flow becomes a problem in the construction progress, then Contractor shall take it upon himself to construct any and all erosion or siltation control measures, as necessary, to alleviate an erosion or siltation problem which may affect progress of work. This work shall be performed at no additional expense to the Owner.
- B. Should erosion and siltation occur, the Contractor will be required to repair and/or clean the damaged work as part of the base bid of this project.
- C. Contractor shall have on-site all necessary slope protection and erosion control devices and materials prior to undertaking any work that may cause erosion or siltation.

# **SLOPE PROTECTION AND EROSION CONTROL**

## **Section 02270**

### 3.02 – Special Instructions:

- A. All erosion control devices shall be installed in accordance with manufacturer's specifications, industry standards for erosion control, and as illustrated on the Contract Drawings.
- B. In the event that temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install controls as a part of the work as scheduled, and are ordered by the Owner's Representative, such work shall be performed by the Contractor at his own expense.
- C. It is the Contractor's responsibility to install and acceptably maintain erosion control measures throughout the duration of the project. Installation of erosion control measures shall be completed as illustrated on the contract drawings, in accordance with RIDOT Standard Specifications where applicable, and any manufacturer's specific installation instructions.
- D. In case of repeated failures on the part of the Contractor to control erosion, pollution and/or siltation, the Owner's Representative reserves the right to employ outside assistance or to use his own forces to provide the necessary corrective measures. Such incurred direct cost plus project engineering costs will be charged to the Contractor and appropriate deductions made from the Contractor's monthly progress payment.
- E. Any erosion, siltation or general damage resulting from neglect by the Contractor to undertake erosion control measures as required or directed shall result in the responsibility of the Contractor to correct the areas as determined by Owner's Representative.
- F. Any requirements stipulated by environmental regulators arising from the contractor's negligence in properly maintaining erosion and sedimentation control measures shall be conducted by the contractor at no additional cost to the Owner.

### 3.03 – Removal and Final Cleanup:

- A. Upon complete stabilization of soils against erosion, remove sediment control devices and all accumulated silt. Dispose of silt and waste materials in proper manner.

**End of Section**

# SPECIAL SURFACING

## Section 02550

### Part 1 – General:

#### 1.01 – General:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Special Conditions, and related parts of the Technical Specifications apply to the work of this section.

#### 1.02 – Section Includes:

- A. Stone Dust Surface

#### 1.03 – Related Sections:

- A. Sections
  - 01340 “Shop Drawings, Product Data, and Samples”
  - 01400 “Quality Control”
  - 01410 “Testing Laboratory”
  - 02200 “Earthwork”
  - 02210 “Site Grading & Drainage”
  - 02600 “Bituminous Concrete Surfacing”
  - 02711 “Chain Link Fencing”
  - 02760 “Site Furnishings and Prefabricated Structures”
  - 02810 “Soil Preparation for Lawn Establishment”
  - 02820 “Seeding”
  - 03300 “Site Concrete Work”

#### 1.04 – Submittals:

- A. Contractor shall submit all product data under provisions of Section 01340.
- B. Contractor shall submit sample of Concrete Paver Materials to clearly demonstrate range of sizes and color of pavers for approval by Owner’s Representative.
- C. Certified analysis, source, and sample of stone dust for approval by Owner.

#### 1.05 – Quality Assurance:

- A. All work shall conform to all local, state, and federal regulations along with the current material testing guidelines as published by the American Society of Testing and Materials (ASTM).

**SPECIAL SURFACING**  
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**Part 2 – Products:**

2.01 – Stone Dust Surface:

- A. Stone dust sand shall have a minimum density of one hundred sixty five (165) pounds per cubic foot.
- B. Compacted stone dust shall be crushed stone, grey in color, composed of hard, uncoated, cubical fragments produced from rock formations. It shall have one hundred percent (100%) crushed particles and a petrographic number of not more than one hundred sixty (160).

It shall be compacted by tampering and have a minimum depth as shown on the Drawings. The gradation limits shall comply with the following:

"Stone Fines (Dust)" consisting of clean, inert, hard, durable grains of quartz or other hard durable rock; free from loam or clay, surface coatings and deleterious material; and conforming to the following analysis:

<u>Sieve Size</u>	<u>% Passing</u>
#8	100
#50	25-40
#100	0-10
#200	0-5

**Part 3 - Execution:**

3.01 – Inspection:

- A. Contractor to verify compacted subgrade is dry and ready to support special surfaces and imposed loads.
- A. Contractor to verify that gradients and elevations of base are correct.
- B. Beginning of installation by Contractor means acceptance of substrate by Contractor.

## **SPECIAL SURFACING**

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#### 3.02 – Preparation (General):

- A. Contractor shall complete all necessary regrading to bring subgrades to the required grades and sections including compaction. Subgrade shall be fully compacted to a minimum compaction of 95%, compacted in horizontal layers not to exceed 6 inches depth before compaction.
- B. All soft and yielding materials and other portions of the subgrade which will not compact readily when rolled or tamped, shall be removed by Contractor as directed and all loose rock or boulders found in the subgrade shall be removed or broken off to a depth of not less than eight inches below subgrade.
- C. All holes or depressions made by the removal of materials as described shall be filled by Contractor with suitable material and the whole surface compacted uniformly.
- D. Any portion of the subgrade which is not accessible to a vibratory compacting roller or tamper shall be compacted thoroughly by Contractor with hand tampers, weighing not less than fifty (50) pounds. The face of the tamper shall not exceed 100 square inches in area.
- E. Gravel Borrow base material shall be placed and spread uniformly by Contractor by means of approved spreaders or by other methods satisfactory to the Owner's Representative. Stones larger than 3" or 1/2 of the depth of the course shall be removed. Care shall be taken not to allow segregation of the remaining larger stones in the course, and if this becomes apparent, the material shall be separated and spread by means of rakes, forks and shovels.
- F. Contractor shall fill any depressions that appear during or after the rolling with gravel and re-roll until the surface is true and even. Compact inaccessible areas with a small mechanical or hand tamper.
- G. If the gravel does not contain a sufficient amount of moisture to ensure its firm and adequate compaction and shaping, water shall be added by the Contractor in sufficient amounts to obtain the desired result.

#### 3.03 – Stone Dust Surface:

- A. Layout: Contractor shall stake stone dust surface alignment per Contract Drawings; obtain approval from Owner's Representative before proceeding with Stone Dust surface construction.
- B. Contractor shall excavate to depth required, as shown on contract drawings, to receive compacted gravel base and stone dust material. Remove rocks, sticks, surface

## **SPECIAL SURFACING**

### **Section 02550**

roots and debris from surface. Install Gravel Base Material and Grade and tamp or roll soil surface to produce a smooth, uniform surface. Correct all depressions and irregularities. Obtain approval from Owner's Representative before installing stone dust material.

- C. Contractor shall spread stone dust for even width and depth as indicated on the Drawings or as required to match surrounding grades.

**End of Section**

# SOIL PREPARATION FOR LAWN ESTABLISHMENT

## Section 02810

### Part 1 – General:

#### 1.01 – Related Documents:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Special Conditions, and related parts of the Technical Specifications apply to the work of this section.
- B. Applicable portions of these Specifications, including, but not necessarily limited to:
  - Section 02100 “Site Clearing and Preparation”
  - Section 02200 “Earthwork”
  - Section 02210 “Site Grading & Drainage”
  - Section 02270 “Slope Protection and Erosion Control”
  - Section 02820 “Seeding”

#### 1.02 – Description of Work:

- A. Contractor shall provide all materials, equipment and labor necessary to complete the work as indicated on the Drawings or as specified herein.
- B. The principal work of this Section includes, but may not be limited to the following:
  - 1. Grading and Spreading Topsoil.
  - 2. Grading and Spreading Top Dressing.
  - 3. Preparation of Areas for Seeding.
  - 4. Application of Lime Stone.
  - 5. Application of Lawn Starter Fertilizer.
  - 6. Application of Turf Maintenance Fertilizer.

#### 1.03 – Quality Assurance:

- A. Contractor shall subcontract work to a firm specializing in such work unless Contractor is fully experienced and qualified.
- B. Contractor shall not make substitutions without written approval. If specified materials are not available, obtain approval for substitution from the Owner’s Representative.
- C. Contractor shall provide documentation ensuring only vehicles equipped with floatation tires or tracked vehicles that exert no more than eight (8) pounds per

# SOIL PREPARATION FOR LAWN ESTABLISHMENT

## Section 02810

square foot of pressure on the ground surface shall be allowed on any proposed or existing turf areas.

- D. Contractor shall perform work in accordance with Part L of the RIDOT Standards Specification for Road and Bridge Construction.
  - 1. Delete subsections referencing “Methods of Measurement” and “Basis of Payment”.

### 1.04 – Submittals:

- A. Contractor to provide certified analysis of on-site Top Soil to be provided. Analysis shall list soil additives, if necessary, to topsoil, to bring topsoil into conformance with these specifications, including rates and type.
- B. Contractor to provide certified analysis and source of any off-site Loam to be provided. Analysis shall list soil additives to topsoil including rates and type.
- C. Contractor to provide certifications and/or labels of proposed soil additives stating names of each.

### 1.05 – Product Delivery, Storage and Handling:

- A. Contractor shall protect all products from weather or other damaging or deteriorating conditions.

## **Part 2 – Products:**

### 2.01 – Topsoil and Loam:

- A. On-site topsoil (stockpiles), if available, shall be free of debris, roots and branches. It shall be made to conform to the requirements for “Loam” furnished from off the site as specified herein.
- B. Loam or on-site topsoil made to conform to the requirements of off-site Loam as specified herein shall be utilized in all lawn areas.
- C. Off-site Loam shall be screened loose, friable, fine sandy loam or sandy loam, as defined by the USDA’s Soil Conservation Service in the Soil Survey Manual issued in 1993, as amended, free of subsoil, refuse, stumps, roots, rocks, cobbles, stones, brush, noxious weeds, litter and other materials which are larger than ½-inch in any dimension and which will prevent the formation of a suitable seed bed. Organic

# SOIL PREPARATION FOR LAWN ESTABLISHMENT

## Section 02810

matter shall constitute not less than 5 percent nor more than 20 percent of the loam as determined by loss-on-ignition of oven dried samples that have been drawn by the Owner's Representative or Testing Lab, unless otherwise specified or directed. The loam shall have an acidity range of 5.5 pH to 7.6 pH. The Contractor shall notify the Owner's Representative of the intended source of loam to be employed at least two weeks prior to the intended time of use to allow time for sampling.

1. Loam shall possess good filtration and permeability rates, and shall conform to the requirements defined in Section M.18.01 of the RIDOT Standard Specifications.
2. If organic amendments are needed to obtain the specified matter content of the Loam, the organic matter source may be a peat or compost material meeting the criteria for the organic amendments as listed in this Section.
3. Organic matter for soil amendment, if required by Certified Analysis may be one of the following, or as directed by certified laboratory:
  - a. Processed Canadian sphagnum peat having an ash content not exceeding 15% as determined by ASTM D-2974 and a moisture content of 40-70%.
  - b. Compost shall be Agresoil or other commercially available compost mix aged for one (1) year in an in-vessel system, having a total ash content of no more than 40%, and should be proven to be non-phytotoxic.

### 2.02 – Peat Humus:

- A. Natural peat humus, free from excessive amounts of zinc, low in wood content, free from hard lumps and in a shredded or granular form; acidity range approximately 6.5 pH to 7.5 pH and organic matter not less than eighty five percent (85%), minimum water absorbing ability shall be two hundred percent (200%) by weight on an oven dry basis.

### 2.03 – Compost:

- A. Compost shall be a well decomposed, stable, weed free organic matter source. It shall be derived from agricultural, food, and/or yard trimmings. The product shall contain no substances toxic to plants and shall be reasonably free (less than 1 percent by dry weight) of man-made foreign matter. The compost will possess no objectionable odors and shall not resemble the raw material from which it was derived. Compost shall have a pH between 5.5 pH and 8.0 pH and a moisture content between 35 percent and 55 percent. The particle size shall pass through a 1-inch screen or smaller. It must

# SOIL PREPARATION FOR LAWN ESTABLISHMENT

## Section 02810

be stable to highly stable, pass growth screening and have a soluble salt concentration at 2.5 d s/m or less for soil blend. The compost must meet US EPA Part 503 exceptional quality concentration limits for trace elements/heavy metal.

### 2.04 – Fertilizer:

- A. Topsoil and/or Loam shall be tested for pH and Fertility by a certified soil testing laboratory prior to application of Fertilizer.
- B. Commercial fertilizer shall be a product complying with the State and the U.S. Fertilizer Laws, delivered to the site in the original, unopened, standard size containers which shall show weight, analysis of the product, name of the manufacturer, and bear the manufacturer's Certificate of Compliance covering analysis.
- C. Composition of fertilizer, pertaining to but not necessarily limited to percentages of Nitrogen (N), Phosphoric Acid (p), and Potassium (K), shall be as determined and recommended by Certified Soil Analysis to provide optimum fertility.

### 2.05 – Limestone:

- A. Ground Lime: Ground Limestone shall consist of a standard commercial product of ground dolomitic limestone intended for agricultural use. It shall be fine ground dolomite such that, when "burned" by standard lime producing methods, it shall yield at least 30 percent calcium oxide and 5 percent to 20 percent magnesium oxide for a total of 50 percent yielded from calcium and magnesium oxide. At least 40 percent but not more than 60 percent should pass through a 100-mesh screen, and all shall be able to pass a 20-mesh screen
- B. Pelletized Lime: Pelletized Lime shall consist of a standard commercial product of pelletized dolomitic limestone. The minimum calcium carbonate (CaCO<sub>3</sub>) derived from magnesium sources shall be 48 percent. Prior to pelletizing, 100 percent by weight shall pass through an 8-mesh screen, 90 percent through a 20-mesh screen, 65 percent through a 60-mesh screen and 50 percent through a 100-mesh screen.

# SOIL PREPARATION FOR LAWN ESTABLISHMENT

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### 2.06 – Superphosphate:

- A. Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes, and containing not less than twenty (20%) percent available phosphoric acid. The superphosphate shall be delivered to the original, unopened containers, each bearing the manufacturer's guaranteed analysis and submitted to the Owner's Representative for approval. Any superphosphate which becomes caked or otherwise damaged making it unsuitable for use, will be rejected.

### 2.07 – Herbicides, Pesticides and Fungicides:

- A. Herbicides, pesticides, and fungicides may be used subject to the approval of the Owner's Representative, and handled by State Licensed operators only.

### 2.08 – Water:

- A. Clean, fresh, potable water.

## **Part 3 – Execution:**

### 3.01 – Grading and Spreading:

- A. Contractor shall remove all debris and other inorganic materials on any prepared subgrades and reshape and dress any damaged or eroded slopes, swales and other areas.
- B. Contractor shall scarify and loosen subgrade to a friable condition in any areas where compaction may have occurred. Topsoil shall not be placed until subgrade is in suitable condition and free of excessive moisture or frozen materials.
- C. Stockpiled and off-site topsoil and shall be spread by Contractor as required on all disturbed and bare areas to produce a total minimum depth shown on Contract Drawings. Fill all depressions in existing grades with suitable fill material as specified in Section 02200, prior to spreading of topsoil, then shape and finish grade to depth of topsoil required.
- D. Area shall be progressively fine graded by Contractor and machine and hand raked, with amended stockpiled topsoil and/or off-site Loam added as required to correct depressions and other irregularities, to produce smooth and unbroken finish grades and the depth of topsoil required. Where additional topsoil is placed on existing topsoil disc harrow to mix top four (4) inches.

# SOIL PREPARATION FOR LAWN ESTABLISHMENT

## Section 02810

- E. Finish grades shall conform to lines, grades, sections and shapes of lawn areas as required. Contractor to provide positive drainage and smooth, uniform, rounded transitions at all changes and breaks in grade. Topsoil/Loam is to be a consistent depth of 1/2" below adjacent pavement surfaces.
- F. Starter Fertilizers: All required materials shall be spread and distributed into the soil at rates and amounts specified herein and as determined by certified analysis.
- G. After establishment of finish grade, entire area shall be rolled by Contractor using a light roller, and hand raked by Contractor.

### 3.02 – Preparation of Areas for Seeding:

- A. General Description: This work shall consist of the preparation of the seed bed. Work shall consist of as described herein:
  - 1. Areas shall be finely raked by Contractor to a finished grade. Substantially, all sticks, litter, wire, weeds, cable or stones larger than one-half (1/2) inch in greatest dimension shall be removed and disposed of as directed.
  - 2. Where the soil has become compacted, prior to fine raking, areas to be seeded shall be scarified by discing, yolk raking or other approved method to a minimum depth of two (2) inches.
  - 3. No seeding will be permitted on areas where the seed bed has not been properly prepared or where the soil is compacted or frozen.

### 3.03 – Soil pH:

- A. Following any soil amendments of the topsoil/loam, in accordance with certified analysis, and following laying of loam, Contractor to have the seed/sod bed tested for soil pH by an Approved Soil Testing Laboratory, and a complete soil amendment program will be recommended by the testing laboratory and Owner's Representative.
- B. The amount of lime or sulfur required to change pH should be based on the approved soil test. Spread ground limestone or sulfur as recommended by soil testing evenly over the lawn areas to achieve acceptable pH range. Unless otherwise directed by approved soil testing laboratory, do not apply sulfur during mid-summer stress periods, and do not exceed five (5) pounds per one thousand (1,000) square feet per year. On sandy soils, apply sulfur as a split application.

# SOIL PREPARATION FOR LAWN ESTABLISHMENT

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- C. When applied dry, limestone shall be spread evenly and incorporated thoroughly into the soil by discing or other approved means. When applied hydraulically, discing may not be necessary. Granular treatment to be applied as required by soil pH test, to produce a pH of 6.5 to 7.5.

### 3.04 – Application of Lawn Starter Fertilizer:

- A. Following all amendments of the topsoil, Contractor to have the seed/sod bed tested for soil fertility by an Approved Soil Testing Laboratory, and a complete fertilization program will be recommended by the testing laboratory and Owner's Representative for the initial fertilization.
- B. After the incorporation of ground limestone into the sod bed, Contractor shall then apply the fertilizer, if required by Soil Test.
- C. Fertilizer shall be applied by Contractor at a rate required by soil fertility test.
- D. Contractor shall apply fertilizer according to manufacturer's recommendations.

### 3.05 – Application of Turf Maintenance Fertilizer:

- A. One (1) application of turf maintenance fertilizer will be required before final acceptance of seeded/sodded areas. Contractor to have the seed/sod bed tested for soil fertility by an Approved Soil Testing Laboratory, and a complete fertilization program will be recommended by the testing laboratory and Owner's Representative for fertilization.
- B. Fertilizer shall be applied by Contractor at a rate as required by soil fertility test, after seeding has been established.
- C. Fertilizer should be applied by Contractor at a time, which shall be requested in writing by the Contractor, and approved in writing by the Owner's Representative.

**End of Section**

**Part 1 – General:**

1.01 – Related Documents:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Special Conditions, and related parts of the Technical Specifications apply to the work of this section.
  
- B. Applicable portions of these Specifications, including, but not necessarily limited to:
  - Section 02100 “Site Clearing and Preparation”
  - Section 02200 “Earthwork”
  - Section 02210 “Site Grading & Drainage”
  - Section 02270 “Slope Protection and Erosion Control”
  - Section 02810 “Soil Preparation for Lawn Establishment”

1.02 – Description of Work:

- A. Contractor shall provide all materials, equipment and labor necessary to complete the work as indicated on the Drawings or specified herein.
  
- B. All new grass areas should be temporarily fenced off by Contractor to allow them to become established before traffic is allowed on them.
  
- C. The principal work of this Section includes, but may not be limited to the following:
  - 1. Application of Seed.
  - 2. Application of Weed Control.
  - 3. Acceptance of Seeding and Sodding.

1.03 – Material Testing:

- A. Approved Soil Testing Laboratories: Testing of Topsoil/Loam shall be performed by an approved laboratory certified by the USGA.

1.04 – Quality Assurance:

- A. Work under this section shall be completed by skilled workers who are completely familiar with the specific requirements and methods needed for the proper completion of the work of this section. Contractor shall subcontract seeding work to a firm specializing in such work unless Contractor is fully experienced and qualified.
  
- B. Contractor shall submit the seed mixture to the Owner’s Representative for approval. No seed shall be applied to the site until the Owner's Representative has determined

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the mixture meets all requirements. Each seed bag or container shall display a label which identifies the contents as a true representation of the seed mix and percentages required by specification.

- C. Contractor shall provide documentation ensuring only vehicles equipped with floatation tires or tracked vehicles that exert no more than eight (8) pounds per square foot of pressure on the ground surface shall be allowed on any proposed or existing turf areas.
- D. Do not make substitutions without written approval. If specified seed mixes are not available, obtain approval for substitution from the Owner's Representative.

#### 1.05 – Submittals:

- A. Contractor to provide certifications and/or labels of proposed seed mixtures stating common and scientific names of grasses, percentages by weight and percentages of purity and germination.

#### 1.06 – Product Delivery, Storage And Handling:

- A. Contractor shall protect all products from weather or other damaging or deteriorating conditions.
- B. Seed mixes that have been damaged or have deteriorated in transit or storage are not acceptable.
- C. Seeding Schedule: Prepare a proposed seeding/sodding schedule. Schedule dates for each type of landscape work during normal seasons for such work:

Seeding:     April 1 through May 31 or  
                  August 15 through October 15

- D. Correlate with specified maintenance periods to provide maintenance to date of acceptance. Once the schedule is accepted, revise dates only as approved in writing, after documentation of reasons for delays.

#### 1.07 – Warranty:

- A. Contractor shall warranty all seeding until final acceptance of grass stand.

1.08 – Maintenance:

- A. Maintenance of seeding to be performed by the installer includes:
  - 1. Watering until establishment and provisional acceptance.
  - 2. Regrading and replanting eroded areas until final acceptance.
  - 3. Seeding or patching sparse or bare areas until final acceptance.
  - 4. Mowing until provisional acceptance.
  
- B. Maintain seeded areas immediately after placement until grass is accepted.

**Part 2 – Products:**

2.01 – Seed:

- A. General Mix for all Upland Lawn Areas and General Soil Stabilization: Pure, live, fresh seed from commercial sources meeting and labeled in accordance with State and Federal Laws, Rules and Regulations.

New seeding mixture for all upland lawn areas and general soil stabilization shall conform to the grass types and percentages similar to that seed mix entitled “URI #2 Improved Seed Mix,” or approved equal. Seed Mix Shall consist of 40% Creeping Red Fescue, 20% Improved Perennial Rye Grass, 20% Improved Kentucky Bluegrass, and 20% Kentucky Blue 98/85.

Application Rate of Seed shall be in accordance with seed supplier’s recommendations for the particular seed mix.

- B. Native Warm Season Grasses and Wildflower Seed Mix: Pure, live, fresh seed from commercial sources meeting and labeled in accordance with State and Federal Laws, Rules and Regulations.

New seeding mixture where Native Warm Season Grasses Mix is specified on the Contract Drawings shall conform to the grass types and percentages similar to that seed mix entitled “Erosion Control Seed Mix for Dry Soils,” as available through “Prairie Nursery, PO Box 306, Westfield, WI 53964 ([www.prairienursery.com](http://www.prairienursery.com); Tel: 800-476-9453), or approved equal. Seed Mix Shall consist of a minimum of 15 wildflowers and 5 or more grasses, plus Annual Rye nurse crop.

Application Rate of Seed shall be in accordance with seed supplier’s recommendations for the particular seed mix.

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### 2.02 – Weed Control:

- A. Post emergent weed control in Upland Lawn Areas only, and only following approval by Owner's Representative for seeding such as "Trimec", or approved equal.

### 2.03 – Water:

- A. Clean, fresh potable water.

## **Part 3 – Execution:**

### 3.01 – Application Of Seed:

- A. The approved seed mixture shall be applied by the Contractor at a uniform rate in accordance with seed supplier's recommendations for application by means of a hydroseeder device. Provide fiber mulch and fertilizer mix.
- B. Broadcast Seeding may be utilized if approved by Owner's Representative. If Broadcast Seeding is conducted, seed shall be applied by the Contractor at a uniform rate in accordance with seed supplier's recommendations for application, and then topdressed with 2" of Straw Mulch, following spreading of seed.

### 3.02 – Application Of Weed Control:

- A. Contractor shall apply post-emergent weed control to new Upland seeding areas only, and only after approval by Owner's Representative.
- B. If applied, Contractor shall apply post-emergent weed control at 1.2 to 1.5 ounces per 1,000 square feet.
- C. If applied, apply post-emergent weed control according to manufacturer's recommendations.

### 3.03 – Acceptance of Seeding:

- A. The Owner's Representative shall inspect the seeded lawn area for acceptance upon written request by the Contractor. The request shall be received at least ten (10) days before the anticipated date of inspection.
- B. For General Lawn Areas and Soil Stabilization only, or as requested by the Owner's representative, Contractor to provide a minimum of one (1) mowing with sharp, reel type mowing units one day prior to the Owner's Representative anticipated date of inspection. Mowing shall not remove more than one third of the grass blade.

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C. If the seeded/sodded lawn area is in satisfactory condition, Provisional Acceptance will be obtained, and the Contractor's care and maintenance responsibilities will end. If the growth of grass is unsatisfactory, the Contractor shall reseed until an acceptable stand of grass is achieved. The Contractor shall fertilize the seeded areas if, in the Owner's Representative's opinion, it is needed in order to achieve an acceptable lawn area.

1. Provisional Acceptance: Provisional acceptance period shall be defined as the time when a good, healthy uniform growth of grass has been established.

a. Provisional acceptance will not occur until the seeded areas are well established, exhibiting a vigorous growing condition, devoid of bare spots greater than Six (6) Square Inches and have been mown at least twice.

b. It will be the Contractor's responsibility to maintain seeding/sodding in an approved condition until provisional acceptance.

c. The Contractor shall keep all seeded areas watered and in good condition, reseeding if and when necessary during the period leading to provisional acceptance. During this time, the contractor shall be responsible for the cost of water utilized to obtain an acceptable stand of grass.

d. Mowing of seeded areas in General Lawn Areas (or as requested by Owner's Representative) :

i. Initial or Spring Mowing: Shall take place when lawn areas (new seeding, established lawns) have grown to a blade height of 3". Turf shall be cut using a mower with sharp cutting blades. Height of cut shall be set at 2-1/2". This height of cut shall be maintained through spring period of growth (April through mid-June). Frequency of mowing during this growth period shall be at every seven (7) days, or whenever grass growth exceeds 3". Regardless of how quickly the turf grows during this period, NO MORE THAN ONE THIRD of the leaf shall be removed in any one mowing. Adherence to this procedure shall require additional and more frequent mowings beyond the established regimen (once every seven (7) days, etc.), especially during and after rainy periods, or climatic conditions promoting rapid growth.

ii. Summer: The height of cut shall be raised to 3-1/2" commencing with the start of summer. This height of cut shall be maintained until the return of cooler temperatures in early September. Frequency of mowing during this summer period shall be once every seven (7) to

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ten (10) days. A longer interval than seven (7) days may be necessary if turf growing rate slows down in response to summer heat, drought, etc.; Contractor shall be responsible for determining the proper cutting interval that conforms best to local growing conditions and climatic factors, but period between cuts shall not exceed ten (10) days without prior approval of Owner.

- iii. Fall: The height of cut shall be reduced to 2-1/2" in mid-September when there is a noticeable change towards cooling daytime temperatures, usually between September 10 and 20. Beginning on September 10 the frequency of cut shall be set at one (1) cut every seven (7) days. This schedule shall remain in effect until mid-October.
  - iv. Late Fall: Between mid-October (October 15) and November 10, the Contractor shall begin to lower the height of cut in incremental stages so that the final cut shall establish the winter dormant height of turf at one (1) inch. Mowing frequency during this period shall be set at one (1) cut every twelve (12) to fifteen (15) days depending on turf growth rates. Starting on October 15, it is expected that the lower the grass to its final height of one (1) inch. No more than one-third of the leaf shall be removed in any one mowing operation. Final cut shall be performed on or prior to November 10, unless an extension date is approved by Owner.
- e. Watering of seeded areas:
- i. During the period leading to provisional acceptance, Contractor shall water turf as necessary to maintain an adequate supply of moisture within the root zone. An adequate supply of moisture is the equivalent of one (1) inch of absorbed water per week that is delivered at weekly intervals in the form of natural rain or is augmented as required by periodic waterings. During this time, the contractor shall be responsible for the cost of water utilized to obtain an acceptable stand of grass.
- D. Final Acceptance: Final acceptance period shall be defined as the elapsed time between provisional acceptance and final close-out of the project. Final acceptance will not be granted until all seeded lawn areas are in satisfactory condition.

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1. All seeded areas shall be guaranteed by the Contractor for not less than one (1) growing season from the time of provisional acceptance. Growing season shall be defined as follows:
  - a. If provisional acceptance is received during April, May, June, or July, next growing season shall end on October 15.
  - b. If provisional acceptance is received during September, October, November or December, next growing season shall end on June 1.
2. At the end of the guarantee period, inspection will be made by the Owner's Representative upon written request submitted by the Contractor at least ten (10) days before the anticipated date. Lawn areas not demonstrating satisfactory stands as outlined above (except if damaged by vandalism) as determined, by the Owner's Representative shall be renovated, reseeded or resodded and maintained meeting all requirements as specified herein.
3. After all necessary corrective work has been completed, the Owner's Representative shall certify in writing the final acceptance of the lawn area.
4. Decision of Owner as to necessity to replace lawns or repair any defects on workmanship or cause of any destruction or loss, impairment or failure to flourish, shall be conclusive and binding upon Contractor. Replacements shall be the same as specified. All replacements shall be planted as specified herein at Contractor's expense.
5. "Vandalism", as noted above, is intended to mean any acts, whether intentional or accidental, by other persons, which clearly result in damage, and which may reasonably be considered to be beyond the Contractor's reasonable control, as determined by the Owner's Representative.

#### 3.04 – Clean Up:

- A. Absolutely no debris may be left on the site. Excavated material shall be removed as directed. Repair any damage to site or structures to restore them to their original condition, as directed by the Owner's Representative, at no cost to the Owner.

### **End of Section**

# TREES AND SHRUBS

## Section 02830

### Part 1 – General:

#### 1.01 – Related Documents:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Special Conditions, and related parts of the Technical Specifications apply to the work of this section.
- B. Applicable portions of these Specifications, including, but not necessarily limited to:
  - Section 02100 “Site Clearing and Preparation”
  - Section 02200 “Earthwork”
  - Section 02210 “Site Grading & Drainage”
  - Section 02270 “Slope Protection and Erosion Control”
  - Section 02810 “Soil Preparation for Lawn Establishment”

#### 1.02 – Description Of Work:

- A. Contractor shall provide all materials, equipment and labor necessary to complete the work as indicated on the Drawings or as specified herein.
- B. The principal work of this Section includes, but may not be limited to the following:
  - 1. Planting
  - 2. Setting Plants
  - 3. Pruning of New Plant Material
  - 4. Spraying
  - 5. Fertilizing
  - 6. Guying and Staking
  - 7. Tags and Labels
  - 8. Mulching Plants
  - 9. Watering
  - 10. Maintenance of Plants
  - 11. Plant Replacement Guarantee

#### 1.03 – References:

- A. American Standard for Nursery Stock, latest edition, as prepared by the American Nursery and Landscape Association.

## TREES AND SHRUBS

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#### 1.04 – Quality Assurance:

- A. Contractor shall subcontract planting work to a firm specializing in such work unless Contractor is fully experienced and qualified.
- B. An arborist, licensed by the State in which the work is to be performed, is required for all pruning work.
- C. All plants are to be clearly tagged noting genus and species as well as size as marked by nursery and other standard products sealed and delivered unbroken.
- D. Contractor shall not make substitutions without written approval. If specified landscape material is not available, obtain approval for substitution from the Owner's Representative.

#### 1.05 – Submittals:

- A. Certified analysis and source of off-site plantable soil to be provided by Contractor. Certification shall list soil additives, rates and type.
- B. Certifications and/or labels of proposed plant material substitutions common and scientific names of each.

#### 1.06 – Product Delivery, Storage and Handling:

- A. Contractor shall protect all products from weather or other damaging or deteriorating conditions.
- B. Plants which have been damaged or have deteriorated in transit or storage are not acceptable.
- C. Contractor shall keep plants moist, fresh and protected against exposure to sun, wind, and freezing temperatures whether in the receiving yard, in transit, while being handled or at the job site awaiting planting.
- D. Contractor shall deliver trees and shrubs after preparations for planting have been completed and plant immediately.

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- E. Planting Schedule: Prepare a proposed planting schedule. Schedule dates for each type of landscape work during normal seasons for such work. Unless otherwise approved by Owner's Representative, Acceptable Planting Dates shall be as follows:

Deciduous Plant Materials:            March 1 through June 15 or  
September 15 through December 15

Evergreen Plant Materials:            April 1 through May 15  
August 15 through October 15

All plant material shall be planted during the Spring or Fall planting season as indicated above. No planting shall be performed in frozen ground, or when snow covers the ground. The Owner's Representative may suspend work when he/she determines soil or weather conditions are unsuitable for planting operations. The Contractor may resume work when directed by the Owner's Representative.

- F. Correlate with specified maintenance periods to provide maintenance to date of acceptance. Once the schedule is accepted, revise dates only as approved in writing after documentation of reasons for delays.
- G. Coordination with Lawns: Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to Owner's Representative. If planting of trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

#### 1.07 – Warranty:

- A. Warranty: Include coverage of plants from death or unhealthy conditions for a period of one (1) full year, including one (1) continuous growing season. Such period shall commence with date of final acceptance.
- B. Replacements: Replacement plants shall be of same size and species as specified, planted in the next growing season, with a new one (1) year warranty and an extended maintenance service commencing on date of replacement.

#### 1.08 – Maintenance:

- A. Maintenance of tree and shrub planting to be performed by the Contractor shall include:
1. Watering, cultivating and mulching.
  2. Tightening and repairing of stakes.

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3. Replacing of dead material.
4. Resetting plants to proper grades or to upright position.

#### **Part 2 – Products:**

##### 2.01 – Plantable Soil:

- A. As defined by Section M.18.02 of the RIDOT Standard Specifications.

##### 2.02 – Peat Humus:

- A. Natural peat humus, free from excessive amounts of zinc, low in wood content, free from hard lumps and in a shredded or granular form; acidity range approximately 5.5 pH to 7.6 pH and organic matter not less than eighty five percent (85%), minimum water absorbing ability shall be two hundred percent (200%) by weight on an oven-dry basis.

##### 2.03 - Compost:

- A. Compost shall be a well decomposed, stable, weed free organic matter source. It shall be derived from agricultural, food, and/or yard trimmings. The product shall contain no substances toxic to plants and shall be reasonably free (less than 1 percent by dry weight) of man-made foreign matter. The compost will possess no objectionable odors and shall not resemble the raw material from which it was derived. Compost shall have a pH between 5.5 pH and 8.0 pH and a moisture content between 35 percent and 55 percent. The particle size shall pass through a 1-inch screen or smaller. It must be stable to highly stable, pass growth screening and have a soluble salt concentration at 2.5 d s/m or less for soil blend. The compost must meet US EPA Part 503 exceptional quality concentration limits for trace elements/heavy metal.

##### 2.04 – Fertilizer:

- A. Soil within and around plant pit shall be tested for pH and Fertility by a certified soil testing laboratory prior to application of Fertilizer.
- B. Commercial fertilizer shall be a product complying with the State and the U.S. Fertilizer Laws, delivered to the site in the original, unopened, standard size containers which shall show weight, analysis of the product, name of the manufacturer, and bear the manufacturer's Certificate of Compliance covering analysis.

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- C. Composition of fertilizer, pertaining to but not necessarily limited to percentages of Nitrogen (N), Phosphoric Acid (p), and Potassium (K), shall be as determined and recommended by Certified Soil Analysis to provide optimum fertility.

#### 2.04 – Mulch:

- A. Clean, well-aged shredded pine bark free from weeds or other extraneous material. Mulch shall be derived from evergreen tree bark aged a minimum of 6 months and no more than 18 months. The bark shall be shredded so that the resulting pieces are no more than 1/4-inch thick and no longer than 3 inches. The mulch shall be free of stringy material and shall not contain an excess of fine particles. The mulch shall be dark brown in color, free of leaves, twigs, sod, weeds, shavings, and other foreign materials which are injurious to healthy plant growth.

#### 2.05 – Water Retention Gel:

- A. Water Retention Polymer Gel such as “Hydrocel” or “Horta-sorb” or equal.

#### 2.06 – Antidesiccant:

- A. Antidesiccant shall be an emulsion similar to "Wiltproof" or approved equal, or other material which, when mixed with water, will provide a protective film over plant surfaces (leaf) which shall reduce or retard the loss of moisture through transpiration. Antidesiccant shall be delivered in containers clearly marked with the manufacturer's name and instructions. Antidesiccant shall be mixed and applied according to the manufacturer's guidelines.

#### 2.07 – Staking Materials:

- A. Guy Webbing: Guy webbing shall be a low abrasion, woven, fiber webbing with a break strength of 900 pounds or better. The width of the webbing shall be no less than 5/8-inch nor greater than 3/4-inch. The length shall be sufficient enough to be attached to the tree trunk and stake.
- A. Stakes: Stakes for tree supports shall be of a hardwood source, free of knots, insects and fungi. Stakes shall be of uniform size and shape and shall be a minimum of 2 inches square and be of a length sufficient enough to be driven into the ground 3 feet and have an above ground stake height of 8 inches above the point of attachment of the guy webbing. The bottom of the stake shall be pointed with a taper of no less than 4 inches. The type of stakes shall be uniform throughout the job.

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#### 2.08 – Water:

- A. Clean, free potable water.

#### 2.09 – Plant Materials:

- A. Plant materials shall be of size and caliper required and comply with the Horticultural Standards of The American Association of Nurserymen in all respects.
- B. Plants of other kinds than those named in the Plant Schedule on the Drawings shall not be accepted, unless otherwise approved by Owner's Representative.
- C. Unless otherwise approved by the Owner's Representative, all plants shall be nursery grown in accordance with good horticultural practices and shall have been grown under climatic conditions similar to those in the locality of the project for at least two (2) years. They shall have been transplanted or root pruned at least nine (9) months previous to moving to the site.
- D. Replacement plants larger in size than existing may be used if approved by the Owner's Representative, provided use of larger plants does not increase Contract Price.
- E. If use of larger plants is approved, increase ball of earth of spread of roots in proportion to size of plant.
- F. Pruning: All plants and all tree trunks shall be measured when branches are in the normal position. Dimensions for height and requirements for spread, where specified, refer to main body of plant and not from branch-tip to branch-tip. Desired clear unbranched height of tree trunks may be created provided necessary pruning of lower branches does not leave unsightly scars or otherwise damaging trunk.

### **Part 3 – Execution:**

#### 3.01 – Planting:

- A. Layout: Plant pit and bed locations shall be staked on ground by Contractor and approved prior to excavation. Adjustments in locations and outline shall be made as directed by Owner's Representative. Labor, equipment and new smooth stakes are to be furnished by the Contractor for this purpose.

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- B. Excavation: Planting beds and pits shall conform to the approved staked locations and outlines. They shall be neatly formed by means of spades and/or other approved tools. Remove from the site immediately, sod, weeds, roots and other objectionable excavated material unsuitable for backfill.
- C. Pits and Beds: Size of all planting pits and beds shall be as indicated on Detail Drawings: Any excavation in excess of that required shall be replaced with plantable soil.

#### 3.02 – Setting Plants:

- A. Set plants plumb and at such a level that after settlement they bear the same relation to the surrounding ground as they bore to the ground from which they were dug. Settle backfill material for plants, thoroughly and properly, by firming or tamping. Accompany backfilling with thorough watering unless otherwise approved. Form saucer capable of holding water around individual plants, exclusive of plant beds, by placing ridges of plantable soil around each or as directed by the Owner's Representative.
- B. Balled and Burlapped Plants: Place balled or burlapped plants carefully in the prepared pits so that the ball rests on undisturbed subsoil. Then partially fill new clean backfill around the plant and thoroughly tamp. Cut and Remove Burlap from the top 1/2 of root ball. Synthetic "burlap" shall be cut away and removed in its entirety without damage to the root ball. The remainder of new, clean backfill shall then be placed in the hole and firmed.
- C. Bare Root Plants: Spread out roots of the bare root plants in a natural position over mound in pit. Cut off broken or frayed roots cleanly. New, Clean backfill shall be sifted through them and solidly firmed.
- D. Container Grown Materials: Remove plant from container and "butterfly" root ball or otherwise spread out roots on setting mound. New, clean backfill shall be sifted through them and solidly firmed.

#### 3.03 – Pruning of New Plant Material:

- A. After planting, prune only broken or deformed branches and in such manner as to preserve natural character of plant.
- B. Perform all pruning with sharp tools, with cuts flush and clean. Use of axes or pruning is unacceptable.

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- C. Trees which have had their leaders cut, or so damaged that cutting is necessary, will not be accepted. There shall be no abrasion of bark, nor fresh cuts of limbs over 1/2", unless otherwise approved by Owner's Representative.

#### 3.04 – Spraying:

- A. Spray plantings with antidesiccant with discretion, when necessary, and as approved by the Owner.

#### 3.05 – Fertilizing:

- A. Contractor to have the planting bed tested for soil fertility by an Approved Soil Testing Laboratory, and a complete fertilization program will be recommended by the testing laboratory and Owner's Representative for the initial fertilization.
- B. Fertilizer shall be applied by Contractor at a rate required by soil fertility test.
- C. Contractor shall apply fertilizer according to manufacturer's recommendations.

#### 3.06 – Guying and Staking:

- A. Immediately after planting, stake trees as indicated on Detail Drawing indicated or approved by the Owners Representative.
- B. Place stakes exercising care not to damage rootball.
- C. Guy trees to each stake as indicated on the Detail Drawings, with arbor tape or guy webbing. Draw guys taut, through use of turnbuckles installed and securely fastened to guys.

#### 3.07 – Tags and Labels:

- A. Leave all tree tag and label seals unbroken and visible on plant material until final inspection. Remove all labels and seals, etc., immediately after final inspection.

#### 3.08 – Mulching Plants:

- A. Application of mulch should only occur after planting operations have been completed and initial watering has taken place.
- B. Mulch shall be applied in all planting beds, as indicated on the Contract Drawings.

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#### 3.09 – Watering:

- A. The plants shall be watered immediately following planting, preferably when two thirds of the backfill has been placed so all air pockets are removed and the plant properly settle.
- B. Soak the plants thoroughly again within a twenty four (24) hour period after the initial planting.
- C. Additional waterings shall be made at least once every week unless otherwise directed until final acceptance of the plant material.

#### 3.10 – Maintenance:

- A. Contractor is responsible for protection and maintenance of all work prior to final acceptance. No plants will be accepted unless they show a healthy growth and satisfactory condition.

#### 3.11 – Plant Replacement Guarantee:

- A. Guarantee that, upon completion and final acceptance plantings conform to requirements of Contract Documents and that all plants are healthy and will remain so for a period of one (1) year. Such period shall commence with date of final acceptance.
- B. At any time within period of guarantee, Contractor shall replace any plantings which for any reason, other than vandalism, has died or is in a dying condition, or which has failed to flourish in such a manner or to such a degree that its usefulness or appearance has been impaired.
- C. The Owner will not maintain plantings until after guarantee period. Contractor shall not have any claim that materials have failed to flourish as a result of Owner's maintenance operations, or lack of maintenance and shall abide by terms stated herein for guarantee and replacement of plant materials.
- D. Decision of Owner as to necessity to replace any plant materials or repair any defects on workmanship, or cause of any destruction or; loss, impairment or failure to flourish, shall be conclusive and binding upon Contractor. Replacements shall be of same species and size as specified on Plant List. All plant replacement shall be inspected, sealed, furnished, planted and mulched as specified herein at Contractor's expense.

**TREES AND SHRUBS**  
**Section 02830**

- E. "Vandalism", is intended to mean any acts, whether intentional or accidental, by other persons occurring following final acceptance, which clearly result in breakage or other damage to individual plants or plant beds, and which may reasonably be considered to be beyond contractor's reasonable control, as determined by the Owner's Representative.

**End of Section**

**Part 1 – General:**

1.01 – Work Included in this Section:

- A. The work of this section includes all labor and materials required for the furnishing, setting in place and completion of the following:
  - 1. Boulder Retaining Wall
  - 2. Rip-Rap Shore (toe-of-slope) Protection
  - 3. Granit Curbstone Erosion Control

1.02 – Related Documents:

- A. Drawings and General Provisions of Contract, including General and Supplementary conditions and Division 1 Specification Sections, apply to work of this Section.
- B. Applicable portions of these Specifications, including, but not necessarily limited to:
  - Section 02200 “Earthwork”
  - Section 02270 “Slope Protection and Erosion Control”
  - Section 02550 “Special Surfaces”

1.03 – Quality Assurance:

- A. All work shall be in accordance with all Local, State, and Federal Regulations.

1.04 – Submittals:

- A. Product Data: Submit data for the stone required, including source and certification that it complies with the specified requirements.
- B. Submit five (5) full color images, not less than 8 inches by 11.5 inches in size, of stone to be used to illustrate color and finish. Each image shall be of a different angle and/or stockpile of material intended to be used. Include in each set the full range of exposed color and texture to be expected in the completed work.

**Part 2 – Products:**

2.01 – Retaining Wall Boulders:

- A. Boulders shall be in accordance with Section M.10 of RIDOT Standard Specifications, sized R-6 to R-8.

2.02 – Filter Fabric:

- A. Filter Fabric shall be Terratex-SD Fabric, or approved equal.

2.03 – Stone Rip-Rap Shore (toe-of-slope) Protection:

- A. “Riprap” for use to provide shore/toe-of-slope protection and mitigate erosion shall conform to the requirements of RIDOT M.10.03, sized R-5 to R-6.

2.04 – Granite Curbstone Erosion Control:

- A. Curb Stones for use to provide erosion control as illustrated on contract drawings shall conform to the requirements of RIDOT M.09.05.3.

**Part 3 – Execution:**

3.01 – Condition of Substrate:

- A. Examine all parts of the supporting structure, underlying base material, and the conditions under which stonework is to be installed. Do not proceed with the installation until unsatisfactory conditions have been corrected.

3.02 – Preparation:

- A. Clean stone before setting by thoroughly scrubbing with fiber brushes followed by drenching with clean water. Use only mild detergents that contain no caustic fillers or abrasives. The use of acid or other solutions which may cause discoloration is expressly prohibited.

3.03 – Installation:

- A. Execute stonework with skilled mechanics.
- B. Employ skilled stone fitters at the site to do necessary field cutting as stone is set.

## **STONEMWORK**

### **Section 04400**

- C. Core-Holing or cutting of tone, where applicable, shall be done by skilled stone fitters, and at Contractor's discretion. Contractor shall repair any damaged portions of the wall resulting from construction procedures at his own expense. Contractor shall repair any and all damage to site elements to the approval of the Owner's Representative.
- D. Install stonework as indicated on contract drawings and details.

#### 3.04 – Adjust and Clean:

- A. Remove and replace stone units which are broken, chipped, stained or otherwise damaged, in the opinion of the Owner's Representative. Reseal defective and unsatisfactory joints as required to provide a neat, uniform appearance.
- B. Clean new stonework not less than six days after completion of work, using clean water and stiff-bristle brushes. Do not use wire brushes, acid type cleaning agents or other cleaning compounds with caustic or harsh filler.
- C. Protect stonework from damage during subsequent construction operations.

**End of Section**