

**DOCUMENTS AND SPECIFICATIONS**  
**FOR CONSTRUCTION OF**  
**SOUTH MAIN STREET ROADWAY PROJECT**



**FOR THE**  
**CITY OF FRANKLIN, NEW HAMPSHIRE**

**JANUARY 29, 2024**

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**DIVISION 0**

## SECTION 00010

### INVITATION TO BID

The City of Franklin invites sealed bids for the South Main Street Roadway Project until noon on February 29, 2024 at the Office of the City Manager, 316 Central Street, Franklin, NH 03235 at which time and place all Bids will be publicly opened and read. Bids submitted after this time or those that do not comply with the bid requirements will not be accepted.

The work includes the milling pavement, reclamation of pavement, curbs, crushed gravel, sidewalks, grading, curb ramps, paving, traffic control, erosion and dust control, and miscellaneous work located in Franklin, New Hampshire.

Any pre-bid questions should be directed to the Municipal Services Director, Justin Hanscom, at [jhanscom@franklinnh.org](mailto:jhanscom@franklinnh.org) or call (603)934-4103. Bidders may visit by appointment at the Municipal Services Building, 43 West Bow Street, Franklin, NH 03235 to discuss the project details.

Contract Documents (Specification book only, no plans) may be examined at the Municipal Services Building, 43 West Bow Street, Franklin, NH 03235; Construction Summary of NH, 734 Chestnut Street, Manchester, NH 03104; and Associated General Contractors of NH, 48 Grandview Road, Bow, NH 03304. Contract Documents may be obtained only from Municipal Services ([jhanscom@franklinnh.org](mailto:jhanscom@franklinnh.org) or Deputy Director Rocky Marsh, [rmarsh@franklinnh.org](mailto:rmarsh@franklinnh.org)) at no cost in PDF form and paper copies of the plans and specifications can be provided, if required, at non-refundable cost of \$75.

Each Bid shall be accompanied by a bid security in the form of a certified treasurer's or cashier's check or Bid Bond in the sum of five (5) percent of the Bid Price.

The Owner reserves the right to reject any or all Bids, should the Owner deem it to be in the public interest to do so. All questions concerning the plans and specifications shall be directed to KVPartners, LLC.

The City of Franklin is an equal opportunity/affirmative action agency. All qualified proposals will receive consideration without regard to race, color, religion, creed, age, sex, or national origin. Minority owned and women owned contractors are encouraged to submit bids.

END OF SECTION

## SECTION 00100

### INSTRUCTIONS TO BIDDERS

#### PART 1 - GENERAL

##### 1.1 BID DOCUMENTS

- A. Complete sets of Bid Documents in the number and for the deposit sum, if any, may be examined and obtained as stated in the Invitation to Bid.
- B. Complete sets of Bid Documents must be used in preparing Bids. Neither the Owner nor the Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of bid documents.

##### 1.2 QUALIFICATIONS OF BIDDER

- A. No award will be made to any Bidder who cannot satisfy the Owner that he has sufficient ability and experience in this class of work and sufficient capital and plant to enable him to prosecute and complete the Work successfully within the time specified. The Owner's decision or judgment on these matters shall be final, conclusive, and binding.
- B. The Owner may make such investigations as it deems necessary, and the Bidder shall furnish to the Owner, under oath if so required, all such information and data for this purpose as the Owner may request.

##### 1.3 EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- A. Bidders must satisfy themselves by personal examination of the site of the Work and by such other means as they may wish, as to the actual conditions there existing, the character and requirements of the Work, the difficulties attendant upon its execution, and the accuracy of all estimated quantities stated in the Bid.
- B. All information given on the Drawings or in the other Contract Documents relating to subsurface and other conditions, natural phenomena, existing pipes, and other structures is from the best sources at present available to the Owner. All such information is furnished only for the information and convenience of Bidders and is not guaranteed.
- C. It is agreed and understood that the Owner does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes or other structures encountered during construction will be the same as those indicated on the Drawings or in the other Contract Documents.
- D. It is agreed further and understood that no Bidder or contractor shall use or be entitled to use any of the information made available to him or obtained in any examination made by him in any manner as a basis of or ground for any claim or demand against the Owner or the Engineer, arising from or by reason of any variance which may exist between the information made available and the actual subsurface or other conditions,

natural phenomena, existing pipes or other structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

#### 1.4 AVAILABILITY OF LANDS FOR WORK

- A. The lands upon which the Work is to be performed including rights-of-way and easements for access thereto and other lands designated for use by the Contractor in performing the Work are identified in the Contract Documents.
- B. Lands required for temporary construction facilities, construction equipment or storage of materials and equipment to be incorporated into the Work not identified in the Contract Documents as specified above are to be obtained and paid for by the Contractor.
- C. The Contractor has no rights of access to lands unless he obtains them from the proper parties.
- D. The Contractor shall not work on property requiring obtaining of an easement until the Owner has obtained the necessary easement.
- E. The Contractor shall have no claim for additional compensation or damage on account of any delay in obtaining the necessary easements.

#### 1.5 OTHER CONTRACTS

- A. It is essential that all parties interested in the project cooperate to the end that the entire project will be brought to a successful conclusion as rapidly as possible, but the Owner cannot guarantee that no interference or delay will be caused thereby. Interference and delay resulting from such cooperation shall not be the basis of claims against the Owner.

#### 1.6 INTERPRETATIONS AND ADDENDA

- A. Answers will be given to prospective Bidders in reply to written questions to clarify the Drawings or Contract Documents if submitted at least 5 days in advance of the bid opening. Any information given to Bidders other than by means of the Drawings and other Contract Documents, including Addenda, as described below, is given informally, for information and the convenience of the Bidder only and is not guaranteed. The Bidder agrees that such information shall not be used as the basis of nor shall the giving of any such information entitle the Bidder to assert any claim or demand against the Owner or the Engineer on account thereof.
- B. The Engineer will set forth as Addenda, which shall become a part of the Contract Documents, such questions received as above provided as in his sole judgment are appropriate or necessary and his decision regarding each. As soon as possible and at least 72 hours prior to the receipt of Bids, he will send a copy of these Addenda to those prospective Bidders and parties known to have taken out sets of the Drawings and Contract Documents.

- C. The Contractor agrees to use and base his/her Bid on the products and methods designated or described in the Specifications as amended by the Addenda.

#### 1.7 BID SECURITY

- A. Each Bid must be accompanied by a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company and payable to the order of the Owner or by a Bid Bond duly executed and acknowledged by the Bidder, as Principal, and by a surety company qualified to do business in New Hampshire and satisfactory to the Owner, as Surety. The check or Bid Bond shall be in the sum of 5% of the Bid amount and shall be enclosed in the sealed envelope containing the Bid.
- B. Each such check or Bid Bond may be held by the Owner as security for the fulfillment of the Bidder's agreements as hereinabove set forth and as set forth in the Bid. Should the Bidder fail to fulfill such agreements his Bid check shall become the property of the Owner or if a Bid Bond was furnished, the Bid Bond shall become payable to the Owner, as liquidated damages; otherwise, the Bid check shall be returned to the Bidder as hereinafter provided; or if the security is a Bid Bond, the Bid Bond shall become null and void.
- C. Bid security's will be returned to all except the three lowest Bidders within five days, Sundays and legal holidays excluded, after the opening of Bids, and to the three lowest Bidders within five days, Sundays and legal holidays excluded, after the Owner and the accepted Bidder have executed the Agreement. In the event that the Agreement has not been executed by both the accepted Bidder and the Owner within 30 consecutive days after the opening of Bids, the Bid security will be returned promptly upon demand of any Bidder who has not been notified of the acceptance of his Bid.
- D. Bid security's accompanying Bids which are rejected will be returned within five days, Sundays and legal holidays excluded, after rejection.
- E. None of the three lowest Bids shall be deemed rejected, notwithstanding acceptance of any Bid, until the Agreement has been executed by both the Owner and the accepted Bidder.

#### 1.8 WITHDRAWAL OF BIDS

- A. Except as hereinafter in this subsection otherwise expressly provided, once his Bid is submitted and received by the Owner for consideration and comparison with other Bids similarly submitted, the Bidder agrees that he may not and will not withdraw it within 120 days after the actual date of the opening of Bids.
- B. Upon proper written request and identification, Bids may be withdrawn only as follows:
  - 1. At any time prior to the designated time for the opening of Bids.
  - 2. Provided the Bid has not theretofore been accepted by the Owner, at any time subsequent to the expiration of the period during which the Bidder has agreed not to withdraw his Bid.

- C. Unless a Bid is withdrawn as provided above, the Bidder agrees that it shall be deemed open for acceptance until the Agreement has been executed by both parties thereto or until the Owner notifies a Bidder in writing that his Bid is rejected or that the Owner does not intend to accept it. Notice of acceptance of a Bid shall not constitute rejection of any other Bid.

#### 1.9 RIGHT TO REJECT BIDS

- A. The Owner reserves the right to reject any or all Bids, should the Owner deem it to be in the public interest to do so.
- B. The Owner may reject Bids which in its sole judgment are incomplete, conditional, obscure or not responsive or which contain additions not called for, erasures not properly initialed, alterations, or similar irregularities, or the Owner may waive such omissions, conditions or irregularities.
- C. If, at the time this contract is to be awarded, all Bids submitted by responsible Bidders exceed the amount of the funds available to finance the contract, the Owner may reject all bids or take any other action deemed to be in the best interest of the Owner.

#### 1.10 COMPARISON OF BIDS

- A. The Owner agrees to examine and consider each Bid submitted in consideration of the Bidder's agreements, as hereinabove set forth and as set forth in the Bid.

#### 1.11 REDUCTION IN SCOPE OF WORK

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

#### 1.12 CONTRACT BONDS

- A. The Bidder whose Bid is accepted agrees to furnish a Performance Bond and Payment Bond, each in the sum of the full amount of the Contract and duly executed by the said Bidder as Principal and by a surety company qualified to do business under the laws of the State of New Hampshire and satisfactory to the Owner, as Surety, for the faithful performance of the Contract and payment for labor and materials. The premiums for such Bonds shall be paid by the Contractor.

#### 1.13 EXECUTION OF AGREEMENT

- A. The Bidder whose Bid is accepted will be required and agrees to duly execute the Agreement and furnish the required Contract Bond within the time limit stated in the Bid after notification that the Agreement is ready for signature.



1.14 INSURANCE CERTIFICATES

- A. The Contractor will not be permitted to start any construction work until he has submitted certificates covering all insurances called for under Supplemental Conditions.

1.15 SALES AND USE TAX

Not Used

1.16 SAFETY AND HEALTH REGULATIONS

- A. This project is subject to all of the Safety and Health Regulations (CFR 29 Part 1926 and all subsequent amendments) as promulgated by the U.S. Department of Labor on June 24, 1974. Contractors are urged to become familiar with the requirements of these regulations.

1.17 BASIS OF AWARD

- A. The Owner reserves the right to award the contract to a Bidder that is not the lowest responsible and responsive Bidder. Although the Bid price will be a substantial factor in the Owner's award, the final award will be based on the Owner's determination, in its sole discretion, of which Bid will be in the best interest of the Owner.
- B. The Owner will evaluate the Bid submitted by Bidders based on the lump sum price/total base bid in such a manner as is deemed to be in the best interests of the Owner.

END OF SECTION

**SECTION 00300**

**BID FORM**

**PART 1 - GENERAL**

**1.1 BID INFORMATION**

- A. Project Identification: South Main Street Improvements - Franklin, NH
- B. Proposal of: \_\_\_\_\_ (hereinafter referred to as Bidder) organized and existing under the laws of the State of \_\_\_\_\_ doing business as a \_\_\_\_\_ (specify corporation; partnership; or individual).
- C. This Bid is Submitted To: City of Franklin
- D. Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with the Owner in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the bid price and within the contract times stated and in accordance with all other terms and conditions of the Contract Documents.
- E. Bidder accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders.
- F. Bidder hereby agrees that this Bid will remain subject to acceptance for 60 days, excluding weekends and legal holidays, after the actual date of the opening of the Bid.
- G. Bidder hereby agrees to sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required within five (5) calendar days after the date of Owner's Notice of Award.
- H. In submitting this Bid, Bidder represents and declares the following:
1. Bidder has examined and carefully studied the Bid Documents.
  2. Bidder acknowledges receipt of the following Addenda (List Addenda by Addendum Number and Date):

| Number | Date |
|--------|------|
|        |      |
|        |      |
|        |      |

3. Bidder has visited and carefully examined the site of the proposed Work and has become thoroughly familiar with and is fully satisfied as to the conditions that exist at the site; the

**BID FORM**

00300-1

character, requirements and extent of the proposed Work, and the difficulties in executing the work that may affect cost, progress, performance and furnishing of the Work.

4. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.
5. Bidder has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site. Bidder accepts the determination of the technical data contained in such reports and drawings upon which Bidder is entitled to rely. Bidder acknowledges that such reports and drawings are not Contract Documents and may not be complete for Bidder's purposes.
6. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and underground facilities) at or contiguous to the site or otherwise which may affect cost progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Bidder and safety precautions and programs incident thereto. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the times, price and other terms and conditions of the Contract Documents.
7. Bidder acknowledges that Owner and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bid Documents with respect to underground facilities at or contiguous to the site.
8. Bidder is aware of the general nature of Work to be performed by Owner and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.
9. Bidder certifies under the penalties of perjury that this Bid is in all respects bona fide, fair and made without collusion or fraud with any other person, firm, joint venture, partnership, corporation or other business or legal entity.
10. Bidder acknowledges that no officer, agent, or employee of the Owner is directly or indirectly interested in this Bid.
11. The Work will be substantially completed by September 27, 2024.

## 1.2 BID

- A. Prices shall be stated in words and figures. In case of discrepancy between price in words and price in figures; the words shall govern.
- B. Prices shall be typewritten or written by hand in ink.

C. The subdivision of the proposed contract price is indicated on the following Bid Schedule. Bidder shall use the Bid Schedule when submitting Bid.

D. This Bid must bear the written signature of the Bidder or an authorized agent of the Bidder. If the Bidder is a corporation or a partnership, the Bid must be signed by a duly authorized officer of such corporation or by a partner and the title of such office must be stated.

Respectfully submitted:

Date \_\_\_\_\_

By \_\_\_\_\_

(Signature and Title of Person Authorized to Sign Bid)

\_\_\_\_\_  
(Name of Bidder)

\_\_\_\_\_  
(Business Street Address)

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

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

(Business Telephone Number)

(SEAL — if Bid is by a corporation)

**BID SCHEDULE**

| <b>Item No.</b> | <b>Item Description</b>                         | <b>Quantity</b> | <b>Unit</b> | <b>Unit Price in Figures</b> | <b>Total Price in Figures</b> |
|-----------------|---|-----------------|-------------|------------------------------|-------------------------------|
| 1               | Mobilization                                    | 1               | LS          |                              |                               |
| 2               | Site Preparation                                | 1               | LS          |                              |                               |
| 3               | Excavation                                      | 1               | LS          |                              |                               |
| 4               | Crushed Gravel                                  | 400             | CY          |                              |                               |
| 5               | Crushed Gravel for Shoulders                    | 60              | CY          |                              |                               |
| 6               | Cold Planing Bituminous Concrete (4")           | 19,000          | SY          |                              |                               |
| 7               | Reclaimed Base Course                           | 19,000          | SY          |                              |                               |
| 8               | Hot Bituminous Pavement Sidewalks and Driveways | 500             | TON         |                              |                               |
| 9               | Hot Bituminous Pavement Base Course             | 2800            | TON         |                              |                               |
| 10              | Hot Bituminous Pavement Wearing Course          | 1600            | TON         |                              |                               |
| 11              | Vertical Granite Curb                           | 110             | LF          |                              |                               |
| 12              | Curb Remove and Reset                           | 1570            | LF          |                              |                               |
| 13              | Bituminous Concrete Curb                        | 2720            | LF          |                              |                               |
| 14              | Cement Concrete Sidewalks                       | 80              | SY          |                              |                               |
| 15              | Adjust Catch Basin                              | 32              | EA          |                              |                               |
| 16              | Adjust Sewer Manhole                            | 11              | EA          |                              |                               |
| 17              | Erosion Control                                 | 1               | LS          |                              |                               |
| 18              | Traffic Control                                 | 1               | LS          |                              |                               |
| 19              | Asphalt and Fuel Adjustment                     | 1               | LS          |                              |                               |
|                 | <b>TOTAL BID AMOUNT</b>                         |                 |             |                              |                               |

## SECTION 00500

### AGREEMENT BETWEEN OWNER AND CONTRACTOR

**THIS AGREEMENT** is by and between the **CITY OF FRANKLIN, NEW HAMPSHIRE** (hereinafter called OWNER) and \_\_\_\_\_ (hereinafter called the CONTRACTOR). OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

#### ARTICLE 1- WORK

1.01.1 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

1. Site preparation including removal of existing signs, trees, vegetation, existing drainage pipe, headwalls and structures as noted; removing and resetting signs, fences, steps; stripping top soils; utility relocations; and all other work required to fully construct the project.
2. Excavating and disposing of any and all materials required including, but not limited to, debris, foundations, topsoils, retaining walls, wood blocks, fences, trenches, pipes, conduits, and any other materials to fully construct the project.
3. Cold planing 4" of bituminous concrete pavement within the roadway limits. Removing and delivering grindings to the City' nearby pit for future City use.
4. Reclaiming existing pavement to a 12" depth and regrading as required to establish roadway pavement grades to match existing grades.
5. Installation or resetting granite curb and installation of bituminous curb.
6. Construction of ADA compliant curb ramps in accordance with NHDOT Standard Details.
7. Construction of bituminous concrete sidewalks and driveways (3" depth).
8. Installing the new bituminous pavement 2 ½" base course (binder mix) with 1 ½" surface course. Tack coat shall be applied with a truck spray unit (pull behind wagons are not acceptable).
9. Hiring and paying all costs associated with an independent testing company (approved by the Town) to complete testing of all materials and water system elements associated with the proposed construction as required by the plans and specifications.
10. Final striping and signing will be completed by the City.

11. Locating, protecting and shoring all existing utilities in accordance with all State and local applicable codes.
12. Repairing and/or relocating any utilities broken or conflicting with construction.
13. Securing the construction site as required for safety.
14. Disposal of excess excavated material not required for fill or backfill. Stockpiling excess materials at locations indicated on the plans or as directed by the Town.
15. Replacement and restoration of disturbed pavement surfaces, curbing, utilities, plantings, light poles and bases, parking lot pavements, grass, posts, fences, signs, bounds etc. within the limits of work and areas outside the limits of work disturbed by construction operations.
16. Completion of all clean-up.
17. The work shall also conform to such additional drawings and addenda to these Specifications and Drawings as may be published or exhibited prior to the opening of the bids and to such drawings in explanation of details, or as may be furnished by the Engineer from time to time during construction.
18. Work and materials which are necessary for construction but which are not specifically referred to in the Specification, or shown on the Drawings, but implied by the Contract shall be furnished by the Contractor at his own cost and expense and shall be such as will correspond with the general character of the work as may be determined by the Engineer, whose decisions as to the necessity for and character of such work and materials shall be final and conclusive. It is the intent of these Specifications and Drawings to produce a complete, finished job whether shown in every detail or not.

## **ARTICLE 2 - THE PROJECT**

- 2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

In general, and without limitation, the work to be done under this Contract includes roadway and water system improvements and all work associated with the Municipal Parking Lot Project in Franklin, NH.

**Project Limits – South Main Street (Routes 3 and 127) from Central Street (north end of concrete island) to Old South Main Street (Route 127).**

## **ARTICLE 3 - ENGINEER**

- 3.01 Not used for this project. Any reference to the Engineer refers to the City's Municipal Services staff assigned to this project.

## **ARTICLE 4 - CONTRACT TIMES**

AGREEMENT

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4.01 *Time of the Essence*

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

4.02 *Schedule to Achieve Substantial Completion and Final Payment*

- A. The Work will be substantially completed by **October 20, 2023** and ready for final payment in accordance with paragraph 15.06 of the General Conditions.

4.03 *Liquidated Damages*

- A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the time(s) specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 11.08 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration preceding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER \$500.00 for each day that expires after the time specified in paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

**ARTICLE 5 - CONTRACT PRICE**

- 5.01 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to paragraphs 5.01.A and 5.01.B below:

- A. For all Work a Total Contract Amount of:

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All specific cash allowances are included in the above price and have been computed in accordance with paragraph 11.02 of the General Conditions.

- B. For all Work, at the prices stated in CONTRACTOR's Bid, attached hereto as an exhibit.

**ARTICLE 6 - PAYMENT PROCEDURES**

6.01 Submittal and Processing of Payments

CONTRACTOR shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.



#### *6.02 Progress Payments, Retainage*

- A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment within 30 days of receipt of an approved Application for Payment each month during performance of the Work as provided in paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established in paragraph 2.05 of the General Conditions or, in the event there is no schedule of values, as provided in the General Requirements.
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER may determine or OWNER may withhold, in accordance with Article 15 of the General Conditions:
    - a. 90% of Work completed (with the balance being retainage); and
    - b. 90% of cost of materials and equipment not incorporated in the Work but delivered and suitably stored in a location and manner agreed to in writing and pursuant to Article 15 of the General Conditions (with the balance being retainage).
  2. Upon Substantial Completion, OWNER shall pay an amount sufficient to increase total payments to CONTRACTOR to 90% of the Work completed, less such amounts as ENGINEER shall determine in accordance with paragraph 15.01 of the General Conditions.

#### *6.03 Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with paragraph 15.06 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 15.06. However, CONTRACTOR shall not make application for final retainage payment until after the date specified for the end of the Correction Period, as provided in paragraph 15.08.

#### **ARTICLE 7 - INTEREST**

- 7.01 All money not paid when due as provided in Article 15 of the General Conditions shall bear interest at the rate of 18 % per year.

#### **ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS**

- 8.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:
- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bid Documents.

- B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. CONTRACTOR has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in paragraph 5.03 of the General Conditions.
- E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.
- F. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.
- J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

## ARTICLE 9 – CONTRACT DOCUMENTS

### 9.01 *Contents*

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 00500-1 to 00500-8, inclusive);
  - 2. Performance Bond (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
  - 3. Payment Bond (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
  - 4. General Conditions (pages 00700-1 to 00700-71, inclusive);
  - 5. Supplementary Conditions (pages 00800-1 to 00800-3 inclusive);
  - 6. Specifications as listed in the table of contents of the Documents and Specifications for the South Main Street Roadway Project for the City of Franklin, New Hampshire dated May 16, 2023.
  - 7. Drawings (not used).
  - 8. Addenda (not applicable);
  - 9. Exhibits to this Agreement (enumerated as follows):
    - a. Notice to Proceed (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
    - b. CONTRACTOR's Bid (pages 00300-1 to 00300-4, inclusive);
  - 10. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
    - a. Written Amendments;
    - b. Work Change Directives;
    - c. Change Order(s).
- B. The documents listed in paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.

## ARTICLE 10 - MISCELLANEOUS

### 10.01 *Terms*

- A. Terms used in this Agreement will have the meanings indicated in the General Conditions.

10.02 *Assignment of Contract*

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

10.03 *Successors and Assigns*

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

10.04 *Severability*

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

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in triplicate. One counterpart each has been delivered to OWNER, CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed, initialed or identified by OWNER and CONTRACTOR or identified by ENGINEER on their behalf.

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

**OWNER:**

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

(CORPORATE SEAL)

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

Address for giving notices: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Designated Representative:

Name: \_\_\_\_\_

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

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

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

email: \_\_\_\_\_

**CONTRACTOR:**

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

(CORPORATE SEAL)

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

Address for giving notices: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Designated Representative:

Name: \_\_\_\_\_

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

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

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

email: \_\_\_\_\_

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

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

Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
  - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
  - d. A demand for money or services by a third party is not a Claim.
11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions,

including sending and receipt; (c) printing of the transmitted Electronic Document by the recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

- 22. *Engineer*—The individual or entity named as such in the Agreement.
- 23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
- 24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
  - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
  - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
  - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
- 25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
- 26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
- 27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
- 28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
- 29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
- 30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
- 31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
- 32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and

start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals.
36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is

intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
  - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
  - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

## 1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:
  - 1. does not conform to the Contract Documents;
  - 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  - 3. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
  - 1. The word "furnish," when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  - 2. The word "install," when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  - 3. The words "perform" or "provide," when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
  - 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.



- F. *Contract Price or Contract Times*: References to a change in "Contract Price or Contract Times" or "Contract Times or Contract Price" or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term "or both" is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2—PRELIMINARY MATTERS

### 2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor's Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner's Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

### 2.02 *Copies of Documents*

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

### 2.03 *Before Starting Construction*

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

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

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

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

#### 2.05 *Acceptance of Schedules*

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

#### 2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from

the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

### **ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

#### **3.01 Intent**

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
  - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
  - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

#### **3.02 Reference Standards**

- A. *Standards Specifications, Codes, Laws and Regulations*
  - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  - 2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities

of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies*

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

#### B. *Resolving Discrepancies*

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

### 3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the

Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

#### 3.05 *Reuse of Documents*

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

### ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

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

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

#### 4.02 *Starting the Work*

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

#### 4.03 *Reference Points*

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

#### 4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

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

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
  - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  - 2. Abnormal weather conditions;
  - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work

at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and

4. Acts of war or terrorism.
- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
  2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
  3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
  2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
  3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
  4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
  5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.

- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

## ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

### 5.01 *Availability of Lands*

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

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

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

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
- 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work,



or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

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

#### 5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
  - 1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
  - 2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
  - 3. Technical Data contained in such reports and drawings.
- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.
- C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.
- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
  - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
  - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;

3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

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

A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
2. is of such a nature as to require a change in the Drawings or Specifications;
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

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

B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
  - a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
  - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
  - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
  - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;
  - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
  - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

2. complying with applicable state and local utility damage prevention Laws and Regulations;
  3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
  4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
  5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
  2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
  3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
  4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a

preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

**F. Possible Price and Times Adjustments**

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
  - a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
  - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
  - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

**5.06 Hazardous Environmental Conditions at Site**

**A. Reports and Drawings:** The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

**B. Reliance by Contractor on Technical Data Authorized:** Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of

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

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
  2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto; and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor

may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.

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

## **ARTICLE 6—BONDS AND INSURANCE**

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

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.

- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and "Occupational Accident and Excess Employer's Indemnity Policies," are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon



request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
- F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
- H. Contractor shall require:
  - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
  - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.

- K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.
- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

#### 6.03 Contractor's Insurance

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
  - 1. include at least the specific coverages required;
  - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
  - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
  - 4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and
  - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
  - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;

2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);
4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

**6.04 Builder's Risk and Other Property Insurance**

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.
1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
  2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising

out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

**6.06** *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

**ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**

**7.01** *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

**7.02** *Supervision and Superintendence*

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

### 7.03 *Labor; Working Hours*

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

### 7.04 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

### 7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal"

item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment Engineer determines that the proposed item:
    - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
    - 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
    - 3) has a proven record of performance and availability of responsive service; and
    - 4) is not objectionable to Owner.
  - b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
    - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
    - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

#### 7.06 Substitutes

- A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for

review of proposed substitute items of equipment or material from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
  - a. will certify that the proposed substitute item will:
    - 1) perform adequately the functions and achieve the results called for by the general design;
    - 2) be similar in substance to the item specified; and
    - 3) be suited to the same use as the item specified.
  - b. will state:
    - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
    - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
    - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
  - c. will identify:
    - 1) all variations of the proposed substitute item from the item specified; and
    - 2) available engineering, sales, maintenance, repair, and replacement services.
  - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.



- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall

initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

#### 7.08 *Patent Fees and Royalties*

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

employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

**7.09 Permits**

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

**7.10 Taxes**

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

**7.11 Laws and Regulations**

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

#### 7.12 *Record Documents*

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

#### 7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;
  - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with

them in the protection, removal, relocation, and replacement of their property or work in progress.

- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

#### 7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 7.15 *Emergencies*

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

#### 7.16 *Submittals*

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

1. Before submitting a Shop Drawing or Sample, Contractor shall:
  - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determine and verify:
    - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
    - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

- 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
  - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
  2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.
  3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
    - a. Contractor shall submit the number of copies required in the Specifications.
    - b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.
  2. *Samples*
    - a. Contractor shall submit the number of Samples required in the Specifications.
    - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.
  3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
  4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.
  5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
  6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
  7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
  8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.
- D. *Resubmittal Procedures for Shop Drawings and Samples*
1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.
  2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
  3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

*E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
  - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
  - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
  - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.
  - d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

*7.17 Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
  1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
  2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is



not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:

1. Observations by Engineer;
  2. Recommendation by Engineer or payment by Owner of any progress or final payment;
  3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. Use or occupancy of the Work or any part thereof by Owner;
  5. Any review and approval of a Shop Drawing or Sample submittal;
  6. The issuance of a notice of acceptability by Engineer;
  7. The end of the correction period established in Paragraph 15.08;
  8. Any inspection, test, or approval by others; or
  9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

#### **7.18 Indemnification**

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable:
- B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

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

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.
- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
  - 1. Checking for conformance with the requirements of this Paragraph 7.19;
  - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
  - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

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

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

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice

thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.

- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

#### 8.02 *Coordination*

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

#### 8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has

arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
  - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
  - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

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

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

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

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

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

### **9.03    *Furnish Data***

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

### **9.04    *Pay When Due***

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

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

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

### **9.06    *Insurance***

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

### **9.07    *Change Orders***

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

### **9.08    *Inspections, Tests, and Approvals***

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

### **9.09    *Limitations on Owner's Responsibilities***

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

9.10 *Undisclosed Hazardous Environmental Condition*

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

9.11 *Evidence of Financial Arrangements*

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

9.12 *Safety Programs*

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

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

10.01 *Owner's Representative*

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

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such

Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.

- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

**10.04 *Engineer's Authority***

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.
- E. Engineer's authority as to Applications for Payment is set forth in Article 15.

**10.05 *Determinations for Unit Price Work***

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

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

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

**10.07 *Limitations on Engineer's Authority and Responsibilities***

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

- D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

**10.08 Compliance with Safety Program**

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

**ARTICLE 11—CHANGES TO THE CONTRACT**

**11.01 Amending and Supplementing the Contract**

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

**11.02 Change Orders**

- A. Owner and Contractor shall execute appropriate Change Orders covering:
  - 1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
  - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.



- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

#### 11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.
- B. If Owner has issued a Work Change Directive and:
  - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
  - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

#### 11.04 *Field Orders*

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

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

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

**11.06 *Unauthorized Changes in the Work***

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

**11.07 *Change of Contract Price***

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
  - 1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
  - 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
  - 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will be determined as follows:
  - 1. A mutually acceptable fixed fee; or
  - 2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
    - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;
    - c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
    - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

- e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
- f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

#### 11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

#### 11.09 *Change Proposals*

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.
- B. *Change Proposal Procedures*
  - 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
  - 2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
    - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
    - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
5. *Binding Decision:* Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion:* Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

#### 11.10 Notification to Surety

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

### ARTICLE 12—CLAIMS

#### 12.01 Claims

- A. *Claims Process:* The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
  1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
  3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and

4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
  2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
  3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval:* If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim:* If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results:* If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

## ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

### 13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work:* The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
  2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.
  2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.
  3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
5. Other costs consisting of the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
    - 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.
  - c. *Construction Equipment Rental*
    - 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
    - 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
    - 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
  - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

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

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

D. *Contractor's Fee*

- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
  - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.



- b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
  - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
  - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
- 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.
- E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

#### 13.02 Allowances

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

#### 13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal

to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.
- E. *Adjustments in Unit Price*
  - 1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
    - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
    - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
  - 2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
  - 3. Adjusted unit prices will apply to all units of that item.

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

##### **14.01 Access to Work**

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

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

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
  - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
  - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
  - 3. by manufacturers of equipment furnished under the Contract Documents;
  - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
  - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.
- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

#### 14.03 Defective Work

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated,

installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

- E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

#### 14.04 *Acceptance of Defective Work*

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

#### 14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of

others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

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

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

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

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

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

#### **15.01 Progress Payments**

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on

the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

**B. Applications for Payments**

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

**C. Review of Applications**

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

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

*D. Payment Becomes Due*

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

*E. Reductions in Payment by Owner*

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



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

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor

may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

#### 15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

#### 15.05 *Final Inspection*

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

#### 15.06 *Final Payment*

##### A. *Application for Payment*

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

documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.

2. The final Application for Payment must be accompanied (except as previously delivered) by:
    - a. all documentation called for in the Contract Documents;
    - b. consent of the surety, if any, to final payment;
    - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
    - d. a list of all duly pending Change Proposals and Claims; and
    - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
  3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.
- C. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.

- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

#### 15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim, appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

#### 15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
1. correct the defective repairs to the Site or such adjacent areas;
  2. correct such defective Work;
  3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
  4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a

Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

- D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

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

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

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

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

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the

Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate for Convenience*

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

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

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2)

Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

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

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

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
  2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
  2. agree with the other party to submit the dispute to another dispute resolution process; or
  3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

## **ARTICLE 18—MISCELLANEOUS**

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

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
  2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

**18.02 Computation of Times**

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

**18.03 Cumulative Remedies**

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

**18.04 Limitation of Damages**

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

**18.05 No Waiver**

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

**18.06 Survival of Obligations**

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

**18.07 Controlling Law**

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

**18.08 Assignment of Contract**

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



**18.09 *Successors and Assigns***

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

**18.10 *Headings***

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

**BID BOND**

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

BIDDER *(Name and Address):*

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

OWNER *(Name and Address):*

**BID**

Bid Due Date:

Description *(Project Name and Include Location):*

**BOND**

Bond Number:

Date *(Not earlier than Bid due date):*

Penal sum \_\_\_\_\_ \$ \_\_\_\_\_  
(Words) (Figures)

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

**BIDDER****SURETY**

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

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

By:

Signature

By:

Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest:

Signature

Attest:

Signature

Title

Title

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

## PENAL SUM FORM

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

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

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

- SC 5.03 Delete Paragraphs 5.03.A and 5.03.B in their entirety and insert the following:
- A. No reports of explorations or tests of subsurface conditions at or adjacent to the Site, or drawings of physical conditions relating to existing surface or subsurface structures at the Site, are known to Owner.
- SC 5.06 Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:
- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.
- B. Not Used.

**ARTICLE 6 – BONDS AND INSURANCE**

- SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:
1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.
- SC 6.03 Add the following new paragraph immediately after Paragraph 6.03.J:
- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:
- |  |                  |
|--|------------------|
| State:   | <u>Statutory</u> |
| Federal, if applicable (e.g., Longshoreman's): | <u>Statutory</u> |
2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:
- |   |                     |
|---|---------------------|
| General Aggregate                         | \$ <u>2,000,000</u> |
| Products - Completed Operations Aggregate | \$ <u>2,000,000</u> |
| Personal and Advertising Injury           | \$ <u>1,000,000</u> |
| Each Occurrence                           | \$ <u>1,000,000</u> |

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:

Each person \$ 1,000,000

Each accident \$ 1,000,000

Property Damage:

Combined Single Limit of \$ 1,000,000

6.05 Property Insurance - Delete Paragraphs 6.04 through 6.06 in their entirety

**ARTICLE 7 – CONTRACTOR’S RESPONSIBILITIES**

SC-7.03 Add the following to Paragraph 7.03.C:

All contracts in excess of \$100,000 must comply with 40 USC Ch. 37: Contract Work Hours And Safety Standards in addition to any provisions contained in this Section.

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

SC-10.03 Project Representative

B. On this Project, by agreement with the Owner, Engineer will not furnish a Resident Project Representative to represent Engineer at the Site or assist Engineer in observing the progress and quality of the Work.

**ARTICLE 17 – FINAL RESOLUTION OF DISPUTES**

Add the following new paragraph immediately after Paragraph 17.01.

SC-17.02 Arbitration

- A. All matters subject to final resolution under this Article will be decided by arbitration in accordance with the rules of Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement, subject to the conditions and limitations of this paragraph. This agreement to arbitrate and any other agreement or consent to arbitrate entered into will be specifically enforceable under the prevailing law of any court having jurisdiction.
- B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitrator or arbitration provider, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in this Article, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations. The demand for arbitration should include specific reference to Paragraph SC-17.02.D below.
- C. No arbitration arising out of or relating to the Contract shall include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer’s consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:

1. the inclusion of such other individual or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration; and
  2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings.
- D. The award rendered by the arbitrator(s) shall be consistent with the agreement of the parties, in writing, and include a concise breakdown of the award, and a written explanation of the award specifically citing the Contract provisions deemed applicable and relied on in making the award.
- E. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.
- F. The fees and expenses of the arbitrators and any arbitration service shall be shared equally by Owner and Contractor.

## **DIVISION 1**

## **SECTION 01010**

### **SUMMARY OF WORK**

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

##### **1.1 SUMMARY**

- A. This Section includes description of work to be performed, schedule of alternates, owner furnished products, work by Owner, work by others, work schedule, work sequence, use of premises and other special conditions and provisions to be performed under the Contract.

##### **1.2 RELATED DOCUMENTS**

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

##### **1.3 PROJECT WORK IDENTIFICATION**

**Project Limits – South Main Street (Routes 3 and 127) from Central Street (north end of concrete island) to Old South Main Street (Route 127).**

1. Site preparation including removal of existing signs, trees, vegetation, existing drainage pipe, headwalls and structures as noted; removing and resetting signs, fences, steps; stripping top soils; utility relocations; and all other work required to fully construct the project.
2. Excavating and disposing of any and all materials required including, but not limited to, debris, foundations, topsoils, retaining walls, wood blocks, fences, trenches, pipes, conduits, and any other materials to fully construct the project.
3. Cold planning 4" of bituminous concrete pavement within the roadway limits. Removing and delivering grindings to the City' nearby pit for future City use.
4. Reclaiming existing pavement to a 12" depth and regrading as required to establish roadway pavement grades to match existing grades.
5. Installation or resetting granite curb and installation of bituminous curb.
6. Construction of ADA compliant curb ramps in accordance with NHDOT Standard Details.
7. Construction of bituminous concrete sidewalks and driveways (3" depth).
8. Installing the new bituminous pavement 2 ½" base course (binder mix) with 1 ½" surface course.



9. Hiring and paying all costs associated with an independent testing company (approved by the Town) to complete testing of all materials and water system elements associated with the proposed construction as required by the plans and specifications.
10. Final striping and signing will be completed by the City.
11. Locating, protecting and shoring all existing utilities in accordance with all State and local applicable codes.
12. Repairing and/or relocating any utilities broken or conflicting with construction.
13. Securing the construction site as required for safety.
14. Disposal of excess excavated material not required for fill or backfill. Stockpiling excess materials at locations indicated on the plans or as directed by the Town.
15. Replacement and restoration of disturbed pavement surfaces, curbing, utilities, plantings, light poles and bases, parking lot pavements, grass, posts, fences, signs, bounds etc. within the limits of work and areas outside the limits of work disturbed by construction operations.
16. Completion of all clean-up.
17. The work shall also conform to such additional drawings and addenda to these Specifications and Drawings as may be published or exhibited prior to the opening of the bids and to such drawings in explanation of details, or as may be furnished by the Engineer from time to time during construction.
18. Work and materials which are necessary for construction but which are not specifically referred to in the Specification, or shown on the Drawings, but implied by the Contract shall be furnished by the Contractor at his own cost and expense and shall be such as will correspond with the general character of the work as may be determined by the Engineer, whose decisions as to the necessity for and character of such work and materials shall be final and conclusive. It is the intent of these Specifications and Drawings to produce a complete, finished job whether shown in every detail or not.

#### 1.4 WORK SCHEDULE

- A. The Contractor shall promptly start and continue the work under this Contract with the necessary labor, equipment and materials to properly execute and complete the work within the time specified in the Contract. No cessation of Contractor's operations will be allowed without the approval of the Owner.
- B. The Contractor shall furnish required crews and equipment necessary to install the work. Prior to utilizing additional crews in other locations of the work, the Contractor shall request permission from the Engineer and the allowed actual on-site working time will be adjusted accordingly.
- C. Should the prosecution of the work for any reason be discontinued, the Contractor shall notify the Engineer at least 48 hours in advance of resuming operations.

#### SUMMARY OF WORK

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- D. Normal construction activity shall be limited to normal business hours of 7:00 AM to 5:30 PM, Monday through Friday (except holidays) unless otherwise approved by the Engineer.
- E. Work in streets, roadways and areas adjacent to them shall cease at noon on days before legal holidays and at noon on Fridays prior to Monday holidays.
- F. The rate of progress shall be satisfactory to the Owner and the Engineer. The Owner and Engineer reserve the right to modify any schedule as required to meet the prevailing conditions.
- G. The work of placing the newly constructed facilities into operation as well as the necessary modifications and renovations to existing facilities shall be thoroughly planned and fully coordinated with the requirements of the Owner, and every effort shall be made to insure smooth transitions.

#### 1.5 CONTRACTOR'S USE OF PREMISES

- A. Contractor shall assume full responsibility for security of all his and his subcontractors' materials and equipment stored on the site.
- B. If directed by the Owner, Contractor shall move stored items which interfere with operations of Owner.
- C. Obtain and pay for additional storage or work areas if needed to perform the Work.

#### 1.6 OWNER OCCUPANCY

- A. The Owner will occupy the site during the entire period of construction for the conduct of normal operations. The Contractor shall cooperate with the Owner to minimize conflicts and to facilitate Owner's operations. Contractor shall schedule the work to accommodate this requirement.

END OF SECTION

## SECTION 01200

### MEASUREMENT AND PAYMENT

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. This Section includes description of payment items, work requirements per payment item and measurement requirements per payment item.

##### 1.2 RELATED DOCUMENTS

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

##### 1.3 SUBMITTALS

- A. Application for Payment: The Application for Payment shall be submitted on a form acceptable to the City. Refer to General Conditions for additional requirements.
- B. Schedule of Values: The Contractor shall submit a breakdown of the cost of all lump sum items in the Bid in a manner that may be used as the basis for estimating the value of the work completed to the end of any month. The basis and detail of the breakdown shall meet with the City's approval. The schedule of values of all lump sum items in the Bid shall be submitted within seven (7) calendar days from the date of the Notice to Award.

##### 1.4 PROCEDURES

- A. The Contractor shall furnish all materials, equipment, labor, and do all operations necessary to complete all work specified or shown. All supervision, overhead items, protection and precautions and all other costs, incidental to the construction work, complete, and as specified, are included.
- B. A complete working job shall be produced whether or not any particular wording or direction is omitted or not clearly stated.
- C. Measurement for payment shall be by the City, except where noted elsewhere in this Specification.
- D. Each price stated in the Bid shall constitute full compensation for each item of work completed.
- E. For unit price items, the Contractor shall be paid for the actual amount of work accepted during the period of construction. After the work is completed and before

### MEASUREMENT AND PAYMENT

final payment is made, the City shall make final measurements to determine the quantities of the various items of work accepted as the basis of final payment.

- F. For lump sum items, the Contractor shall be paid in accordance with the progress schedule and schedule of values on the basis of the percentage of the actual work accepted during the period of construction. After the work for the respective lump sum items is completed, 100% of the lump sum price may be paid, less retained amounts, unless otherwise specified.
- G. At the end of each workday, the Contractor shall meet with the City and determine the quantities of the unit price and/or lump sum items completed during the workday.
- H. Payment for Material Delivered: Refer to General Conditions for requirements for partial payment of materials delivered and stored on site.
- I. The Owner reserves the right to delete any item of work from the Contract without penalty.

## **PART 2 - PRODUCTS**

Not Used

## **PART 3 - EXECUTION**

### **3.1 ITEM DESCRIPTIONS**

## **PART 3 - EXECUTION**

### **3.1 ITEM DESCRIPTIONS**

#### **Item 1 - Mobilization:**

1. The lump sum price under this Item shall constitute full compensation for furnishing all labor and equipment necessary to move equipment to the site and prepare to begin construction.
2. Mobilization costs are the costs of initiating the Contract, exclusive of the cost of materials.
3. Mobilization costs shall be payable when the Contractor is operational on site. Operational shall mean the substantial commencement of work on site, not prior to commencement.
4. The lump sum price bid for mobilization shall not exceed 5 percent of the total of all items excluding this item.

#### **Item 2 - Site Preparation:**

## **MEASUREMENT AND PAYMENT**

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1. The lump sum price under this Item shall constitute full compensation for furnishing all labor and equipment necessary to complete site preparation including: clearing and grubbing, large tree removal, removal of existing signs, plantings, curb, steps, retaining walls (all types) removing and disposing curbs, removing and resetting mailboxes, removing and disposing or resetting signs, fences, steps, granite posts, granite slabs, brick walkways and plantings; stripping top soils; and all other work required to fully construct the project.
2. Measurement for payment shall be based on the percent complete as determined by the City.

Item 3 - Excavation:

1. The lump sum price under this Item shall constitute full compensation for furnishing all labor, equipment and materials necessary to complete common excavation and embankment to prepare the site for placement of base course materials for the construction of the roadbed, roadway embankments, sidewalks, and planted areas as shown on the Drawings, as directed by the City and as herein specified. Item shall include, but not be limited to: excavation; placement of excess excavated fill to construct embankments; grading; compaction; removal and disposal of any materials not wanted by the Owner; salvage (as directed by the City) of excess excavated material; hauling of salvaged material to site designated by the Owner; and all incidental work necessary to complete common excavation/embankment.
2. Measurement for payment shall be based on the percent complete as determined by the City.
1. The pay limit for rock removal outside structures shall be one foot outside the widest dimension of the structure or the maximum trench width, whichever is greater.

Item 4 and Item 5 - Crushed Gravel and Crushed Gravel for Shoulders:

1. The unit price under this Item shall constitute full compensation for furnishing all labor, equipment and materials for installing crushed gravel for roadway sidewalk or driveway construction as shown on the Drawings, as directed by the City and as herein specified. Item shall include but is not limited to: crushed gravel; placement; grading; compaction and all work required to complete installation of crushed gravel.
2. Measurement for payment shall be by the number of cubic yards of crushed gravel placed.

Item 6 - Cold Planing Bituminous Surfaces:

1. The square yard price under this Item shall constitute full compensation for furnishing all labor, equipment and materials necessary to complete cold planing as

shown on the Drawings, as directed by the City and as herein specified. Item shall include, but not be limited to: mobilization, cold planing, sweeping or vacuuming grindings, removal of grindings, delivery of grindings to the City, dust control, clean up and all incidental work necessary to complete common excavation/embankment.

1. Measurement for payment shall be by the square yard to the nearest square yard of cold planing competed.

Item 7 – Reclaimed Base Course:

1. The unit price under this Item shall constitute full compensation for furnishing all labor and equipment required for completing roadway reclamation as specified, as shown on the Drawings, and as directed by the City. Item shall include, but is not limited to: pulverizing the pavement and base course as noted on the drawings; application of water as required; dust control; compaction, all required testing including, but not necessarily limited to, compaction and gradation; grading just prior to and adequate for pavement placement (paving to be done by others); shoulder construction and grading as noted on the plans; additional aggregate materials to meet gradation requirements (if needed); removal and disposal of any materials not wanted by the Owner; salvage (as directed by the City) of excess materials; hauling of salvaged material to a site designated by the Owner; and all incidental work necessary to complete the work.
2. Measurement for payment shall be by the number of square yards of reclaimed base as measured from the edge of existing pavement on one side of the road to the edge of pavement on the other side of the road (not including shoulder areas) and as determined by the City.

Item 8 – Hot Bituminous Pavement Sidewalks and Driveways:

1. The unit price under the appropriate subdivision of this Item shall constitute full compensation for furnishing all labor, equipment and materials for installing hot bituminous pavement as shown on the Drawings, as directed by the City and as herein specified. Item shall include, but is not limited to: saw cutting paved surfaces; grinding existing pavement; preparing edges of the existing pavement as required to accept new pavement; cleaning pavement surface; tack coat; pavement materials; placement; compaction; clean-up; and all work necessary for the installation of hot bituminous pavement.
2. Measurement for payment for the appropriate subdivision of this Item shall be by the number of tons of sidewalk or driveway pavement installed. The Contractor shall submit to the City weight slips for hot bituminous pavement delivered and placed. The City will measure pavement placed within the specified payment limits and multiply the area by the specified thickness and by a coefficient of 0.056 tons per square yard per inch of thickness to obtain the tonnage of hot bituminous pavement. Payment will be made based on the number of tons obtained using the measured in place method or the weight slips, whichever is less.
3. Pavement placed to adjust for settlement shall be at the Contractor's expense.

MEASUREMENT AND PAYMENT

4. The Contractor shall submit to the City weight slips for hot bituminous pavement delivered and placed. The City will measure pavement placed within the specified payment limits and multiply the area by the specified thickness and by a coefficient of 0.056 tons per square yard per inch of thickness to obtain the tonnage of hot bituminous pavement. Payment will be made based on the number of tons obtained using the measured in place method or the weight slips, whichever is less.

Item 9 and Item 10 - Hot Bituminous Pavement (HBP):

1. The unit price under the appropriate subdivision of this Item shall constitute full compensation for furnishing all labor, equipment and materials for installing hot bituminous (base course or wearing course) pavement as shown on the Drawings, as directed by the City and as herein specified. Item shall include, but is not limited to: saw cutting paved surfaces; grinding existing pavement for pavement match areas; preparing edges of the existing pavement as required to accept new pavement; cleaning pavement surface; tack coat by truck (pull behind wagons not permitted); pavement materials; placement; compaction; clean-up; testing; and all work necessary for the installation of hot bituminous pavement.
2. Measurement for payment for the appropriate subdivision of this Item shall be by the ton of the various types of pavement installed.
3. Pavement quantities will be measured by the actual tonnage of pavement delivered less the quantity placed beyond specified thickness or outside payment limits. Payment limits will be as shown on the Drawings and stated in the Specifications.
4. The Contractor shall submit to the City weight slips for hot bituminous pavement delivered and placed. The City will measure pavement placed within the specified payment limits and multiply the area by the specified thickness and by a coefficient of 0.056 tons per square yard per inch of thickness to obtain the tonnage of hot bituminous pavement. Payment will be made based on the number of tons obtained using the measured in place method or the weight slips, whichever is less.
5. Pavement placed to adjust for settlement shall be at the Contractor's expense.

Item 11 - Granite Curb:

1. The unit price under this Item shall constitute full compensation for furnishing all labor, equipment and materials for installing granite curb (all types) as shown on the Drawings, as directed by the City and as herein specified. Item shall include, but is not limited to: excavation, gravel and crushed gravel, concrete to set the curbing as shown on the drawings; cleaning pavement surfaces; tack coat; curb materials, installing curb; saw cutting the existing pavement; compaction; clean-up; and all work necessary for installing granite curb.
2. Measurement for payment shall be by the linear foot to the nearest foot of granite curb installed. Measurement will be from end to end along the lower edge of the exposed face of the curb.

MEASUREMENT AND PAYMENT

Item 12 – Remove and Reset Granite Curb (All Types):

1. The unit price under this Item shall constitute full compensation for furnishing all labor, equipment and materials for removing and resetting granite curb (all types) as shown on the Drawings, as directed by the City and as herein specified. Item shall include, but is not limited to: excavation, cleaning pavement surfaces; tack coat; cleaning and handling curb materials, installing curb; concrete to set the curbing as shown on the drawings; saw cutting; compaction; clean-up; and all work necessary for resetting granite curb.
2. Measurement for payment shall be by the linear foot to the nearest foot of granite curb installed. Measurement will be from end to end along the lower edge of the exposed face of the curb.

Item 13 – Bituminous Concrete Curb:

1. The unit price under this Item shall constitute full compensation for furnishing all labor, equipment and materials for installing bituminous curb as directed by the City and as herein specified. Item shall include, but is not limited to: layout, excavation, cleaning pavement surfaces; berm; saw cutting; compaction; clean-up; and all work necessary for installing the bituminous berm.
2. Measurement for payment shall be by the linear foot measured along the gutter line where the bituminous curb is installed.

Item 14 – Concrete Sidewalks and Curb Ramps:

1. The unit price under this Item shall constitute full compensation for furnishing all labor, equipment and materials for installing concrete sidewalks as shown on the Drawings, as directed by the City and as herein specified. Item shall include, but is not limited to: excavation, formwork, concrete, joints, wheelchair ramps, detectable panels (NHDOT Standard), construction of a test panel, finishing, sealants, extra depth for driveway sections, welded wire fabric, protection of concrete from the elements, testing and all incidentals necessary to complete the work.
2. Measurement for payment shall be by the square yard to the nearest square yard of concrete installed.

Item 15 – Adjust Catch Basin:

1. The work to be done under this item shall conform to all City requirements and as shown on the plans and required by the City.
2. Compensation shall be at the contract unit price bid per each and shall include removal of the casting and brick, all excavation and backfill, providing and installing new brick or structure sections as required to achieve the proposed grade, resetting the casting, installing replacement covers if provided, all labor, tools, materials and necessary incidental items to complete the work as shown on the plans or as directed



by the City. New castings will be provided by the City if needed.

**Item 16 – Adjust Sewer Manhole:**

2. The work to be done under this item shall conform to all City requirements and as shown on the plans and required by the City.
3. Compensation shall be at the contract unit price bid per each and shall include removal of the casting and brick, all excavation and backfill, providing and installing new brick or structure sections as required to achieve the proposed grade, resetting the casting, installing replacement covers if provided, all labor, tools, materials and necessary incidental items to complete the work as shown on the plans or as directed by the City. New castings will be provided by the City if needed.

**Item 17 – Dust and Erosion Control (Project wide):**

1. The lump sum price under this Item shall constitute full compensation for furnishing all labor, equipment and materials necessary to control dust and erosion as shown on the Drawings, as directed by the City, as required by applicable permits and as herein specified. Item shall include, but not be limited to: maintenance of sedimentation barriers/measures, temporary seeding, slope protection, dust control with calcium chloride and/or water; maintenance of excavated, backfilled and graded areas; sedimentation basins, mulching, removal of all sedimentation control devices upon complete stabilization of the site and all other elements included on the plans to control erosion.
2. Measurement for payment shall be based on the percent complete as determined by the City.

**Item 18 - Maintenance of Traffic:**

1. The lump sum price under this Item shall constitute full compensation for furnishing all labor, equipment and materials necessary to maintain safe and passable traffic conditions for pedestrians and vehicles as shown on the Drawings, as directed by the City and as herein specified. Item shall include, but is not be limited to: dust control; maintenance of excavated, backfilled and graded areas; traffic signs, barricades, lights, signals, delineators, pavement markings, concrete barriers and other traffic control warning devices; flaggers; detour signage if approved by the City; and all work incidental to guiding vehicular and pedestrian traffic through the work zone in a safe and convenient manner.
2. Measurement for payment shall be based on the percent complete as determined by the City.

**Item 19 – Fuel and Asphalt Cement Price Adjustment:**

1. Price adjustments will be made in accordance with the "Special Attentions" issued by NHDOT (Fuel Adjustments dated April 25, 2023 and Asphalt Cement dated April 24, 2023) and attached to these Contract Documents.

END OF SECTION

MEASUREMENT AND PAYMENT

01200-7

## **SECTION 01310**

### **SUBMITTALS**

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

##### **1.1 SUMMARY**

- A. This Section includes the general methods and requirements of applicable work-related submittals including, but not limited to: shop drawings; product data; samples; mock ups; schedules; and certifications.
- B. Refer to technical specifications for additional requirements.

##### **1.2 RELATED DOCUMENTS**

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

##### **1.3 SUBMITTAL PROCEDURES**

- A. Submittals shall be made in accordance with approved schedule and Work progress, and in such promptness and sequence as to cause no delay in the Work or in the work of any other contractor.
- B. Submittals shall bear the Contractor's certification that he has reviewed, checked and approved the submittal, that they are consistent with the requirements of the project and with the provisions of the Contract Documents, and that the submittal has been reviewed and verified for materials, products required, field dimensions and measurements, field construction criteria, and conformance with the contract Documents. The Contractor shall also certify that the work represented by the submittal is recommended by the Contractor and that the Contractor's warranty shall apply.
- C. The Contractor shall be responsible for the preparation, coordination and review all submittals prior to delivery to Engineer. All submittals by subcontractors shall be sent directly to the Contractor for approval. The Contractor shall be responsible for their submission at the proper time so as to prevent delays in the Work.
- D. Coordinate submittals into logical groupings by Specification section to facilitate review of interrelated items. Shop drawings, product data and sample submittals shall not be reviewed by the Engineer until a complete submittal grouping by Specification section is received.

E. Submittals shall include:

1. Project title and number.
  2. Date of submission and date of any previous submissions.
  3. Name of Contractor, supplier and manufacturer.
  4. Identification of product by Specification section number, page and paragraph.
  5. Field dimensions and construction criteria.
  6. Relation to adjacent or critical features of the Work or products.
  7. Applicable standards.
  8. Identification of deviations from Contract Documents.
  9. Identification of revisions on resubmittals.
- F. All submittals shall be accompanied by a standard transmittal form approved by the Engineer. Form shall include project title and number, owner name, date, name of contractor and subcontractor, transmittal number and appropriate Specification section number.

G. Engineer Review:

1. The Engineer will be the sole judge regarding the completeness of the submittal. Partial submittals will be rejected.
2. All submittals shall be complete and submitted in advance of construction requirements to provide no less than fifteen (15) days (excluding Saturdays, Sundays and legal holidays) for review from the time the submittal is received by the Engineer. Contractor shall make submittals in advance of the fifteen (15) days for review of major equipment and items that require review by more than one engineering discipline. Engineer will respond to submittals with reasonable promptness.
3. Review by the Engineer is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Any action indicated is subject to the requirements of the Contract Documents. Engineer assumes no responsibility for identifying deviations from the Contract Documents that are not clearly identified in submittals. Contractor is responsible for details and accuracy, for dimensions to be confirmed and correlated at the job site, for information that pertains to the fabrication processes or to techniques of construction, for coordination of the work of all trades, and for the satisfactory performance of all work.

SUBMITTALS

4. The review and approval of submittals by the Engineer shall not relieve the Contractor from his responsibility with regard to the fulfillment of the terms of the Contract. All risks of error and omission are assumed solely by the Contractor and not by the Engineer or Owner.
5. The Engineer will review each submittal and the first resubmittal at no cost to the Contractor. The Contractor shall reimburse the Owner for all reasonable costs associated with the Engineer's, and his consultants, review of each subsequent submittal.

H. Substitutions and Or Equal Items:

1. All requests for consideration of a product other than the brand(s) or model(s) named in the Specifications (substitutions) shall be submitted to the Engineer in writing. Substitutions will not be considered when they are indicated or implied on shop drawings or product data submittals, without separate written request, or when acceptance will require revisions to the Contract Documents.
2. A request constitutes a representation that the Contractor has investigated the proposed product and has determined that it meets or exceeds the quality level of the specified product.
3. Contractor shall furnish written evidence that such product conforms in all respects to the specified requirements, and that it has been used successfully elsewhere under similar conditions. Where the specified requirements involve conformance to recognized codes or standards, the Contractor shall furnish evidence of such conformance in the form of test or inspection reports, prepared by a recognized agency, complete with authorized signature verifying compliance with the Specifications.
4. Manufacturers' standard data and catalog cut sheets will not be considered sufficient in themselves, and the Engineer will not be responsible for seeking further data from the manufacturer, or for otherwise researching the product. Failure to provide complete data will be cause for rejection of the product.
5. The Contractor shall provide the same warranty for the substitution as for the specified product. Engineer reserves the right to require an extended warranty on substitutions as a condition of acceptance.
6. The Contractor shall be responsible for all additional costs necessary to accommodate the proposed substitution. This shall include, but not be limited to: coordination for installation; modifications to the Work; product licensing fees; and review or redesign services required by the Engineer, Owner or other approving authorities.
7. The Contractor shall waive all claims for a time extension which may subsequently become apparent.

SUBMITTALS

8. Items which result in a cost reduction shall be presented and a change order reflecting the cost savings will be prepared and the contract price modified.
- I. The Contractor shall, in writing, call the Engineer's attention to any deviations from the Contract Documents at the time of the first submission. Deviations or omissions in submittal shall not relieve the Contractor from his responsibility for meeting the specified requirements unless the Engineer has given written approval for the deviations or omissions identified.
- J. No portion of the work requiring a shop drawing, product data or sample submittal shall be started nor shall any materials be fabricated or installed prior to the approval or qualified approval of such item. Fabrication performed, materials purchased or on-site construction accomplished which does not conform to approved shop drawings, product data or samples shall be at the Contractor's risk. The Owner will not be responsible for any expense or delay due to corrections or remedies required to accomplish conformity.
- K. Distribution: Duplicate and distribute only reproductions of shop drawings, copies of product data and samples, which bear Engineer's stamp of "No Exception Taken" or "Make Corrections As Noted" to job site file, record documents file, subcontractors, suppliers, other affected contractors and other entities requiring the information.

#### 1.4 SHOP DRAWINGS

- A. Shop drawings shall include, but are not necessarily limited to: custom-prepared items such as fabrication and erection/installation drawings, schedule information, setting diagrams, actual shop work, manufacturing instructions, custom templates, special wiring diagrams, coordination drawings, and individual system or equipment inspection and test reports, performance curves and certifications, as applicable to the Work.
- B. Submit three (3) copies of shop drawing or digital files (PDFs). One (1) copy or the digital file will be retained by the Engineer; two (2) copies or the digital copy will be returned to the Contractor.
- C. Submit all shop and working drawings on a 24-in. by 36-in. standard sheet, except those which are made by changing existing standard shop or working drawings.
- D. Present shop drawings in a clear and thorough manner. Title each drawing with project name, number and date. Identify each element of the drawings by reference to sheet number, detail and schedule of the Contract Documents.
- E. The Contractor shall check all subcontractor's shop drawings regarding measurements, size of members, materials, and details to satisfy himself that they conform to the intent of the Drawings and Specifications. Shop drawings found to be inaccurate or otherwise in error shall be returned to the subcontractors for correction before submission thereof.

#### SUBMITTALS

- F. All details on shop drawings submitted for approval shall show clearly the relation of the various parts of the main members and lines of the structure and equipment, and where correct fabrication of the work depends upon field measurements; such measurements shall be made and noted on the drawings before being submitted for approval.

#### 1.5 PRODUCT DATA

- A. Product data shall include, but are not necessarily limited to: standard prepared data for manufactured products such as the manufacturer's product specification and printed installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances including certificates of compliance and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications and recommended spare-parts listing, and printed product warranties, as applicable to the Work.
- B. Provide Material Safety and Data Sheets as required by OSHA for all chemicals to be supplied under this Contract.
- C. Submit three (3) copies of shop drawing or digital files (PDFs). One (1) copy or the digital file will be retained by the Engineer; two (2) copies or the digital copy will be returned to the Contractor.
- D. Submit only those pages that are pertinent. Mark each copy of standard printed data to identify pertinent products, models, options, and other data referenced to the Specification section number, page and paragraph. Supplement manufacturer's standard data with information unique to this project. Delete information that does not apply.

#### 1.6 SAMPLES

- A. Samples shall include, but are not necessarily limited to: physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols, and units of work to be used by the Engineer or Owner for independent inspection and testing, as applicable to the Work.
- B. Submit the number of samples required by individual Specification sections or as requested by the Engineer. Samples will not be returned.
- C. Submit samples to illustrate functional and aesthetic characteristics of products, including parts and attachments.

#### SUBMITTALS

- D. Label each sample to identify project information and Specification section number or Drawing number.

#### 1.7 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit three (3) copies of shop drawing or digital files (PDFs).
- B. Submit initial schedule at the preconstruction conference. This schedule shall include the proposed methods of construction, sequence of work and the time the Contractor proposes to complete the various items of work, within the time specified in the Contract. After review, resubmit revised schedule within seven (7) calendar days.
- C. Submit revised progress schedules for review and approval, at a minimum, with each Application for Payment or whenever, in the Engineer's opinion, a timelier update is warranted.
- D. If the Contractor's operations are materially affected by changes in the scope or quantity of the work, or if he has failed to comply with the submitted and reviewed schedule, the Contractor shall submit a revised schedule, if requested by the Engineer, within seven (7) days after the date of the Engineer's request. This revised schedule shall show how the Contractor proposes to prosecute the balance of the work, so as to complete the work within the time specified in the Contract.
- E. Prepare schedules as a horizontal bar chart or network with separate bar or node for each major portion of the Work or operation, identifying first work day of each week and identifying each portion of the Work that is critical to timely project completion. All project scheduling shall include and be prepared using critical path method analysis.
- F. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- G. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the last day of each month.
- H. Provide a narrative report, as required, to identify problem areas, anticipated delays and their impact on the schedule, corrective action recommended and its effect, and the effect of changes on the schedules of other Contractors.

#### 1.8 MANUFACTURER'S CERTIFICATE OF COMPLIANCE

- A. Submit three (3) copies of shop drawing or digital files (PDFs). One (1) copy or the digital file will be retained by the Engineer; two (2) copies or the digital copy will be returned to the Contractor.

#### SUBMITTALS

- B. Where manufactured materials are incorporated in the project, a manufacturer's certificate showing compliance with the Specifications shall accompany each item listed herein. No material shall be incorporated in the work until the certificate of compliance has been reviewed by the Engineer.
- C. The certificate shall be properly executed by the manufacturer or producer. The essential components of the certificate of compliance shall include:
1. Name of company and address of its manufacturing or producing facility.
  2. Brand name of the material or product.
  3. Sufficient detail to describe the quantity, content of the shipment and its project destination including a date of shipment and adequate identification of the vehicle in which the shipment was made. When material was received in crated or packaged form via common carrier the serial number of the bill of lading accompanying such shipment shall be the identification criteria rather than vehicle identification.
  4. A statement that material contained in the shipment meets or exceeds requirements of the Specifications.
  5. The certificate shall be signed by an authorized representative of the manufacturer. The signature shall be notarized.

## **PART 2 - PRODUCTS**

Not Used

## **PART 3 - EXECUTION**

Not Used

END OF SECTION

SUBMITTALS

01310 - 7



## **SECTION 01320**

### **COORDINATION AND MEETINGS**

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

##### **1.1 SUMMARY**

- A. This section specifies the general requirements for project coordination and meetings.

##### **1.2 RELATED DOCUMENTS**

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

##### **1.3 CONTRACTOR COORDINATION**

- A. Contractor shall provide sufficient administrative and on-site supervisory personnel to properly execute the work. Supervisory personnel shall be on-site at all times during construction operations, including those times when subcontractors are performing the work. On-site supervisory personnel shall have a minimum of 5 years experience in supervising the type of work performed.
- B. Contractor shall coordinate scheduling, submittals and the Work to assure efficient and orderly sequence of installation of independent construction elements.

##### **1.4 PRECONSTRUCTION CONFERENCE**

- A. Engineer will schedule a preconstruction conference after Notice of Award and prior to the commencement of the Work.
- B. Attendees: Owner, Engineer, Contractor, State and Federal Regulatory and Funding Agency representatives.

##### **1.5 PROGRESS MEETINGS**

- A. Engineer will schedule and administer meetings throughout the progress of the Work at intervals not to exceed one month.
- B. Attendees: Owner, Engineer, Contractor, Subcontractors, Suppliers, State and Federal Regulatory and Funding Agency representatives.

##### **1.6 PREINSTALLATION CONFERENCE**

Not Used

#### **PART 2 - PRODUCTS**

COORDINATION AND MEETINGS

01320 - 1

Not Used

### **PART 3 - EXECUTION**

#### **3.1 GENERAL INSTALLATION PROVISIONS**

- A. Inspect the conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner, and at no additional cost to the Owner.
- B. Comply with manufacturer's written installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in the Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items, all at no additional cost to the Owner.
- D. Provide attachment and connection devices and methods for securing work. Secure work true to line and level. Allow for expansion and utility movement.
- E. Recheck measurements and dimensions before starting installation or erection.
- F. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material to prevent deterioration.
- G. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

#### **3.2 ALTERATION PROCEDURES**

- A. Match existing products and materials for patching and extending work.
- B. Remove, cut and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to original and specified condition.
- C. Where new work abuts or aligns with existing, perform a smooth and even transition. Match existing adjacent work in texture and appearance.
- D. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- E. Finish surfaces as specified in individual product specifications.

#### **3.3 CUTTING AND PATCHING**

Not Used

#### **3.4 CLEANING AND PROTECTION**

### **COORDINATION AND MEETINGS**

- A. Clean and protect construction in progress and adjoining materials in place. Install protective covering to ensure protection from damage or deterioration.
- B. Clean and maintain completed construction as frequently as necessary for the duration of the construction period.
- C. Supervise construction activities to ensure that no part of the Work, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

END OF SECTION

## **SECTION 01330**

### **FIELD ENGINEERING AND SURVEY**

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

##### **1.1 SUMMARY**

- A. This Section includes furnishing all labor, equipment, and materials, and performing all operations in connection with survey work required in the execution of the construction of the Project, project record drawings, and field measurements.

##### **1.2 RELATED DOCUMENTS**

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

##### **1.3 SUBMITTALS**

- A. Submit name, address and telephone number and license number of Contractor's surveyor or engineer prior to the commencement of the Work.
- B. Submit documentation to verify accuracy of field engineering and survey work as requested by the Engineer.
- C. Submit certificate signed by the Contractor's surveyor or engineer that elevations and locations of the Work are in conformance with Contract Documents.
- D. Record Drawings:
  - 1. The Contractor shall maintain two sets of drawings indicating as-built locations and dimensions of work. Each major system of the Work shall be recorded by a separate color on the record drawings.
  - 2. The Contractor shall record information concurrently with construction progress. Submit progress prints of record drawings each month with project invoices.
  - 3. Final record drawings shall be submitted to the Engineer at substantial completion or contract closeout, as determined by the Engineer.

##### **1.4 FIELD MEASUREMENTS**

- A. The Engineer will provide benchmark information on the Drawings or separately in writing. The Contractor shall do all layout of the work from said benchmarks.
- B. The Contractor shall locate and protect survey control and reference points and shall field verify all control and reference points. If control and reference points have been disturbed by others prior to construction or are found in error, the Engineer shall be

### **FIELD ENGINEERING AND SURVEY**

promptly notified.

- C. The Contractor shall be responsible to offset control points where construction activities may destroy or disturb original points. Control points lost as a result of Contractor's activities shall be reset at Contractor's expense.
- D. All Work shall be done to lines, grades and elevations as shown on the Drawings and as directed by the Engineer.
- E. Contractor shall perform all survey, layout and measurement necessary to complete construction. Contractor shall be responsible for reestablishing existing profiles, alignments (vertical and horizontal), lines, grades and elevations and setting new profiles, alignments (vertical and horizontal), lines, grades and elevations. Survey, layout and measurements shall be verified with Engineer prior to construction.
  - 1. Contractor shall stakeout in the field all proposed construction as shown on the Drawings and as directed by the Engineer. Stakes shall remain in place until the Engineer reviews the work completed.
- F. Contractor shall keep on site, at all times during construction operations, a level and transit and allow the Engineer unrestricted use of same at the work site. Any check by Engineer shall not be considered as approval of the Contractor's work.
- G. Contractor shall designate a field superintendent who will be responsible for survey, layout and measurements for the entire Project. Superintendent shall have a minimum of 5 years experience in construction survey and layout for the work being performed.
- H. Contractor shall retain a Registered Land Surveyor at his own expense. Surveyor shall be licensed in the state where the work is to be performed. Surveyor shall have a minimum of 5 years experience in the type of work to be performed. Surveyor shall employ experienced personnel and provide adequate supervision to satisfaction of the Engineer at all times when operations are in progress. At a minimum, Contractor shall retain a Registered Land Surveyor to complete the following operations:
  - 1. Establish offset stakes at all key alignment points to allow the Engineer to verify the location of the roadway alignment.
  - 2. Establish permanent benchmarks during the progress of the work.
  - 3. Replace property boundary markers destroyed, disturbed or removed as a result of Contractor operations.
- I. Contractor shall keep Engineer informed, in writing, two weeks in advance, of times and places at which work is to be performed, so that horizontal and vertical control points may be established and any checking deemed necessary by the Engineer may be performed.
- J. Remove and reconstruct Work that is improperly located as determined by the Engineer at no additional cost to the Owner.

#### FIELD ENGINEERING AND SURVEY

01330-2

**PART 2 - PRODUCTS**

Not Used

**PART 3 - EXECUTION**

Not Used

END OF SECTION

## SECTION 01500

### TEMPORARY FACILITIES AND CONTROLS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. This Section includes the furnishing of all plant, labor, equipment and materials and performing all operations in connection with providing temporary facilities and controls including, but not limited to: temporary utilities and service; environmental controls; protection of work; project signage; access and parking; security; temporary enclosures; traffic control; permits; and field offices.

##### 1.2 RELATED DOCUMENTS

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

##### 1.3 TRANSPORTATION, HANDLING AND STORAGE

- A. Contractor shall transport, handle and store products and materials in accordance with manufacturer's instructions.
- B. Contractor shall promptly inspect shipments to assure that products and materials comply with the requirements of the Contract Documents, quantities are correct, containers and packages are intact, labels are legible and products and materials are properly protected and undamaged.
- C. Contractor shall provide equipment and personnel to properly transport, handle and store products and materials to prevent damage, soiling or disfigurement to the products and materials or surrounding surfaces and areas.
- D. Contractor shall provide off-site storage and protection when site does not permit on-site storage or protection.
- E. Contractor shall arrange storage of products and materials to provide access for inspection. Contractor shall periodically inspect products and materials to assure they are undamaged and are maintained under specified conditions.
- F. Any product and material damaged because of improper transportation, handling or storage shall be unacceptable for installation and shall be removed from the site and replaced at the Contractor's expense.
- G. Contractor shall remove surplus products and materials at the completion of the work.
- H. Contractor shall be responsible for any loss of equipment, products or materials by theft.

### TEMPORARY FACILITIES AND CONTROLS

01500-1

#### 1.4 PROTECTION OF INSTALLED WORK

- A. Contractor shall control activity within the work area to prevent injury or damage to the Work. All installed Work shall be carefully protected from any injury or damage. All portions of the Work injured or damaged shall be reconstructed by the Contractor at no additional cost to the Owner.

#### 1.5 CARE AND PROTECTION OF PROPERTY

- A. Contractor shall not enter or occupy private property outside of easements, except by permission of the landowner. Contractor shall notify the Owner of receipt of said permission prior to the commencement of work.
- B. Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor at Contractor's expense to a condition similar or equal to that existing before the damage was done.

#### 1.6 TEMPORARY UTILITIES

- A. Temporary Light and Power: Contractor shall provide all temporary light and power as required for the prosecution and completion of the work. Contractor shall not use Owner's power service without prior approval. If approval is granted, Contractor shall pay all fees for applications and permits, pay all costs associated with the installation and maintenance of temporary service and install meter and pay all costs of energy used.
- B. Temporary Heat: Contractor shall provide sufficient temporary heat to maintain a minimum temperature of 50 degrees F at all times in all areas designated in the Contract Documents.
- C. Temporary Telephone: Contractor shall install a job telephone for use by the Contractor and the Engineer. The Contractor shall pay all telephone charges.
- D. Temporary Water: Contractor shall provide potable water for drinking purposes and construction operations. Contractor shall not use Owner's water supply system without prior approval of the Owner. If approval is granted, Contractor shall pay all fees for applications and permits, pay all costs associated with the installation and maintenance of temporary service and, if required, install meter and pay all costs of water used. No direct cross connections will be permitted between any water supply and any point where the possibility of backflow of contaminated water exists. All connections to points where there is the possibility of backflow shall be arranged to prevent backflow and shall be approved by the Owner before they are put into operation.
- E. Temporary Sanitary Facilities: Contractor shall provide and maintain sanitary facilities for the use of his employees and the Engineer. Contractor shall comply with the requirements and regulations of the local and state Departments of Health.

#### TEMPORARY FACILITIES AND CONTROLS



- F. Contractor shall provide temporary utilities to maintain full operation of the existing utilities. All temporary utilities and maintenance and operation of the existing facilities shall be provided at the Contractor's expense.

#### 1.7 MAINTAINING WATER, SEWER AND DRAINAGE SERVICE

- A. Water service may be interrupted up to a maximum of four (4) consecutive hours to allow for relocation of existing water utilities. For interruptions that exceed four (4) consecutive hours, the Contractor shall provide, maintain, and operate all temporary facilities such as pipelines, hydrants, and valves and provide all labor and equipment necessary to maintain water service to existing customers. Temporary bypass piping for water service shall be performed at the Contractor's expense.
- B. Fire hydrants on or adjacent to the work shall be kept accessible to fire fighting equipment at all times.
- C. Contractor shall provide, maintain, and operate all temporary facilities such as dams, pumping equipment, and pipelines, and provide all labor and equipment necessary to intercept sewage flows, carry it past his work, and return it to the existing sewer below his work. Temporary bypass of sewage flows shall be performed at the Contractor's expense.
- D. Contractor shall provide, maintain and operate all temporary facilities such as dams, conduits and pipelines, and provide all labor and equipment necessary to redirect flows from drains and water courses to a suitable point of discharge so as not to flow upon the work or create a nuisance. Temporary diversion of flows shall be performed at the Contractor's expense.
- E. Procedures for maintaining existing flows and service shall be coordinated with the Engineer and appropriate utility authority well in advance of the interruption of any flows or service.

#### 1.8 DUST CONTROL

- A. During the progress of the work, the Contractor shall conduct his operations and maintain the area of his activities, including sweeping and sprinkling of water as necessary, so as to minimize the creation and dispersion of dust during working and non-working hours.
- B. Frequency of application shall be determined by site conditions and weather and as directed by the Engineer. If the Engineer decides that it is necessary to use calcium chloride for more effective dust control, the Contractor shall furnish and apply the material as directed.
- C. Calcium chloride shall be commercial grade, furnished in 100 lb, 5-ply bags, stored under weatherproof cover and stacked alternately for ventilation. Application for dust control shall be at the rate of approximately 1/2 pound per square yard, unless otherwise directed by the Engineer.

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D. The use of petroleum products is prohibited.

E. During construction, the Owner may notify Contractor of nuisance conditions and will expect Contractor to make every effort to correct the nuisance immediately. If conditions remain uncorrected for a period in excess of 24 hours, the Owner reserves the right to take corrective action and reduce the Contractor's pay requests to pay for the work.

#### 1.9 SURFACE WATER CONTROL

A. Provide methods to control surface water to prevent damage to the site, utilities, structures or adjoining properties. Control fill, grading and ditching to direct surface water away from excavations, pits, tunnels and other constructed areas; and to direct surface water to proper runoff.

B. Dispose of surface water in a manner to prevent flooding, erosion, siltation or other damage to any portion of the site, utilities, structures or adjoining properties.

C. Contractor shall comply with all applicable local, state and federal statutes, regulations and ordinances.

#### 1.10 EROSION AND SEDIMENTATION CONTROL

A. Plan and execute construction to prevent erosion and sedimentation from cuts and fills, borrow areas, stockpiles and waste disposal areas. Minimize areas of bare soil exposed at any one time.

B. Provide temporary control measures such as berms, dikes, diversion ditches and drains, sedimentation barriers and basins, silt fences and hay bales, and fiber matting as required and as directed by the Engineer to prevent erosion and sedimentation. Contractor shall periodically inspect control measures and promptly correct any defects as required or as directed by the Engineer.

C. Protect existing drainage structures from silt and debris. Contractor shall promptly remove accumulated silt and debris from drainage structures impacted by construction activities.

D. Contractor shall comply with all applicable local, state and federal statutes, regulations and ordinances.

#### 1.11 POLLUTION CONTROL

A. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by the discharge of noxious, toxic substances and pollutants produced by construction operations.

B. Provide equipment, personnel, and perform emergency measures, as may be required, to contain any spillage's, and to remove contaminated soils or liquids. Excavate and dispose of any contaminated earth off-site, in such a manner and at such location

### TEMPORARY FACILITIES AND CONTROLS

permitted by law, and according to Federal, state, and local regulations, and replace with suitable compacted fill and topsoil.

- C. Maintain work areas free of extraneous debris. Maintain storage and lay down yards in neat and orderly fashion, free of debris and waste materials.
- D. Initiate and maintain a specific program to prevent accumulation of debris at construction site storage and parking areas, or along access roads and haul routes.
  - 1. Provide containers for deposit of debris.
  - 2. Prohibit overloading of trucks to prevent spillage's on access and haul routes. Provide periodic inspection of traffic areas to enforce requirements.
- E. Maintain Material Safety Data sheets for substances used in the work, as required. Storage of construction materials shall be secured and contained. Display right-to-know and NFPA chemical hazard labels where appropriate.
- F. Schedule periodic collection and disposal of debris. Provide additional collections and disposals of debris whenever the periodic schedule is inadequate to prevent accumulation.
- G. Protection of Resources:
  - 1. Burning of rubbish and waste material on the site shall not be permitted.
  - 2. Construction equipment shall be equipped with properly operating emission control devices and mufflers. Equipment not utilizing said devices shall be removed immediately from the site.
- H. Hazardous Material and Waste Control:
  - 1. Disposal of volatile fluid wastes (such as mineral spirits, waste oil, gasoline, or paint thinner) in storm or sanitary sewer systems or into streams or waterways shall not be permitted. In the event that any such waste is spilled onto the ground, the Contractor shall immediately notify the Engineer, promptly clean up the spillage and all contaminated soil, and dispose of the cleanings as hazardous waste material. If a spill occurs, the clean-up activities shall take precedence over normal construction activities in order that damage to the environment is minimized.
  - 2. Fuels, lubricants or other hazardous materials shall not be stored in proximity to any waterways or wetlands areas
  - 3. Fuels, lubricants and other hazardous materials shall be stockpiled within an area of positive containment. The area shall have no open communication with surface water bodies or other resource areas, and shall have a base of relatively impermeable material and shall have an adequate supply of materials required for spill clean up.
  - 4. All hazardous materials containers shall be properly marked and their contents

#### TEMPORARY FACILITIES AND CONTROLS

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identified. All fuel oil, lubricant, gasoline, and hydraulic fluid containers shall be fixed in place on the transport vehicle when the vehicle is in motion.

5. The construction project shall be in compliance with all local, state and federal laws with respect to hazardous materials.
6. All clean up and disposal operations shall comply with all applicable local, state and federal statutes, regulations and ordinances and anti-pollution laws.

I. Noise Abatement

1. Construction equipment including generators and compressors shall be enclosed or equipped with mufflers, silencers or other equipment to minimize noise.
2. The Contractor shall limit construction noise in accordance with local, state, EPA and OSHA latest standard criteria.

J. Soil and Groundwater Contamination

1. Contractor shall immediately notify the Engineer and Owner if contaminated soil or groundwater is encountered.

1.12 RODENT CONTROL

- A. Provide rodent control as necessary to prevent infestation of construction or storage area. Employ methods and use materials which will not adversely affect conditions at the site or on adjoining properties.
- B. The use of any rodenticide shall be in full accordance with the manufacturer's printed instructions and recommendations, and shall be used only with the approval of local Board of Health, or other Owner's representative.

1.13 TRAFFIC CONTROL

- A. When police details are not required, Contractor shall provide flagmen to regulate traffic when construction operations or traffic encroach upon public traffic lanes.
- B. When police details are required, prior to construction and delivery of equipment and materials, the Contractor shall arrange for necessary police details with the appropriate police agency having authority. In general, local police shall be utilized on municipally-owned roads; state police shall be utilized on state-owned and -operated roads. The police agency shall determine the extent of police detail required during the project. Contractor shall provide 24-hour advance notice to the Police Department through the office of the Police Chief to request any changes to pre-approved traffic control details.
- C. Road closures and/or traffic details shall not be allowed without prior permission of the Owner, and Police and Fire Departments.

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- D. Contractor shall furnish and maintain traffic cones, barriers, drums, flares and lights as may be required for traffic control. Cones, barriers, drums, lights and flares shall be in compliance with NHDOT standards, shall be relocated as the work progresses and shall be removed when they are no longer required.
- E. Contractor shall furnish and maintain traffic control signage throughout the project and at all construction areas. Signs shall be standard signs in compliance with NHDOT standards. Signs shall be relocated as the work progresses and removed when the signage is no longer required. In general the following signs and devices shall be placed and maintained at each side of all work areas:
  - 1. Construction Ahead - 1000 feet
  - 2. Construction Ahead - 500 feet
  - 3. Reduce Speed Ahead
  - 4. Keep Left/Keep Right
  - 5. End Construction
  - 6. Left/Right Lane Closed Ahead
  - 7. Safety Barrels with flashers
  - 8. Electronic message boards at each limit of work in advance of the work site
- F. It is the intent of this Contract that traffic be maintained at all times in the areas of construction. For municipally-owned roads, the Contractor shall maintain local traffic at all times. For state-owned and -operated roads, the Contractor shall maintain two lane two-way traffic at all times.
- G. Contractor shall provide the necessary equipment to maintain roads affected by the Contractor's operations. The Contractor may be required to halt operations and/or transport material to areas beyond immediate work locations in order to allow minimum traffic disruptions.
- H. Contractor shall consult with authority having jurisdiction in establishing use of public roads to be used for haul routes and site access. Contractor shall confine operations to designated haul routes and provide traffic control at critical areas of haul routes to regulate traffic and minimize interference with public traffic.
- I. Contractor shall maintain access to private drives at all times.
- J. Contractor shall control vehicular parking on site to prevent interference with public traffic and parking, access by emergency vehicles and Owner's operation.
- K. Contractor shall provide a traffic coordinator. The traffic coordinator shall be responsible for coordinating the work with property owners to minimize the disturbance of construction operations on properties and property access.
- L. If required, Contractor shall submit traffic control plan to the Engineer, state and

#### TEMPORARY FACILITIES AND CONTROLS

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local Police Departments and NHDOT seven calendar days prior to plan implementation. Contractor shall not proceed with plan without prior authorization from appropriate police agency having jurisdiction.

**1.14 PERMITS**

- A. Contractor shall comply with all requirements of all applicable local, state and federal regulations and all permits issued for the Contract.

**1.15 PROJECT SIGNS**

Not Used

**1.16 ENGINEER'S FIELD OFFICE**

Not Used

**PART 2 - PRODUCTS**

Not Used

**PART 3 - EXECUTION**

**3.1 GENERAL**

- A. Provide and maintain methods, equipment, and temporary construction, as necessary to provide controls over environmental conditions at the construction site and related areas, as indicated on the Drawings or required in the Specifications.
- B. Owner reserves the right to perform corrective work if any of the temporary site controls or procedures are inadequate. Owner will seek reimbursement for taking corrective action in any case where the Contractor does not correct nuisance conditions within 24 hours of being notified by the Owner or Engineer that corrective actions are necessary. Reimbursement shall be sought through direct invoicing of Contractor for costs incurred. Costs shall be recovered by reduction of pay application amounts and Owner shall be entitled to an appropriate decrease in Contract Price.

END OF SECTION

## SECTION 01715

### CONTRACT CLOSEOUT

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

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

##### 1.2 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's inspection.
- B. Provide submittals to Engineer such as certificates of inspections, certificate of occupancy, warranties and any other certificates that are required by governing or other authorities.
- C. Submit an affidavit that all payrolls, bills for materials and equipment, subcontractor bills, and other indebtedness connected with the work for which the Owner might in any way be responsible, have been paid or otherwise satisfied.
- D. Submit data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by the Owner. If any subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify against the Owner any lien resulting therefrom. If any such lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such lien, including all cost and reasonable attorney's fee.
- E. Submit written notice showing the disposition of all insurance filings and claims.
- F. Submit final Application for Payment identifying total adjusted Contract Sum, previous payment, and sum remaining due.
- G. Submit record drawings, documents and samples to the Owner for use by the Engineer in the preparation of project record drawings.

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### 1.3 FINAL CLEANING

- A. Complete cleaning operations before requesting inspection for Certification of Substantial Completion.
- B. Clean site, sweep paved areas, rake and clean landscape surfaces. Leave all surface areas in a neat and satisfactory condition.
- C. Remove all silt and debris from watercourses, ditches, gutters, drains, culverts, pipes, structures, and catch basins. Dispose of silt and debris in accordance with all local, state and federal regulations. Drainage systems shall be left in a neat and satisfactory condition.
- D. Remove all rubbish, waste, surplus materials, and unneeded construction equipment and temporary buildings and facilities.
- E. Contractor shall restore or replace any public or private property damaged by his work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. Suitable materials, equipment, and methods shall be used for such restoration. Restoration of existing property or structures shall be left in a satisfactory condition.

### PART 2 - PRODUCTS

Not Used

### PART 3 - EXECUTION

Not Used

END OF SECTION

CONTRACT CLOSEOUT  
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## **DIVISION 2**

## **SECTION 02230**

### **SITE CLEARING**

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

##### **1.1 SUMMARY**

- A. This Section includes furnishing all labor, equipment, and materials, and performing all operations in connection with clearing and grubbing, protection of existing trees and vegetation, disposal of waste materials and debris, and stripping and stockpiling of topsoil, in accordance with the Drawings and Specifications and as directed by the Engineer.

##### **1.2 RELATED DOCUMENTS**

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

#### **PART 2 - PRODUCTS**

Not Used

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

##### **3.1 CLEARING AND GRUBBING**

- A. No clearing operations shall begin until the limits of clearing have been determined in the field by the Engineer and Contractor. Contractor shall flag limits of clearing for review by the Engineer prior to the start of any construction. Verify that existing plant life designated to remain is tagged or identified in the field.
- B. Remove trees, shrubs, brush, vines, grass and other vegetation, improvements, or obstructions that are interfering with the installation of new construction, except as specified or indicated otherwise to be left standing. All stumps shall be removed in their entirety, unless otherwise specified. Roots and matted roots shall be grubbed out to at least 30 inches below the existing grades shown on the Drawings.

##### **3.2 PROTECTION**

- A. Provide protection necessary to prevent damage to existing improvements indicated to remain in place or outside of the limits of work. Existing trees and shrubbery to remain shall be protected from injury. Except as otherwise directed, cutting and trimming of existing trees shall not be permitted. Existing trees to remain, and which are liable to be damaged by construction operations, shall be boxed and protected as directed. Protection shall be maintained until completion of the work of the

Contractor, unless otherwise directed by the Engineer.

1. Protect improvements on adjoining properties and on Owner's property.
2. Restore improvements damaged by Contractor's clearing activities to their original condition at no additional cost to the Owner.
- B. Carefully and cleanly cut roots and branches of trees indicated to be left standing, where such roots and branches obstruct new construction. Use only hand methods for grubbing inside the drip line of trees indicated to be left standing.
- C. Conduct site clearing operations to ensure minimum interference with roads, streets, walks and other adjacent occupied or used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.

### 3.3 DISPOSAL OF WASTE MATERIALS

- A. Remove waste, unsuitable and excess materials from Owner's property and dispose of same off site in accordance with all local, state and federal regulations. Contractor shall provide written documentation of proper disposal of all material cleared and grubbed from the site, and compliance with all applicable regulations.
- B. All timber designated in the field not to be disposed of by the Contractor shall be stored at a nearby location for ultimate disposal by the Owner. Timber to be stored shall be de-branched, cut into six foot lengths and stacked as directed by the Engineer.
- C. Burning and/or burial of cleared and grubbed material on site shall not be permitted.

### 3.4 STRIPPING AND STOCKPILING TOPSOIL

- A. Topsoil shall be carefully removed, to the depths directed, over all areas to be excavated and over all other areas to be disturbed as a result of the Contractor's operations in the performance of the work.
- B. The topsoil shall be transported and deposited in storage piles convenient to the areas which are subsequently to receive the application of topsoil, separate from other excavated materials, and in approved locations.
- C. The topsoil shall be stockpiled free of roots, stones and other undesirable material. The Contractor shall take all necessary precautions to prevent other excavated material or other objectionable material from becoming intermixed with the topsoil, either before or after the stripping and stockpiling operations. Stripping operations shall be completed prior to excavation, trenching, or grading operations.
- D. Topsoil which has been stripped and stockpiled, but is not needed after the completion of all final placement of topsoil and seed, shall be stockpiled on site in a location to be approved by the Engineer and shall remain the property of the Owner.

### 3.5 STOCKPILES

- A. Stockpiles shall be neatly trimmed and graded to provide drainage from surfaces and to prevent depressions where water may become impounded. All construction operations shall be performed so as not to cause mixing of objectionable materials with the stockpiled material, and stockpiles shall be protected and shall not be disturbed except for subsequent operations for replacing the material. The location of stockpiles shall be approved by the Owner and the Engineer.

END OF SECTION

## SECTION 02300

### EARTHWORK

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. This Section includes furnishing all plant, labor, equipment and materials and performing all operations in connection with excavations, excavation support systems, dewatering, blasting, backfilling, filling, grading, constructing embankments, compaction and appurtenant work, complete in place, in accordance with the Drawings and Specifications and as directed by the Engineer.

##### 1.2 RELATED DOCUMENTS

- A. Drawings, general provisions of the Contract, General Conditions, Supplemental Conditions and Division 1 Specification Sections apply to this Section.
- B. The State of New Hampshire Department of Transportation (NHDOT) Standard Specifications for Road and Bridge Construction (hereinafter referred to as NHDOT Standard Specifications), latest edition.
  - 1. All references to Method of Measurement, Basis of Payment and Payment Items in the NHDOT Standard Specifications are hereby deleted. References made to particular sections or paragraphs in the NHDOT Standard Specifications shall include all related articles mentioned therein.

##### 1.3 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Backfill Materials: The Contractor shall submit a grain size analysis and curve performed in accordance with ASTM D422 and a moisture density curve indicating the maximum dry density and optimum moisture content in accordance with ASTM D1557, for each proposed source of backfill for review by the Engineer. The grain size analysis shall indicate that the backfill material conforms to the gradation requirements specified.
- C. Filter Fabric: Submit the manufacturer's information on the filter fabric to the Engineer for review.
- D. Submit the qualifications of the independent geotechnical testing laboratory performing soil testing and inspection services during earthwork operations. The geotechnical testing laboratory must demonstrate to the Engineer's satisfaction, based on evaluation of laboratory submitted criteria conforming to ASTM D3740, that it has the experience and capability to conduct required field and laboratory geotechnical

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testing. Laboratory shall be supervised by a Registered Professional Engineer in the State of New Hampshire.

E. Excavation Support and Dewatering Plans:

1. Design Responsibility: The design of the excavation support and dewatering systems is the responsibility of the Contractor. The designs shall be prepared, sealed and signed by a registered Professional Engineer registered in the State of New Hampshire with a minimum of five years experience designing excavation support systems and dewatering systems.
2. Excavation Support Plan:
  - a. Design excavation support systems in accordance with the Drawings and the Specifications.
  - b. Design internal bracing support members for the maximum forces during excavation or removal stages.
  - c. Design excavation support systems in a manner permitting safe and expeditious construction of permanent structures, minimizing movement or settlement of the ground, and preventing damage to adjacent facilities.
  - d. For support systems in which bracing is installed between opposite sides of the excavation, design and construct support of both sides to obtain comparable rigidity.
  - e. Choose location of excavation support to allow for expected deviations from line during installation without encroaching on future permanent structures or right-of-way limits.
  - f. Tiebacks are not permitted.
  - g. Excavation support systems shall be located within the right-of-way or easements.
  - h. Submit drawings for the record, for contractor-designed excavation support systems.
  - i. Submit design calculations for the record, including theoretical deflections of all excavation support members, and anticipated surface settlement versus horizontal distance from excavation support members. The design calculations shall be prepared, sealed and signed by the Registered Professional Engineer, Registered in the State of New Hampshire responsible for the design.
  - j. Proceed with caution in areas of utility facilities. Expose utility facilities by hand excavation or by other methods acceptable to the utility owner and the Engineer.

- k. If existing utility facilities interfere with the proposed method of support, modify or relocate such facilities as required. Written permission shall be obtained from the Engineer prior to any modification or relocation of any existing facility.

3. Dewatering Plan:

- a. Design Criteria: The Contractor is responsible for the adequacy of the groundwater control systems, and for designing groundwater control systems, to:
  - 1) Provide a substantially dry and stable subgrade for the prosecution of the subsequent operations.
  - 2) Not result in damage to adjacent properties, buildings, structures, utilities, other work, work of adjacent contracts, and other facilities.
  - 3) Prevent soil particles and debris from entering the discharge by providing trash racks and sedimentation basins as required.
  - 4) Assure that after 12 hours of initial pumping, no soil particles will be present in discharge.
  - 5) The groundwater level shall be maintained at least 3 feet below the pipe invert during excavation, construction and backfilling.
  - 6) Collection and disposal of groundwater discharge shall be in accordance with all Federal, State and local codes, rules and regulations. The Contractor shall obtain all necessary permits.
- b. Prior to installation of the groundwater control system, submit working drawings and design data for the record, showing the following:
  - 1) The proposed type of groundwater control system.
  - 2) Arrangement and location of groundwater control system components. Description of equipment and other components to be used, with installation, operation, maintenance, and sediment disposal procedures.
  - 3) Types and sizes of sedimentation basins and filters.
  - 4) Design calculations demonstrating adequacy of the purposes groundwater control system and equipment.
  - 5) Within one week, resubmit revised working drawings as necessary to reflect changes required by field conditions.
  - 6) Obtain and submit to the Engineer, required agency permits for discharge

of effluent. Submit two copies of all required permits at least one week prior to system installation.

#### 1.4 EXCAVATION CLASSIFICATIONS

- A. Earth Excavation or "Excavation" consists of removal of materials encountered to the subgrade elevations indicated and subsequent reuse or disposal of the materials removed. All excavation is classified as earth excavation unless it otherwise meets the classifications provided below for unauthorized excavation, additional excavation, or rock excavation.
- B. Unauthorized Excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of the Engineer. Unauthorized excavation, as well as remedial work directed by the Engineer, shall be at Contractor's expense.
  - 1. Under footings, foundations bases, concrete slabs, retaining walls or other structures, fill unauthorized excavations to the proper elevations with lean concrete. Elsewhere, backfill and compact unauthorized excavations as specified for excavations of the same class, unless otherwise directed by the Engineer.
- C. Additional Excavation:
  - 1. When excavation has reached required subgrade elevations, notify the Engineer who will review subgrade conditions.
  - 2. If unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by the Engineer.
  - 3. Removal of unsuitable material and its replacement as directed will be paid on the basis of contract conditions relative to changes in work or as provided for under the unit rates for this classification.
- D. Rock Excavation:
  - 1. Rock excavation in trenches and pits includes removal and disposal of materials and obstructions encountered which cannot be excavated with a 1.0 cubic yard (heaped) capacity, 42-inch wide bucket on track-mounted power excavator equivalent to Caterpillar Model 215, rated at not less than 90HP flywheel power and 30,000 lb. drawbar pull. Trenches in excess of 10 foot 0-inches in width and pits in excess of 30 feet 0-inches in either length or width are classified as open excavation.
  - 2. Rock excavation in open excavations includes removal and disposal of materials and obstructions encountered which cannot be dislodged and excavated with modern track-mounted heavy-duty excavating equipment without drilling, blasting or ripping. Rock excavation equipment is defined as Caterpillar Model No. 973 or No. 977K, or equivalent track-mounted loader, rated at not less than 170HP



flywheel power and developing 40,000 lb. break-out force (measured in accordance with SAE J732C).

3. Determination of rock excavation classification will be made by the Engineer. Typical of materials classified as rock are boulders 1.0 cu. yd. or more in volume, solid rock, rock in ledges, and rock-hard cementitious aggregate deposits. Intermittent drilling, blasting or ripping performed to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation. Do not perform rock excavation work until material to be excavated has been cross-sectioned and classified by Engineer. If the area to be excavated is preblasted prior to the excavation of overburden soils, the Engineer shall be notified at least two days in advance to allow observation of the preblast drilling by the Engineer in order to classify the excavation. Visual observation of the completed excavation may be made by the Engineer to modify the excavation classifications. Removal of rock excavation prior to classification by the Engineer shall be considered as earth excavation unless accepted by the Engineer in writing. Such excavation will be paid on the basis of contract unit rates for this classification.

## 1.5 EXCAVATION

- A. The Contractor shall perform all excavations of every description and of whatever substances encountered, in a manner as required to allow for placing of temporary earth support, forms, installation of pipe and other work, and to permit access to the Engineer for the purpose of observing the work. Bottoms of trenches and excavations shall be protected from frost and shall be firm, dry and in an acceptable condition to receive the work; work shall not be placed on frozen surfaces nor shall work be placed on wet or unstable surfaces.
- B. All excavations made in open cut will be controlled by the conditions existing at the various locations and shall always be confined to the limits as designated by the Engineer. In no case shall earth be excavated or disturbed by machinery so near to the finished subgrade for structures and pipelines as to result in the disturbance of the earth below the subgrade. The final excavation to subgrade should be accomplished with a smooth faced bucket or by hand if directed by the Engineer.
- C. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons, and damage to property.
- D. Contractor shall provide suitable and safe means for completely covering all open excavations and for accommodating travel when work is not in progress.

## 1.6 TEMPORARY EARTH SUPPORT

- A. The Contractor shall furnish, place and maintain such sheeting, shoring, and bracing at locations necessary to support the sides of excavations and to prevent danger to persons or damage to pavements, facilities, utilities, or structures, and to prevent injurious caving or erosion or the loss of ground, and to maintain pedestrian and

vehicular traffic as directed and required.

- B. In all sheeting, shoring and bracing operations, care shall be taken to prevent injury to persons or damage to structures, facilities, utilities and services. Any injuries to persons shall be the responsibility of the Contractor; and any damage to the work occurring as a result of settlement, water or earth pressure, or other causes due to inadequate bracing or other construction operations of the Contractor shall be satisfactorily repaired or made good by the Contractor, at no additional expense to the Owner.
- C. Where sheeting is to be used, it shall be driven ahead of excavation operations to the extent practicable so as to avoid the loss of material from behind the sheeting; where voids occur outside of the sheeting, they shall be filled immediately with selected fill, thoroughly compacted.
- D. The Contractor shall leave in place all sheeting and bracing at the locations and within the limits ordered by the Engineer in writing. The Contractor shall cut off the sheeting at elevations to be determined by the Engineer.
- E. The Contractor shall comply with all federal, state, and local safety regulations, and requirements.

#### 1.7 GROUNDWATER CONTROL

- A. The Contractor shall provide, at his own expense, adequate pumping and drainage facilities to maintain the excavated area sufficiently dry from groundwater and/or surface runoff so as not to adversely affect construction procedures nor cause excessive disturbance of underlying natural ground. The drainage of all water resulting from pumping shall be managed so as not to cause damage to adjacent property.
- 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 all the areas of work in a suitable dry condition, shall be repaired by the Contractor, as directed by the Engineer, at no additional expense to the Owner. The Contractor's pumping and dewatering operations shall be carried out in such a manner as to prevent damage to the Contract work and so that no loss of ground will result from these operations. Precautions shall be taken to protect new work from flooding during storms or from other causes. Pumping shall be continuous where directed by the Engineer to protect the work and/or to maintain satisfactory progress.
- C. All pipelines or structures not stable against uplift during construction or prior to completion shall be thoroughly braced or otherwise protected. Water from the trenches, excavations and drainage operations shall be disposed of in such a manner as to avoid public nuisance, injury to public health or the environment, damage to public or private property, or damage to the work completed or in progress.
- D. The Contractor shall control the grading in the areas surrounding all excavations so that the surface of the ground will be properly sloped to prevent water from running

into the excavated area. Where required, temporary ditches shall be provided for drainage. Upon completion of the work and when directed, all areas shall be restored by the Contractor in a satisfactory manner and as directed.

#### 1.8 BLASTING

- A. Employ an approved, independent, vibration/blasting consultant to conduct pre-blast surveys of the interior and exterior of all buildings, to conduct test blasting prior to production blasting, to devise suitable blasting procedures for production blasting, and to monitor production blasting.
- B. Conduct a pre-construction survey of the interior and exterior of all buildings located within 75 feet of the work area. Survey shall include videotape and still photographs to document pre-construction conditions.
- C. Test blast to develop control procedures for production blasting so that no disturbance or damage shall be done to utilities, equipment, buildings, or structures.
- D. Based on the results of test blasting, have the vibration blasting consultant develop a suitable blasting program and distance-quantity of explosive tables for the production blasting. Submit the blasting program and distance-quantity tables for the record to the Engineer prior to commencement of production blasting. Conduct production blasting operations in accordance with the blasting program.
- E. Require the vibration/blasting consultant to perform continuous monitoring of blasting operations. Monitor blasting with a minimum of two 3-component seismometers that record the entire particle velocity wave train and not just peak velocities. Obtain accurate, legible seismometer records of monitored blasts. Submit three copies of blast records to the Engineer within 7 days after blasting.
- F. Perform continuous monitoring of construction operations and periodic monitoring of structures adjacent to work area to ensure structures are not affected by construction operations. Establish a temporary benchmark elevation on adjacent structures and monitor structures for potential settlement.
- G. Keep and submit to Engineer and at time specified by Engineer, an accurate record of each blast showing general location of blast, depth and number of drillholes, kind and quantity of explosive used, kind and number and interval of delay periods used, and other data required for a complete record.
- F. If evidence of disturbance or damage to utilities, equipment, buildings, or structures is observed or reported, immediately notify the Engineer and discontinue blasting operations and require vibration/blasting consultant to recommend revised blasting procedures. Consult with Engineer regarding revised procedures.
- G. Initiate the revised procedures before blasting is continued.
- H. Restore or replace utilities, equipment, buildings, or structures damaged by blasting operations at no cost to the Owner.

## I. Safety Requirements

1. Keep explosives on the site only in such quantity as needed for work under way and only during time as being used. Notify Engineer at least 24 hours in advance of intention to store and use explosives. Store explosives in a secure manner and separate from all tools. Store caps or detonators safely at a point over 100 ft. distant from explosives. Promptly remove from premises remaining material when need for explosives has ended.
  2. Conform to State, Federal, and municipal laws, ordinances, and regulations relating to transportation, storage, handling, and use of explosives. If any of above-mentioned laws, ordinances, or regulations require a licensed blaster to perform or supervise the work of blasting, employ a licensed blaster. Require him to have his license on site and permit examination by Engineer or other officials having jurisdiction.
  3. Conduct operations involving explosives with all possible care to avoid injury to persons and property. Do blasting only with such quantities and strengths of explosives and in such manner as will break rock approximately to intended lines and grades, leaving rock not to be excavated in an unshattered condition. Avoid excessive cracking of rock upon or against which any structure will be built. Prevent injury to existing pipes, structures and property above or below ground. Cover rock with logs or mats, or both. Give sufficient warning to persons in vicinity of work before a charge is exploded.
  4. Complete blasting within a distance of 50 ft. before any portion of a masonry structure is placed or any pipe is laid.
  5. Determine presence of two-way radios, stray electrical currents and other conditions adversely affecting blasting operations and implement necessary precautions to prevent accidents and premature blasts.
- J. Use sufficient explosive to shatter rock for future excavation. Complete shattering before any pipe or fitting is placed within 50 ft. of rock to be shattered.
- K. Remove shattered rock. If rock below normal depth is shattered due to drilling or blasting operations of Contractor and Engineer considers such shattered rock to be unfit for foundations, remove it and backfill excavation with concrete as required, except that in pipe trenches, use screened gravel for backfill. Do such removal and backfilling at no additional compensation.
- L. Remove dirt and loose rock, as directed, from designated areas and clean surface of rock thoroughly, using steam to melt snow and ice, if necessary. Remove water in depressions, so that whole surface of designated area can be inspected to determine whether seams or other defects exist.
- M. Rough surfaces of rock foundations sufficiently to bond well with masonry and embankments to be built thereon and, if required, cut to rough benches or steps.

- N. Remove from the rock surface to remain all vegetation, dirt, sand, clay, boulders, scale, excessively cracked rock, loose fragments, ice, snow, and other objectionable substances. Use picking, barring, wedging, streams of water under sufficient pressure, stiff brushes, hammers, steam jets, and other effective means to accomplish this cleaning, and remove free water left on the surface of rock. Perform all of above before any masonry or embankment is built on or against rock.
- O. Remove piles of boulders or loose rock encountered within limits of earth embankments to a suitable place of disposal.
- P. Use excavated rock in backfilling trenches subject to following limitations:
  - 1. Do not use pieces of rock larger than permitted by the Engineer.
  - 2. Do not allow rock quantities used in backfill in any location to result in formation of voids.
  - 3. Do not place rock backfill within 16 in. of surface of finish grade.
  - 4. Backfill with material obtained from outside sources at no additional compensation, when material suitable for backfilling is not available in sufficient quantity from other excavations.

#### 1.9 QUALITY ASSURANCE

- A. Testing: Employ a certified, independent testing laboratory acceptable to Owner and Engineer to perform field and laboratory material evaluation tests. Materials and installed work may require testing and retesting at any time during progress of work. Tests, including retesting of rejected materials for installed work, shall be done at Contractor's expense.

### PART 2 - PRODUCTS

#### 2.1 BACKFILL MATERIALS

- A. Common Fill: Common fill shall be soil containing no stone greater than 2/3 loose lift thickness. The materials shall be free of trash, ice, snow, tree stumps, roots and other organic and deleterious materials. Common fill shall not contain more than 35 percent by weight of silt and clay. It shall be of such a nature and character that it can be compacted to the specified densities in a reasonable length of time. Topsoil and subsoil shall not be considered common fill.
- B. Structural Fill: Structural fill shall consist of gravel and sand consisting of hard durable particles, and free from trash, ice and snow, tree stumps, roots and other organic and deleterious or organic matter. Structural fill shall conform to the following gradation requirements:

| Sieve Size | Percent Passing by Weight |
|------------|---------------------------|
|------------|---------------------------|

| Sieve Size   | Percent Passing by Weight |
|--|---------------------------|
| 8-inch   | 100 (a)                   |
| 3-inch   | 70-100                    |
| 1-inch   | 45-90                     |
| No. 4  | 20-70                     |
| No. 10   | 15-60                     |
| No. 40   | 10-40                     |
| No. 200  | 0-10                      |
| (a) Four-inch maximum particle size within 12 inches of slab, footing or pavement grade. |                           |

- C. Stone Fill, Class B: Class B stone fill shall be irregular in shape with approximately 50 percent of the mass having a minimum volume of 3 cubic feet, approximately 40 percent of the mass ranging between 1 and 3 cubic feet, and the remainder of the mass composed of spalls.
- D. Stone Fill, Class C: Class C stone fill shall consist of clean, durable fragments of ledge rock of uniform quality, reasonably free from thin or elongated pieces. The stone shall be made from rock which is free from topsoil and other organic material. The stone shall meet the following requirements and shall meet NHDOT Standard Specifications, Section 585.

| Sieve Size | Percent Passing by Weight |
|------------|---------------------------|
| 12-inch    | 100                       |
| 4-inch     | 50-90                     |
| 1 ½ -inch  | 0-30                      |
| ¾-inch     | 0-10                      |

- E. Crushed Ledge: Crushed ledge shall consist of durable crushed ledge, free from ice, and snow, sand, clay, loam or other deleterious or organic material. Crushed ledge shall conform to the following gradation requirements:

| Sieve Size | Percent Passing by Weight |
|------------|---------------------------|
| 1-inch     | 90-100                    |
| ½ -inch    | 60-80                     |

| Sieve Size                            | Percent Passing by Weight |
|---------------------------------------|---------------------------|
| No. 4                                 | 30-50                     |
| No. 200(a)                            | 0-10                      |
| (a) Fraction passing the No. 4 Sieve. |                           |

- F. **Crushed Stone:** Crushed stone shall consist of durable crushed rock or durable crushed gravel stone, free from ice and snow, sand, clay, loam, or other deleterious or organic material. The crushed stone shall be uniformly blended and shall conform to the following requirements and shall meet NHDOT Standard Specifications, Section 520, Standard Stone Size No. 67 and 89.

| Sieve Size | Percent Passing by Weight  |                            |
|------------|----------------------------|----------------------------|
|            | 3/4-inch Stone<br>(No. 67) | 1/2-inch Stone<br>(No. 89) |
| 1-inch     | 100                        | ---                        |
| 3/4-inch   | 90-100                     | ---                        |
| 1/2-inch   | ---                        | 100                        |
| 3/8-inch   | 20-55                      | 90-100                     |
| No. 4      | 0-10                       | 20-55                      |
| No. 8      | 0-5                        | 5-30                       |
| No. 16     | ---                        | 0-10                       |
| No. 50     | ---                        | 0-5                        |

- G. **Crushed Gravel:** Crushed gravel shall consist of durable gravel and shall be free from ice and snow, sand, clay, loam, or other deleterious or organic material. Crushed gravel shall meet the following requirements and shall meet NHDOT Standard Specifications, Section 304.

| Sieve Size                            | Percent Passing by Weight |
|---------------------------------------|---------------------------|
| 3-inch                                | 100                       |
| 2-inch                                | 95-100                    |
| 1-inch                                | 55-85                     |
| No. 4                                 | 27-52                     |
| No. 200(a)                            | 0-12                      |
| (a) Fraction passing the No. 4 Sieve. |                           |

- H. Gravel: Gravel shall consist of durable gravel and shall be free from ice and snow, rots, sod, rubbish, sand, clay, loam, or other deleterious or organic material. Gravel shall meet the following requirements and shall meet NHDOT Standard Specifications, Section 304.

| Sieve Size                            | Percent Passing by Weight |
|---------------------------------------|---------------------------|
| 6-inch                                | 100                       |
| No. 4                                 | 20-75                     |
| No. 200(a)                            | 0-12                      |
| (a) Fraction passing the No. 4 Sieve. |                           |

- I. Sand: Sand shall consist of clean inert, hard, durable grains of quartz or other hard durable rock, free from clay, organic, surface coatings or other deleterious material. Sand shall conform to the following gradation requirements meeting NHDOT Standard Specification Section 304.

| Sieve Size                            | Percent Passing by Weight |
|---------------------------------------|---------------------------|
| 6-inch                                | 100                       |
| No. 4                                 | 70-100                    |
| No. 200 (a)                           | 0-12                      |
| (a) Fraction passing the No. 4 Sieve. |                           |

- J. Controlled Density Fill: Controlled Density Fill (CDF) shall be self compacting, excavatable, cement-based backfill material. It shall consist of cement, fine aggregate, fly ash and water; air-entraining mixtures may also be added. The 28 day compressive strength shall be less than 100 psi, in place density shall be 90 to 100 psf. Air entrainment shall be 25% to 30%.

- K. Asphalt Stabilized Base: The material shall consist of the existing pavement blended with the underlying sand and gravel sub-base as required to meet these specifications. Reclaimed stabilized base shall have a minimum bitumen content between 3 and 5 percent and conform to the following gradation:

| Sieve Size | Percent Passing by Weight |
|------------|---------------------------|
| 3"         | 100                       |
| 1"-1½"     | 80-100                    |



| Sieve Size | Percent Passing by Weight |
|------------|---------------------------|
| 3/4"       | 55-90                     |
| No. 4      | 40-70                     |
| No. 200    | 3-10                      |

## 2.2 FILTER FRABIC

- A. Filter Fabric: Filter Fabric used as a drainage medium shall consist of a nonwoven fabric made from polypropylene or polyethylene filaments or yarns. The fabric shall be inert to organic chemicals commonly encountered in the soil. The fabric shall conform to the following recommended property tests:

| Property                | Unit    | Test Method    | Minimum Value |
|-------------------------|---------|----------------|---------------|
| Weight                  | oz/sy   | ASTM D-3776-84 | 4.5           |
| Grab Strength           | lbs     | ASTM D-4632-86 | 120           |
| Grab Elongation         | percent | ASTM D-4632-86 | 55            |
| Trapezoid Tear Strength | lbs     | ASTM D-4533-85 | 50            |
| Mullen Burst Strength   | psi     | ASTM D-3786-80 | 210           |
| Puncture Strength       | lbs     | ASTM D-4833-88 | 70            |

## PART 3 - EXECUTION

### 3.1 FILLING AND BACKFILLING

- A. Subgrade Preparation: After the subgrade has been shaped to line, grade, and cross-section, it shall be thoroughly compacted. This operation shall include any required reshaping and wetting to obtain proper compaction. All soft or otherwise unsuitable material shall be removed and replaced with suitable material from excavation or borrow. The resulting area, and all other low sections, holes, or depressions shall be brought to the required grade with accepted material and the entire subgrade shaped to line, grade and cross-section and thoroughly compacted.
- B. Backfill Material Selection:
1. Unless otherwise specified or directed, material used for filling and backfilling shall meet the requirements as herein specified.
  2. In general, the material used for backfilling utility trench excavations shall be material removed from the excavations provided that the reuse of these materials result in the required trench compaction and meets the requirements specified for

common fill.

3. All backfill placed within building limits shall be structural fill unless otherwise specified.
4. In areas where the bottom of the excavation is in fine sand and silt and is below the groundwater table, the first lift of backfill shall be 12 inches of compacted crushed stone, unless otherwise indicated on the Drawings, to provide a working mat and drainage layer.
5. Maintain backfill material with a uniform moisture content, with no visible wet or dry streaking, between plus 2 percent and minus 3 percent of optimum moisture content. The final filled soil mass shall be as uniform as possible in lift thickness, moisture content, and effort required to compact soil mass.

C. Trench Backfill:

1. The trenches shall be backfilled as soon as practicable with suitable material. All trench backfilling shall be done with special care, in the following manner and as directed by the Engineer.
2. Backfill material for pipe bedding shall be deposited in the trench, uniformly on both sides of the pipe, for the entire width of the trench to the springline of the pipe. The selected backfill material shall be placed by hand shovels, in layers not more than 4 inches thick in loose depth, and each layer shall be thoroughly and evenly compacted by tamping on each side of the pipe to provide uniform support around the pipe, free from voids.
3. The balance of backfill shall be spread in layers not exceeding 12 inches in loose depth. Each layer shall be thoroughly compacted by mechanical methods and shall contain no rock, stones or boulders larger than 4 inches in their greatest dimension.
4. All trench backfilling shall be done with special care and must be carefully placed so as not to disturb the work at any time; if necessary, a timber grillage or other suitable method shall be used to break the fall of material.
5. The moisture content of the backfill material shall be such that proper compaction will be obtained. Puddling of backfill with water will not be permitted.
6. Backfill within areas to receive topsoil or pavement construction shall be made to grades required to establish the proper subgrade for the placement of topsoil or pavement base courses.
7. In backfilling trenches, each layer of backfill material shall be moistened and compacted to a density at least equal to that of the surrounding undisturbed earth, and in such a manner as to permit the rolling and compaction of the filled trench or excavation with the adjoining earth to provide the required bearing value, so that paving of the excavated and disturbed areas, where required, can proceed

immediately after backfilling is completed.

8. Any trenches or excavations improperly backfilled or where settlement occurs shall be reopened, to the depth required for proper compaction, then refilled and compacted with the surface restored to the required grade and condition, at no additional expense to the Owner.
9. During filling and backfilling operations, pipelines will be checked by the Engineer to determine whether any displacement of the pipe has occurred. If the observation of the pipelines shows poor alignment, displaced pipe or any other defects, they shall be remedied in a manner satisfactory to the Engineer at no additional cost to the Owner.
10. The top 18 inches of backfill in unpaved roads shall be constructed with 6 inches of crushed gravel on top of 12 inches of gravel. The material shall be placed in three 6-inch lifts, each lift proof rolled and compacted with rollers before placing subsequent lifts.

D. Backfilling Against Structures:

1. Backfilling against masonry or concrete shall not be done until permitted by the Engineer. The Contractor shall not place backfill against or on structures until they have attained sufficient strength to support the loads (including construction loads) to which they will be subjected, without distortion, cracking or other damage. As soon as practicable after the structures are structurally adequate and other necessary work has been satisfactorily completed, special leakage tests of the structures shall be made by the Contractor, as required by the Engineer. After the satisfactory completion of leakage tests and the satisfactory completion of any other required work in connection with the structures, the backfilling around the structures shall proceed using suitable and approved excavation material. The best of the backfill material shall be used for backfilling within 2 feet of the structure. Just prior to placing backfill, the areas shall be cleaned of all excess construction material and debris and the bottom of excavations shall be in a thoroughly compacted condition.
2. Symmetrical backfill loading shall be maintained. Special care shall be taken to prevent any wedging action or eccentric loading upon or against the structures. During backfilling operations, care shall be exercised that the equipment used will not overload the structures in passing over and compacting these fills. Except as otherwise specified or directed, backfill shall be placed in layers not more than 12 inches in loose depth and each layer of backfill shall be compacted thoroughly and evenly using approved types of mechanical equipment. Each pass of the equipment shall cover the entire area of each layer of backfill.
3. In compacting and other operations, the Contractor shall conduct his operations in a manner to prevent damage to structures due to passage of heavy equipment over, or adjacent to, structures, and any damage thereto shall be made good by the Contractor at no additional expense to the Owner.

E. After backfilling trenches and excavations, the Contractor shall maintain the surfaces

of backfill areas in good condition so as to present a smooth surface at all times level with adjacent surfaces. Any subsequent settling over backfilled areas shall be repaired by the Contractor immediately, in a manner satisfactory to the Engineer, and such maintenance shall be provided by the Contractor for the life of this Contract, at no additional expense to the Owner.

- F. The finished subgrade of the fills and filled excavations upon which topsoil is to be placed, or pavements are to be constructed, shall not be disturbed by traffic of other operations and shall be maintained in a satisfactory condition until the finished courses are placed. The storage or stockpiling of materials on finished subgrade will not be permitted.
- G. Uniformly smooth grading of all areas to be graded, as indicated and as directed, including excavated and filled sections, embankments and adjacent transition areas, and all areas disturbed as a result of the Contractor's operations, shall be accomplished. The finished surfaces shall be reasonably smooth, compacted and free from surface irregularities.

### 3.2 COMPACTION

- A. **Compaction Requirements:** The degree of compaction is expressed as a percentage of the maximum dry density at optimum moisture content as determined by ASTM Test D1557, Method C unless otherwise noted. The compaction requirements are as follows:

| Area   | ASTM Density<br>Degree of Compaction |
|--|--------------------------------------|
| Below footings                                   | 95%                                  |
| Below slabs                                      | 95%                                  |
| Wearing and base course pavement                 | 95% *                                |
| Aggregate and reclaim base course below pavement | 95% *                                |
| Subgrade below aggregate/reclaim base course     | 92%                                  |
| Trench backfill - below pavements                | 95%                                  |
| - below landscaped areas                         | 90%                                  |
| - below structures                               | 95%                                  |
| Other areas                                      | 90%                                  |

\* The criteria for degree of compaction and density testing methodology shall be as specified in NHDOT Standard Specifications.

#### B. Moisture Control:

1. Fill that is too wet for proper compaction shall be disced, harrowed, or otherwise

dried to a proper moisture content to allow compaction to the required density. If fill cannot be dried within 24 hours of placement, it shall be removed and replaced with drier fill.

2. Fill that is too dry for proper compaction shall receive water uniformly applied over the surface of the loose layer. Sufficient water shall be added to allow compaction to the required density.

C. Unfavorable Conditions:

1. In no case shall fill be placed over material that is frozen. No fill material shall be placed, spread or rolled during unfavorable weather conditions. When work is interrupted by heavy rains, fill operations shall not be resumed until the moisture content and the density of the previously placed fill are as specified.
2. In freezing weather, a layer of fill shall not be left in an uncompacted state at the close of the day's operations. Prior to terminating work for the day, the final layer of compacted fill shall be rolled with a smooth wheeled roller to eliminate ridges of soil left by compaction equipment.

D. Compaction Control:

1. In-place density tests shall be made in accordance with ASTM D1556, D2922, D2167 or NHDOT Standard Specifications (roadway construction only) as the work progresses, to determine the degree of compaction being attained by the Contractor. Any corrective work required as a result of such tests shall be performed by the Contractor at no additional expense to the Owner. In-place density tests shall be made a Contractor's expense by a testing laboratory experienced and certified to complete required testing.
2. The Engineer's duties do not include supervision or direction of the actual work by the Contractor, his employees or agents. Neither the presence of the Engineer nor any observation and testing performed by Engineer shall excuse the Contractor from defects discovered in his work at that time or subsequent to the testing.
3. In-place density tests shall be performed as a minimum according to the following or as directed by the Engineer:
  - a. Two tests per lift under spread footings and slabs.
  - b. A minimum of every 10 cubic yards of backfill in trenches or around structures.
  - c. In accordance with NHDOT Standard Specifications for roadway construction.

3.3 FINE GRADING

- A. Before placement of surface treatment or base course material, the subgrade shall be

shaped to a true surface conforming to the Drawings. All depressions and high spots shall be filled with suitable material or removed and such areas again compacted until the surface is smooth and properly compacted. A tolerance of 1/2-inch above or below the finished subgrade will be allowed provided that this 1/2-inch above or below grade is not maintained for a distance longer than 50 feet and that the required crown is maintained in the subgrade. Any portion which is not accessible to a roller shall be thoroughly compacted by other mechanical methods.

### 3.4 TEMPORARY EARTH SUPPORT

- A. Install, maintain, and remove the excavation support system in accordance with the record drawings, and in such a manner as to prevent movement, settlement, or loss of ground, removal of fines from the adjacent ground, and damage to or movement of adjacent structures.
- B. Perform field welding by certified welders in accordance with American Welding Society Standard AWS D 1.1, "Structural Welding Code."
- C. The distance from ground surface to the uppermost brace level or tieback shall not exceed 5 feet. The vertical distance between brace levels shall not exceed 12 feet. The maximum distance between the lowermost brace level to the excavation bottom shall not exceed 10 feet.
- D. Soldier Piles and Lagging:
  - 1. Use only in areas where the groundwater table outside of the excavation support system is lower than the bottom of excavation.
  - 2. Prebore holes for soldier poles to a diameter at least 4 inches larger than the maximum diagonal dimension of the pile sections. Extend holes to the full design depth of the soldier pile.
  - 3. Carry bottom of soldier pile design below the main excavation adequate to prevent lateral and vertical movement. In areas where additional excavation is required below the main excavation subgrade after the soldier poles have been installed, make provisions to prevent movement of main excavation supports.
  - 4. After seating soldier piles in pre-excavated holes, encase piles with structural concrete by tremie methods up to the lowest point of the excavation adjacent to the pile location. Immediately fill remainder of the hole with lean concrete or sand by tremie methods, completely encasing the pile.
  - 5. After concrete filled soldier piles have attained 25% of concrete design strength, excavation may proceed. As excavation proceeds, remove lean concrete or sand from pile as long as excavation progresses sufficient to place lagging. Follow the excavation closely with placement of lagging.
  - 6. Use timber lagging, precast reinforced concrete lagging, or steel sheeting secured in place to soldier piles, or installed behind flanges. Use precast reinforced

concrete members or steel sheeting secured in place to soldier piles when excavation support system is to be left in place.

7. Carefully perform excavation for the installation of lagging to minimize the formation of voids.
8. If unstable material is encountered during excavation, take suitable measures to stabilize it and prevent ground displacement.
9. Maintain a sufficient quantity of material on hand for lagging, bracing, and other operations for protection of the work and for use in case of an accident or an emergency.
10. Fill voids behind lagging with sand bags or other material acceptable to the Engineer.
11. The hole bottom shall be cleaned free of all loose soil using methods acceptable to the Engineer.

E. Sheet Piling:

1. Install sheet piling to the depth below the bottom of excavation to prevent movement of the supported soil, to cut off groundwater, and prevent heaving or piping of the bottom of the excavation.
2. Grout may be used by the Contractor, or the Contractor may be directed by the Engineer to use grout to increase the stability and strength of soil, to minimize soil loss, or to control seepage through interlocks.

F. Internal Bracing for Support System:

1. Use wales, struts, and rakers as necessary to provide internal excavation support. Continuous wales shall be used for either sheet piles, or soldier piles and lagging.
2. When wales are used, obtain tight bearing between wales and wall, and ample bearing area with wedges and packing for load transfer. Connections between struts, wales, and the wall system shall be capable of resisting the design compressive loads as well as a tensile load equal to ten percent of the strut compressive design load.
3. Provide struts with intermediate bracing as needed to enable the struts to carry the maximum load without distortion or buckling. The slenderness ratio of the struts shall be less than 120.
4. Provide diagonal bracing as needed for stability of the system.
5. Include web stiffeners, plates, or angles as needed to prevent rotation, crippling, or buckling of connections and points of bearing between structural steel members. Allow for eccentricities caused by field fabrication and assembly.

6. Install and maintain internal bracing support members in tight contact with each other and with the surface being supported.
7. Preload internal bracing members, including struts, shores and similar members to 50 percent of the design load.
  - a. Use procedures that produce uniform loading members without inducing harmful eccentricities, over-stressing, or distortion.
  - b. Make provisions for permanently fixing each member with steel shims or wedges welded into place.
  - c. Accomplish preloading by jacking supports in place against soldier piles or wales. Do not use wooden wedges to preload bracing members.
  - d. Include in the preloading system the means to determine, within five percent, the amount of preload induced into bracing members.
8. Excavate no more than 2 feet below the bottom of strut about to be placed. Install strut, and preload immediately after installation and before continuing excavation.
9. Do not remove internal bracing and transfer loads to the permanent structure except as provided in the accepted design. When removing struts, increased vertical spacing will not be allowed.

G. Removal of Excavation Support:

1. Remove all portions of the excavation support system. When removing the excavation support system, do not disturb or damage adjacent buildings, structures, waterproofing material, or utilities. Fill voids immediately with lean concrete.
2. Remove non-salvageable material of the excavation support system from the site immediately.
3. The Contractor shall be responsible for any damage to adjacent buildings, structures, waterproofing material, or utilities due to the removal of the excavation support system. All damage to existing buildings, structures, waterproofing materials, or utilities shall be repaired immediately by the Contractor to the satisfaction of the Owner, Utility Owner, and the Engineer, at no additional cost to the Owner or the Utility Authority.

END OF SECTION



## **SECTION 02370**

### **EROSION AND SEDIMENTATION CONTROL**

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

##### **1.1 SUMMARY**

- A. This Section includes furnishing all labor, equipment, and materials and performing all operations in connection with the construction, maintenance and removal of erosion and sedimentation checks and controls, stabilization of slopes and disturbed areas, protection of resource areas, and disposal of sediment and surface water, in accordance with the Drawings and Specifications and as directed by the Engineer.

##### **1.2 RELATED DOCUMENTS**

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

##### **1.3 SUBMITTALS**

- A. Submit in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Submit manufacturer's literature and catalog data, or both, showing that the materials provided meet the requirements of this Specification.
- C. Submit manufacturer's certificates of compliance that the silt fence and matting/blankets meet the Specifications.
- D. Submit samples of silt fence and matting/blanket materials.
- E. Submit erosion and sedimentation control plan as directed by the Engineer.

#### **PART 2 - PRODUCTS**

##### **2.1 HAY BALES**

- A. Hay bales shall consist of hay from acceptable grasses and legumes, free from weeds, reeds, twigs, chaff, debris, other objectionable material or excessive amounts of seeds and grain. It shall be free from rot or mold and the moisture content shall not exceed fifteen (15) percent by weight at the time of weighing.
- B. The hay shall be securely baled with wire of adequate size to allow for possible rusting while in use and to permit rehandling when the bale is in a saturated condition.
- C. Individual bales shall be of a longitudinal shape not exceeding one hundred (100)

pounds when weighed.

## 2.2 SILT FENCE

- A. Filter fabric for silt fence shall consist of pervious sheets of woven propylene, nylon, polyester, or ethylene yarn. Material shall meet the following requirements:

| Requirement             | Property                        | Test Method                  |
|-------------------------|---------------------------------|------------------------------|
| Tensile Strength        | ASTM D 1682 Grab Test           | 100 lbs. min.                |
| Grab Elongation         | ASTM D 1682 Grab Test           | 30 % +/- 10%                 |
| Equivalent Opening Size | 100 sieve min.<br>40 sieve max. | Corps of Engineers CW 02215  |
| Bursting Strength       | ASTM D 751 Diaphragm            | 175 psi min. Bursting Tester |

- B. Filter fabric shall contain a stabilizer and/or inhibitors to make the filaments resistant to deterioration resulting from exposure to sunlight or heat to provide a minimum of 6 month of expected usable construction life at a temperature range of 0 degrees to 120 degrees F. The fabric filter shall be a minimum of 36 inches wide, cut from a continuous roll to finish fence length to avoid the use of seams. Splice filter fabric together only when absolutely necessary and only at a support post, with a minimum 6 inch overlap and securely sealed. The filter fabric shall be free of defects or flaws which significantly affect its physical and/or filtering properties.
- C. Wire fence reinforcement for fabric silt fences shall be a minimum of 30 inches in height, a minimum of 14 gauge and shall have a maximum mesh spacing of 6 inches. The wire fence reinforcement shall be used with all filter fabrics except those approved for use without a wire fence reinforcement by the manufacturer.
- D. Posts shall be of wood or steel and a minimum of 4 feet long. Wood posts shall be at least nominal 2 x 2 inches. Steel posts shall be round or U, T or C shaped with a minimum weight of 1.3 pounds per foot and have projections for fastening the wire to the fence.
- E. Wire staples for attaching filter fabric to wooden posts shall be No. 9 gauge and shall be at least one inch long.

## 2.3 MATTING/BLANKETS

- A. Jute Matting: Undyed and unbleached jute yarn woven into a uniform open, plain weave mesh, furnished in rolled strips conforming to the following physical requirements:

| Property | Requirement |
|----------|-------------|
|----------|-------------|

|        |  |
|--------|--|
| Width  | 48", plus or minus 1"<br>78 warp ends per width of cloth.<br>41 weft ends per yard |
| Weight | 1.22 - 1.80 lbs/sq.yd., plus or minus 5%   |

- B. Excelsior Matting: Uniform web of interlocking wood excelsior fibers with a backing of mulch net fabric on one side only. The mulch net shall be of either twisted paper chord or cotton cord. Excelsior matting shall be furnished in rolled strips and shall conform to the following physical requirements:

| Property | Requirement                       |
|----------|-----------------------------------|
| Width    | 36", plus or minus 1"             |
| Weight   | 0.80 lbs/sq.yd., plus or minus 5% |

- C. Soil Erosion Matting: Enkamat Type 7020, 0.9 mm thick, by BASF Corp., or approved equal.
- D. Erosion Control Mulching Blanket: Hold/Gro by Gulf State Paper Corps., or approved equal.
- E. Staples: No. 11 (or heavier) plain iron wire, made from at least 12-inch lengths of wire bent to form a U of 1-1/2 to 2 inch width. Use longer staples for loose soils where otherwise required.

### PART 3 - EXECUTION

#### 3.1 GENERAL

- A. Erosion and sedimentation control measures shall be installed in accordance with manufacturer's recommendations, as indicated on the Drawings and as directed by the Engineer.
- B. Erosion and sedimentation control measures shall be installed following clearing and prior to grubbing operations. No removal of stumps, boulders, topsoil or preparation of excavation shall be performed until Engineer has approved the installation of erosion and sedimentation control measures.
- C. Contractor shall comply with all permits and conditions of permits issued for the project. Compliance shall be Contractor's responsibility whether or not the Contractor obtained the permit.
- D. Contractor shall comply with all local, federal and state regulations.
- E. Erosion and sedimentation control measures shall remain in place and be maintained by the Contractor until permanent measures have been established, unless otherwise

directed by the Engineer. Maintenance of control measures shall be performed by the Contractor at no additional cost to the Owner.

### 3.2 WORK IN RESOURCE AREAS

- A. Resource Areas: Resource areas are those areas, conditions or features which, when disturbed by construction activities, create an adverse environmental impact. Such areas include, but are not necessarily limited to densely wooded areas, steep slopes, wetland areas, streams, brooks, rivers and other water bodies.
- B. A sedimentation barrier consisting of a continuous row of staked hay bales and/or silt fence shall be placed between all resource areas and the work area to prevent soil materials from entering the resource area. This sedimentation barrier shall be inspected and maintained on a daily basis.
- C. The following activities shall not be permitted within 50 feet of designated resource areas:
  - 1. Stockpiling and storage of equipment or materials.
  - 2. Refueling of equipment.
  - 3. Maintenance and repair of vehicles and equipment.
- D. Should the Owner deem that the Contractor's activities are unnecessarily detrimental to resource areas, then the Owner reserves the right to order the Contractor to immediately cease all activities on-site until the situation is resolved to the satisfaction of the Owner.

### 3.3 MITIGATION

- A. All operations, particularly those associated with excavation and backfilling, shall be planned and executed in such a manner as to minimize the amount of excavated and exposed fill or other foreign material that is washed or otherwise carried into waterways or wetlands. The water quality of waterways or wetlands shall not be degraded due to construction operations.
- B. It is the intent of these Specifications to prevent the unnecessary occurrence of sedimentation or siltation of the adjacent waterways, wetlands, and their various impoundments. In the event that sedimentation or siltation prevention measures used by the Contractor prove to be inadequate, as determined by the Engineer, the Contractor shall be required to adjust his operations to the extent necessary to prevent any such sedimentation or siltation from occurring.
- C. Contractor shall keep streams, wetlands, and other water crossings clear of mud, silt, debris, and other objectionable materials resulting from Contractor's construction operations.
- D. Contractor shall protect existing drainage structures from siltation. Contractor shall

remove accumulated silt from drainage structures at no additional cost to the Owner.

- E. Contractor shall maintain the flow capacity of river and stream channels to prevent unnatural flooding due to Contractor's operations.
- F. Contractor shall preserve existing natural drainage patterns and vegetative cover.
- G. Contractor shall use temporary vegetation, soil stabilization matting and mulching to protect areas exposed during construction. Contractor shall minimize the amount of bare earth exposed at any one time during construction, and he shall also minimize the length of time bare earth is exposed.
- H. Baled hay shall be placed to form temporary water stops, dams, diversions, dikes, berms and for other uses connected with water pollution control. Bales that become clogged to be effective shall be removed from the site and new bales provided as directed by the Engineer. Bales shall be replaced as often as necessary to provide effective sedimentation control.
- I. On sloping terrain, hay bales may be used to trap sediment until vegetation has become established.
- J. Install hay bale or gravel check dams at 50-foot intervals along the centerline of drainage ditches as shown on the Drawings and as directed by the Engineer until permanent surface treatments are installed and fully stabilized.
- K. Hay bales or other materials necessary for sedimentation and erosion control shall be placed and maintained along wetland and waterway boundaries and along street drains in roadways if sediment is to be left overnight or if there is rain during construction activities. All soil left overnight along roadways adjacent to waterways and wetlands shall be covered.
- L. Sediment-laden water that is being pumped from the trenches or excavations shall not be pumped directly into watercourses or wetlands. Sedimentation basins of hay bales, check dams, silt fence or other means acceptable to the Engineer shall be used for this purpose.
- M. Spoil resulting from trench excavation or grading shall be leveled or removed to permit free entry of water from adjacent land surfaces without excessive erosion or harmful ponding.
- N. No volume of fill additional to preconstruction conditions shall be left in areas subject to flooding.
- O. A stockpile of haybales and silt fence will be maintained at the project for use as needed for repair or reinforcement of the sedimentation controls until the area is stabilized.
- P. Silt fence and sedimentation barriers shall be maintained at no additional cost to the Owner as follows:

#### EROSION AND SEDIMENTATION CONTROL

02370-5

1. Inspect silt fences and sedimentation barriers immediately after each rainfall and at least daily during prolonged rainfall. Provide any required repairs immediately. Should the fabric on a fabric silt fence decompose or become ineffective prior to the end of the expected useful life, and the barrier still be necessary, replace the fabric promptly.
  2. Remove sediment deposits after each storm event as directed by the Owner. As a minimum, remove sediment when deposits reach approximately one-half the height of the barrier.
  3. Dispose of sediment deposits off-site, placed upland in a manner which will prevent its later erosion into the resource protection area, or in manner approved by the Owner.
  4. Maintain the fabric silt fence until all upslope soils are permanently stabilized by vegetation.
- P. Periodically inspect earthwork to detect any evidence of erosion and sedimentation and promptly apply corrective measures.
- Q. Erosion and sedimentation control measures shall be disposed of in accordance with all local, state and federal regulations following the completion of construction activities in a particular area.

END OF SECTION

## **SECTION 02700**

### **BASES AND PAVEMENTS**

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

##### **1.1 SUMMARY**

- A. This Section includes furnishing all labor, equipment, and materials, and performing all operations in connection with constructing base courses and pavements for roadways, drives, curbs and waterways and installing pavement markings, complete in place, in accordance with the Drawings and Specifications and as directed by the Engineer.

##### **1.2 RELATED DOCUMENTS**

- A. Drawings, general provisions of the Contract, General Conditions, Supplemental Conditions and Division 1 Specification Sections apply to this Section.
- B. The State of New Hampshire Department of Transportation (NHDOT) Standard Specifications for Road and Bridge Construction (hereinafter referred to as NHDOT Standard Specifications), latest edition.
  - 1. All references to Method of Measurement, Basis of Payment and Payment Items in the NHDOT Standard Specifications are hereby deleted. References made to particular sections or paragraphs in the NHDOT Standard Specifications shall include all related articles mentioned therein.

##### **1.3 SUBMITTALS**

- A. Submit in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Submit a statement of qualifications for the paving contractor. The information shall include the name of the paving contractor, key personnel resumes, equipment lists and list of prior experience.
- C. Submit certificates of compliance that the proposed materials to be used for the work comply with the Specifications.
- D. No paving shall be placed until submittals have been reviewed by the Engineer.

##### **1.4 QUALITY ASSURANCE**

- A. All work to be performed under this Contract is under the control of the Owner for all municipal roads and the NHDOT for all state roads.
- B. All permits required by the Owner and NHDOT shall be obtained and paid for by the

Contractor.

- C. The paving contractor completing the work shall have a minimum of 5 years experience in municipal and state roadway paving operations. The Owner reserves the right to reject paving contractors who, in the judgment of the Engineer, lacks the necessary experience or equipment to perform the work as specified, or who displays a lack of ability based on the actual performance of the work completed.
- D. The paving plant used by the Contractor for the preparation of the bituminous concrete shall be acceptable to the Engineer. The Engineer reserves the right to inspect the plant and the making of the material.

## **PART 2 - PRODUCTS**

### **2.1 PAVEMENT**

- A. Pavement shall meet the requirements of NHDOT Standard Specifications.
- B. Job mix formula for bituminous pavement materials shall be as follows:
  - 1. Temporary pavement material shall be binder course gradation (3/4") as specified in NHDOT Standard Specifications, Section 401, Table 2.
  - 2. Permanent base course pavement material shall be base course gradation (1 1/2") as specified in NHDOT Standard Specifications, Section 401, Table 2E.
  - 3. Leveling course material shall be as specified in NHDOT Standard Specifications, Section 411.
  - 4. Permanent wearing course pavement material shall be wearing course gradation (1/2") as specified in NHDOT Standard Specifications, Section 401, Table 2 unless otherwise approved by the Engineer.
  - 5. Bituminous curb material shall be as specified in NHDOT Standard Specifications, Section 609.
  - 6. Bituminous driveway material shall be wearing course gradation (1/2" or 3/8") as specified in NHDOT Standard Specifications, Section 401, Table 2.
  - 7. Bituminous waterway material shall be wearing course gradation (1/2" or 3/8") as specified in NHDOT Standard Specifications, Section 401, Table 2.

### **2.2 BASE COURSES**

- A. Aggregate base course material shall be as specified in Section 02300.
- B. Reclaimed stabilized base course material shall be as specified in NHDOT Standard Specifications, Section 306.



## 2.3 PAVEMENT MARKINGS

- A. Permanent Pavement Markings: Paints for permanent pavement markings shall be as specified in NHDOT Standard Specifications, Section 708. Color shall be as follows:
  - 1. Edge Strips: Reflectorized white conforming to NHDOT NH 4.11.
  - 2. Roadway Centerline: Reflectorized yellow conforming to NHDOT NH 4.12.
- B. Temporary Pavement Markings: Temporary pavement markings shall be raised plastic markings for centerline installation. Color shall be reflectorized yellow on two sides. Markings shall conform to NHDOT Standard Specifications.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. The Owner reserves the right to delete any paving items of work from the Contract without penalty.
- B. The Contractor shall replace all pavement, markings, curbs, waterways and drives which have been removed or damaged during construction operations. Pavement replacement shall include satisfactory repair by the Contractor of roadways, curbs, sidewalks, driveways and any other surface disturbed by his operations by the same materials as removed or as specified herein. Care shall be taken to minimize trench widths in paved areas.
- C. The Contractor shall place all bituminous pavement by machine method only unless otherwise permitted by the Engineer. The equipment for spreading and finishing shall be mechanical, self-powered pavers, capable of spreading and finishing the pavement true to the established line, grade, width and crown. The pavement shall be placed and compacted only at such times as to permit the proper checking by the Engineer. Paving boxes shall be of proper size to allow paving the excavated trenches.
- D. Hand methods of placing bituminous pavement will be permitted only for particular locations in the work where because of irregularity, inaccessibility or other unavoidable obstacles mechanical spreading and finishing cannot be performed.

### 3.2 BASE COURSES AND SUBGRADE

- A. After the subgrade has been shaped to line, grade, and cross section, it shall be thoroughly compacted. This operation shall include any required reshaping and wetting to obtain proper compaction. All soft or otherwise unsuitable material shall be removed and replaced with suitable material from excavation or borrow. The resulting area, and all low sections, holes, or depressions shall be brought to the required grade with approved material and thoroughly compacted. Refer to Section 02300 for compaction requirements and additional requirements for fine grading.

- B. Base courses shall be constructed to the depths and areas shown on the Drawings.
- C. Aggregate base courses shall be constructed in accordance with NHDOT Standard Specifications, Section 304, except as herein modified:
  - 1. Gravel and crushed gravel base courses shall be placed in 6-inch lifts and compacted to 95% maximum density unless otherwise directed by the Engineer. Refer to Section 02300 for additional compaction requirements.
  - 2. Crushed gravel shall be fine graded with a power grader or other approved equipment. Tolerances shall be within 1/2" or less.
  - 3. No pavement shall be placed until fine grading has been checked by the Engineer.
- D. Reclaimed stabilized base courses shall be constructed in accordance with NHDOT Standard Specifications, Section 306, except as herein modified:
  - 1. Excess reclaimed base course material shall become the property of the Owner unless otherwise directed by the Engineer. Contractor shall remove excess material from the work site and haul and stockpile material in a location to be determined by the Owner. Excess material not salvaged by the Owner, as determined by the Owner, shall become the property of the Contractor.
  - 2. All cobbles, stones and boulders 6-inch in diameter or greater that are exposed under the existing pavement shall be removed from the work area.
  - 3. No pavement shall be placed until fine grading has been checked by the Engineer.
- E. The Contractor shall regrade and recompact the base course for installation of permanent base and wearing course pavement in areas which are disturbed during construction, and in areas as directed by the Engineer.
- F. After the base course has been rolled to the required grade, any broken or irregular edges of the existing pavement shall be saw cut in straight lines leaving a sound vertical face 12-inches back from the edge of the trench or other excavations to accept placement of a 12-inch minimum overlap of bituminous base course pavement on undisturbed material.
- G. The edges of the existing pavement shall receive an application of a cut-back asphalt so that the new pavement material may be properly bonded to the existing.

### 3.3 BITUMINOUS PAVEMENT

- A. Bituminous base course and wearing course pavement shall be constructed in accordance with NHDOT Standard Specifications, Section 401 except as herein modified:
  - 1. Pavement shall only be placed when the underlying surface is dry, frost-free and

the surface temperature is above 50 degrees F, unless otherwise directed by the Engineer.

2. Pavement shall only be placed during daylight hours.
3. All existing iron grates, covers and valve boxes within the limits of pavement shall be adjusted by the Contractor prior to placing the wearing course of pavement
4. All catch basins shall be covered with acceptable cover before paver passes over grate.
5. Manholes and other castings shall be sprayed with kerosene or other product before the paver passes over casting. The casting shall be clean of asphalt at the completion of the paving.
6. The Contractor shall do the required handwork around catch basins to provide a downward slope to catch basin grates.
7. Compaction shall be completed by and 8-ton minimum static steel wheel roller. A smaller roller shall be used to smooth-out edges.

#### B. Temporary Pavement

1. Temporary pavement shall be placed in areas where test pits or exploratory excavations occur in paved areas, where the road is to be reconstructed by others and as directed by the Engineer.
2. Contractor shall place temporary pavement the full width of the excavation within the same week of the trench being backfilled unless otherwise directed by the Engineer.
3. Temporary pavement shall be repaired as necessary to maintain the surface of the pavement until replaced by the permanent pavement. If points of settlement or holes appear in the temporary pavement, the Contractor shall repair the same within 24 hours of notification by the Engineer.
4. After the specified time period for trench settlement has elapsed and when so directed by the Engineer, the Contractor shall remove and dispose of the temporary pavement, cut the trench edges and regrade the base course for installation of the permanent pavement.

### 3.4 CURBS AND WATERWAYS

- A. Curbs shall be replaced with the existing curbing if existing curbs have not been damaged, or with new curb sections of the same material, dimensions and alignment for those sections damaged during removal.
- B. Bituminous curbs shall be replaced as required and installed as indicated on the Drawings and directed by the Engineer.

C. Bituminous curbs shall be constructed in accordance with NHDOT Standard Specifications, Section 609, except as herein modified:

1. The bituminous curb shall be placed on the permanent base course pavement. The wearing course pavement shall be constructed after placement of the bituminous curbs.
2. Prior to placing the bituminous curb, the permanent base course pavement shall be cleaned and painted with a tack coat of bituminous material.
3. Bituminous curbs shall not be placed within 24 hours of last rainfall.
4. Bituminous curbs shall be placed by extruding curb paver and compacted to 95% maximum density.

D. Curbs shall conform to the grade of roadway and adjacent curb sections.

E. Areas behind curbs and sidewalks shall be graded smooth. Areas shall receive loam and seed or replacement of sidewalks as required.

F. The Contractor shall be responsible for damage to curbs until final completion.

G. Bituminous waterways shall be replaced as required and installed as indicated on the Drawings and directed by the Engineer. Waterways shall be placed in two 1-inch thick bituminous courses on a 12-inch compacted crushed gravel base unless otherwise indicated on the Drawings. Material shall be compacted by tamping or rolling. The Contractor shall be responsible for damage to the waterway until final completion.

### 3.5 PAVEMENT MARKINGS

A. Pavement markings shall be placed in accordance with NHDOT Standard Specifications, Section 632.

B. Pavement markings shall be placed where required by Owner on municipal roads and by NHDOT on state roads.

C. The Contractor shall repaint traffic lines where lines have been damaged due to construction operations. All painting repairs shall meet with the approval of the Owner or NHDOT as required.

D. Painted crosswalks and parking lines disturbed during the work shall be repainted to match preconstruction conditions.

E. Temporary pavement markers shall be installed on all pavement that will be unmarked for a period exceeding 48 hours, unless otherwise directed by the Engineer.

### 3.6 INFRA-RED HEATER TRENCH REPAIRS

A. Infra-Red heater trench repairs shall be performed by an experienced infra-red operator in the following general manner:

- B. Areas to be repaired shall be swept clean to remove all loose and foreign materials.
- C. An approved infra-red heater shall be positioned over the area to be repaired for a period of time required to soften the existing pavement to a depth of two or more inches. Oxidation of the pavement, caused by improper heating techniques, must be avoided. Unsuitable material must be discarded, if this condition occurs.
- D. The softened area shall be scarified and raked to a workable condition.
- E. Any necessary additional bituminous concrete mix must be obtained from a suitable infra-red heated storage unit required to keep asphalt mix at near constant temperature throughout the working day. Under no circumstances shall any asphalt mix to be used that measures a temperature of less than 200°F.
- F. After the paving mixture has been properly admixed and raked to grade, compaction shall be obtained by use of a steel wheeled roller of sufficient weight to establish a uniform density comparable to that of the adjacent surface within the working area. The finished patch shall be level with no depression retaining water on any of its surface.
- G. Edges of the rolled area shall be sealed with suitable asphalt emulsion, and sand spread over the entire area that has been patched.

### 3.7 FIELD QUALITY CONTROL

#### A. Thickness and Surface Tolerances:

- 1. Bituminous pavement courses shall be tested in-place for compliance with compacted thickness and surface tolerance requirements.
- 2. Contractor shall repair or remove and replace unacceptable pavement and retest as directed by the Engineer, all at no additional cost to the Owner.
- 3. Testing, tolerances and replacement shall be as specified in NHDOT Standard Specifications, Section 401.
- 4. In-place density tests shall be completed at Contractor's expense by a testing laboratory experienced and certified to complete the testing required.

#### B. Compaction: Refer to Section 02300

- C. Guarantee: During the guarantee period, the Contractor shall maintain the surfacing and shall promptly fill any depressions and holes that may occur so as to keep the surfacing in a safe and satisfactory condition for traffic. Fill material shall be in compliance with these Specifications. Contractor shall maintain surfacing at no additional cost to the Owner.

END OF SECTION

BASES AND PAVEMENTS

02700-7

## APPENDIX

12/26/2022

SA

SSD: 3/31/14, 7/30/75, 5/9/83, 12/5/84, 2/12/92, 10/19/93, 5/9/94, 1/26/95, 12/30/96, 02/24/97,  
12/08/08, 4/15/09, 01/01/12, 04/16/12, 03/24/15, 01/15/16, 02/21/16, 07/28/16, 04/21/17  
08/22/17, 12/24/18, 12/23/19, 04/08/20, 12/14/20, 12/28/21, 12/02/22

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January 22, 2024

## SPECIAL ATTENTION

### ASPHALT CEMENT ADJUSTMENT AND ASPHALT CEMENT ADJUSTMENT FOR EMULSION

Bid items involving asphalt concrete mixtures containing asphalt cement may be subject to a price adjustment. Only the asphalt portion of asphalt-rubber cement will be eligible for price adjustment. The adjustment will take effect when the monthly price for asphalt cement as furnished by the Department differs from the base price contained in the proposal. Affected Sections and formulas are detailed below.

The base price\* of asphalt cement for this Contract is \$ 662.50 per ton.

The monthly price\* of asphalt cement used to determine the Asphalt Cement Adjustment will be furnished by the Department and will be posted on the NHDOTweb site ([www.dot.nh.gov/about-nh-dot/divisions-bureaus-districts/highway-design/highway-standard-specifications/special](http://www.dot.nh.gov/about-nh-dot/divisions-bureaus-districts/highway-design/highway-standard-specifications/special)).

**\*Source:** The monthly price, applicable for the entire month, is developed from information in the *Asphalt Weekly Monitor*, a publication from Poten and Partners, Inc. The monthly price will be the average of the price range for Southern Maine/New Hampshire PG 64-28 asphalt binder, as published in the *Asphalt Weekly Monitor* on the dates shown in the following table. The base price is the latest available monthly price at the time the contract documents are prepared.

| 2024     |                   |        |                  |           |                    |
|----------|-------------------|--------|------------------|-----------|--------------------|
| Month    | Publication Date  | Month  | Publication Date | Month     | Publication Date   |
| January  | December 26, 2023 | May    | April 22, 2024   | September | August 26, 2024    |
| February | January 22, 2024  | June   | May 28, 2024     | October   | September 23, 2024 |
| March    | February 26, 2024 | July   | June 24, 2024    | November  | October 28, 2024   |
| April    | March 25, 2024    | August | July 22, 2024    | December  | November 25, 2024  |

The contract prices of bituminous materials will be paid under the respective items in the contract. The price adjustment, as provided herein, upwards or downwards, will be made concurrently as the work is accomplished as follows:

**Item 403. - Pavement (except items 403.4, 403.16, & 403.26) and Item 411. - Hot Bituminous Concrete Leveling Course and Plant Mix Surface Treatment**

The price adjustment will be based on the percent of virgin asphalt cement stated in the Approved Mix Design containing the maximum percentage of reclaimed asphalt pavement. In the event of breakdown or unforeseen circumstances other than weather, an Approved Virgin Mix Design may be used. The price adjustment will then be based on the total percent of virgin asphalt cement in that approved design.

A contract adjustment will be made under **Item 1010.2** based on; [monthly price minus the base price] X [Approved Mix Design percent of virgin asphalt cement] X [tons of pavement used].

12/26/2022

SA

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SSD: 3/31/14, 7/30/75, 5/9/83, 12/5/84, 2/12/92, 10/19/93, 5/9/94, 1/26/95, 12/30/96, 02/24/97,  
12/08/08, 4/15/09, 01/01/12, 04/16/12, 03/24/15, 01/15/16, 02/21/16, 07/28/16, 04/21/17  
08/22/17, 12/24/18, 12/23/19, 04/08/20, 12/14/20, 12/28/21, 12/02/22

#### Item 410.72 - Chip Seal Surface Treatment Rubber Polymerized

A contract adjustment will be made under Item 1010.2 based on; [monthly price minus the base price] X [asphalt factor] X [tons of AC used] where:

Assumptions:

- Asphalt factor equals 82%
- Tons of AC used equals the total number of gallons sprayed divided by 235

#### Item 419.1\_\_ - Bonded Wearing Course

A contract adjustment will be made under Item 1010.2 based on; [monthly price minus the base price] X [Total AC in the BWC process percent] X [tons of BWC paved] where:

Assumptions:

- Total AC in the BWC process equals 5%

#### Item 419.2\_\_ - AR Bonded Wearing Course

A contract adjustment will be made under Item 1010.2 based on; [monthly price minus the base price] X [Total AC in the AR BWC process percent] X [asphalt factor] X [tons of BWC paved] where:

Assumptions:

- Total AC in the BWC process equals 5%
- Asphalt factor equals 82%

#### Emulsified Asphalt Cement

[For Items 306.33, 405.\_\_, 410.\_\_ (excluding 410.22, 410.72 & 410.75 \_\_), 418.11 \_\_, 418.32, and 419.3]

A contract adjustment will be made under Item 1010.21 based on; [monthly price minus the base price] X [percent of residual asphalt cement] X [Tons of Emulsion used].

Assumptions:

- Quantities are assumed to be measured at 60° F
- Volume reduction between typical delivery temperature (+/- 140° F) and 60° F is 2%
- Adjustment payment assumes 62% Residual Asphalt for all grades
- 239 Gallons/Ton is the unit conversion at 60° F

|              |   |        |
|--------------|---|--------|
| Item 1010.2  | Asphalt Cement Adjustment <sup>1</sup>              | Dollar |
| Item 1010.21 | Asphalt Cement Adjustment for Emulsion <sup>1</sup> | Dollar |

When no item for Asphalt Cement Adjustment and/or Asphalt Cement Adjustment for Emulsion is included in the contract no adjustments will be made.

<sup>1</sup> Not a bid item



12/28/23

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SSD: 12/3/79, 4/10/80, 11/19/82, 5/9/83, 12/7/90, 12/20/96, 07/14/04, 09/01/05, 08/06/07, 01/07/09, 04/15/09, 11/30/09, 05/12/10, 02/17/11, 07/16/15, 11/02/15, 12/16/15, 01/20/16, 07/15/16, 08/22/17, 01/23/18, 09/13/18, 02/13/19, 04/24/19, 12/23/19, 04/08/20, 12/14/20, 07/16/21, 12/22/21, 12/20/22

January 23, 2024

## SPECIAL ATTENTION

### FUEL ADJUSTMENT

- (a) The shortage of all products in relation to the national and worldwide energy situation has made future costs of fuel unpredictable. For this reason, a price adjustment clause is being inserted in this contract to provide for either additional compensation to the Contractor or payment to the State, depending upon an increase or decrease in the price of fuel.
- (b) The fuel usage factors, which will be applied to the several items of the Contract shall be those set forth in Table 1.
- (c) Price adjustment will be based upon the quantity of fuel incorporated in the work as determined by the factors in Table 1.
- When the monthly sales price determined per paragraph (f) is more than 110% of the fixed base price set forth in paragraph (e), a contract adjustment will be made under Item 1010.15 based on: [monthly sales price less 110% of the fixed base price] multiplied by [item quantity eligible for payment during month] multiplied by [fuel factor].
  - When the monthly sales price determined per paragraph (f) is less than 90% of the fixed base price set forth in paragraph (e), a contract adjustment will be made under Item 1010.15 based on: [monthly sales price less 90% of the fixed base price] multiplied by [item quantity eligible for payment during month] multiplied by [fuel factor].
- (d) The Contractor warrants that its bid prices for this Contract include no allowances for any contingency to cover increased costs for which adjustment is provided herein.
- (e) The fixed base price of fuel will be \$ 3.2275 per gallon.
- This price is used solely to compute price adjustments. The fuel price will be the lower bulk retail price of **ultra low sulfur diesel fuel** for Boston as published by OPIS (Oil Price Information Service) in the Oil Price Daily, formerly known as the Journal of Commerce, and will include current Federal and State taxes.

- (f) The monthly sales price of fuel will be determined by the Department based on the following schedule:

| 2024     |                   |        |                  |           |                    |
|----------|-------------------|--------|------------------|-----------|--------------------|
| Month    | Publication Date  | Month  | Publication Date | Month     | Publication Date   |
| January  | December 26, 2023 | May    | April 22, 2024   | September | August 26, 2024    |
| February | January 22, 2024  | June   | May 28, 2024     | October   | September 23, 2024 |
| March    | February 26, 2024 | July   | June 24, 2024    | November  | October 28, 2024   |
| April    | March 25, 2024    | August | July 22, 2024    | December  | November 25, 2024  |

Monthly sales prices will be set in the same manner as indicated in paragraph (e).

- (g) When an adjustment is called for as provided in paragraph (c), the monthly sales price determined in paragraph (f) will be used for work accomplished in the following month.
- (h) No price adjustment will be allowed beyond the Project completion date unless there is a Department-approved extension of time. Price adjustments will be made on quantities adjusted as a result of the final audit.
- (i) The Department will not be responsible for computing or otherwise indicating price adjustments except to the prime contractor, which must make its own arrangements with its subcontractors.
- (j) When no item for Fuel Adjustment is included in the Contract no adjustments will be made.

Pay item and unit:

1010.15      Fuel Adjustment <sup>1</sup>      \$

<sup>1</sup> Not a bid item.

Table 1 - FUEL FACTORS

TABLE 1. FUEL FACTORS

| Item of Work                        | Item No.   | Units               | Fuel     |         |
|-------------------------------------|--|---------------------|----------|---------|
| <b>Excavation:</b>                  |  |                     |          |         |
| Earth                               | 203.1_.4_<br>203.50_.51_.52_<br>203.6_.7_<br>206.1_<br>207.1_<br>504.1 | gal/c.y.            | 0.26     |         |
| Rock                                | 203.2_<br>206.2_<br>207.2_<br>504.2                                    | gal/c.y.            | 0.34     |         |
| Other                               | 203.3_<br>206.3_<br>207.3_<br>583._<br>585._<br>586._<br>587.          | gal/c.y.            | 0.31     |         |
| <b>Bases:</b>                       |  |                     |          |         |
| Unprocessed                         | 209._<br>304.1_.2  | gal/c.y.            | 0.46     |         |
| Processed <sup>4</sup>              | 304.3_<br>304.4_.5_.6_<br>508.   | gal/c.y.            | 0.82     |         |
| <b>Bituminous Concrete</b>          |  |                     |          |         |
| Pavement <sup>2</sup>               | 403._<br>411.  | gal/ton             | 1.90     |         |
| <b>All Other Items:</b>             |  | gal/\$1,000 of work | 13.0     |         |
| <b>Excluded Items: <sup>3</sup></b> |  |                     |          |         |
| 210._                               | 510.41_  | 550.2_              | 565.7_   | 670.104 |
| 211._                               | 510.61_  | 560._               | 568._    | 692._   |
| 306.31_                             | 510.65_  | 561._               | 592._    | 693._   |
| 306.32_                             | 521.2_   | 563.1_              | 603.0001 | 697._   |
| 306.33_                             | 528._  | 563.2_              | 618._    | 698._   |
| 410._                               | 544._  | 563.3_              | 619._    | 699._   |
| 419.3                               | 548._  | 563.7_              | 624._    | 8_      |
| 510.31_                             | 550.1_   | 565.2_              | 645.7_   | 10_     |

<sup>2</sup> Item 403.4, 403.16, & 403.26 shall be calculated using the "All Other Items" category rate.

<sup>3</sup> Also excluded are all supplementary agreements, extra work and per specification items.

<sup>4</sup> Item 304.32 shall be calculated using the "All Other Items" category rate.