LONG CREEK WATERSHED MANAGEMENT DISTRICT
CITY OF SOUTH PORTLAND, MAINE

BIDDING AND CONTRACT REQUIREMENTS
AND SPECIFICATIONS

FOR

GORHAM ROAD LANDSCAPE & DRAINAGE IMPROVEMENTS
MAINE MALL ROAD DRAINAGE IMPROVEMENTS
MAINE MALL ROAD SANITARY SEWER REPLACEMENT

March 18, 2014

Prepared By:

Sebago Technics, Inc.
75 John Roberts Road, Suite 1A
South Portland, Maine  04106-6963

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Fax: 207-856-2206
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1. **RECEIPT OF BIDS**

Ms. Tamara Lee Pinard of the Long Creek Watershed Management District will receive sealed bids, endorsed on the outside of the envelope with the name of the bidder and project name at the Cumberland County Soil & Water Conservation District Office, at 35 Main Street, Suite 3, Windham, Maine, 04062, until 11:00 AM (prevailing time) on April 9, 2014 at which time the bids will be publicly opened and read.

2. **BID BOND:** A satisfactory Bid Bond executed by the Bidder and a Surety Company in the amount equal to five percent (5%) of the Bid shall be submitted with each bid. No bid may be withdrawn for at least 60 days after receipt of bids unless released by the OWNER.

3. **PROJECT NAMES:** Long Creek Watershed Management District – Gorham Road Landscape and Drainage Improvements, Maine Mall Road Drainage Improvements and City of South Portland - Maine Mall Road Sanitary Sewer Replacement.

4. **LOCATION:** Gorham Road, between Maine Mall Road & Western Avenue and Western Avenue between Gorham Road and I295; and Maine Mall Road, between Gorham Road and Western Avenue, South Portland, Maine.

5. **PROJECT DESCRIPTION**

The project consists of stormwater runoff improvements and sanitary sewer improvements at the above properties in South Portland, Maine. Work includes:

- **Gorham Road:** Removing asphalt medians, removing portions of existing turn lanes, median earthwork operations, constructing under drained soil filters, bioretention filters and concrete sumps, installation of median landscaping including canopy trees, ornamental trees and perennial vegetation, site restoration, and fine Grading and installation of loam and seed.

- **Maine Mall Road Drainage:** Sawcut and removing asphalt, sidewalk and existing structures, earthwork, construction of bioretention filters, esplanade box filters and propriety water treatment devices, drainage structures, sidewalk culverts, culverts, removal and replacement of guard rails, construction of curb, pavement and sidewalk restoration, installation of perennial filter plantings and canopy trees, site restoration, and fine grading and installation of loam and seed.

- **Maine Mall Road Sewer:** Bypass pumping, sawcut and removing asphalt, curbing, existing sanitary piping and structures, earthwork, construction of gravity sewer system, reconnection of existing gravity services and force mains, resetting of existing curbs, pavement restoration, site restoration, and fine grading, and loam and seed.

6. **PLANS AND SPECIFICATIONS**

The specific work required is shown on the Plans entitled “Long Creek Watershed Management District Gorham Road Landscape and Drainage Improvements”, “Long Creek Watershed Management District Maine Mall Road Drainage Improvements” “City of South Portland Maine Mall Road Sanitary Sewer Replacement”, all dated March 2014, prepared by Sebago Technics, Inc. Bidders must obtain sets of plans and specifications upon payment in advance of $150.00 for each set. Such payment shall not be refunded. Plans and specifications will be available at 1:00 P.M. on March 18, 2014 at the offices of Sebago Technics, Inc., 75 John Roberts Road, South Portland, ME. Tel. (207) 200-2100. Partial sets will not be issued. Bids will only be accepted from entities that have purchased a set of plans and specifications. Bidders requesting that sets of plans and specifications be mailed shall include an additional non-refundable $15.00 for each set for shipping and handling.

7. **BIDDER QUALIFICATIONS**

Refer to Instructions to Bidders for information regarding qualifications of bidders.

8. **CONTRACT TIME**

The number of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the Contract Time) are set forth in the Bid Form and the Agreement.

9. **ACCEPTANCE OF BID**

The Owner reserves the right to reject any and all bids, to waive any and all informalities and to negotiate contract terms with the successful Bidder, and the right to disregard all non-conforming, non-responsive or conditional Bids. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

14. **MANDATORY PRE-BID CONFERENCE**

A mandatory pre-bid conference will be held at 10:00 A.M. on Friday March 21, 2014 at the offices of Sebago Technics, Inc., 75 John Roberts Road, South Portland. Attendance at the Pre-Bid is Mandatory.
SECTION 00100

INSTRUCTIONS TO BIDDERS

1. DEFINED TERMS

Terms used in these Instructions to Bidders and accompanying Bid Form, which are defined in the Standard General Conditions of the Construction Contract (General Conditions), have the meanings assigned to them in the General Conditions. The term “Bidder” means the individual or entity submits a Bid directly to Owner, as distinct from a sub-bidder, who submits a bid to a Bidder. The term “Successful Bidder” means the lowest, qualified, responsible and responsive Bidder to whom the Owner (on the basis of Owner’s evaluation as hereinafter provided) makes an award. The term “Bidding Documents” includes the Advertisement or Invitation to Bid, Instructions to Bidders and the Bid Form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids). The term “Owner” shall mean the Long Creek Watershed Management District and/or the City of South Portland. The term “Engineer” shall mean Sebago Technics, Inc.

2. COPIES OF BIDDING DOCUMENTS

2.1. Complete sets of Bidding Documents may be obtained at the offices of Sebago Technics, Inc., 75 John Roberts Road, South Portland, ME. Tel. (207) 200-2100.

2.2. Complete sets of Bidding Documents must be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.3. Owner and Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

3. MINORITY AND WOMAN BUSINESS ENTERPRISES REQUIREMENTS

Each Bidder shall take special notice of the Guidance for use of Minority and Women’s Business Enterprises in sub agreements. Failure to complete the requirements of this program may result in finding that the Bidder is non-responsive and therefore, not entitled to award of this contract. Complete requirements are detailed in the Bid Documents.

4. NONDISCRIMINATION IN EMPLOYMENT AND LABOR STANDARDS

Bidders and contractors shall abide by the following:

a. Contractors and subcontractors will not discriminate in employment practices.
b. Bidders must submit with their initial bid a signed Compliance Statement.
c. Bidders must, if requested, submit a compliance report.
d. Successful Bidders must, if requested, submit a list of all subcontractors and a statement that their practices and policies are in conformity with Executive Order No. 11246.
e. Successful Bidders must comply in all respects with the contract provisions regarding nondiscrimination.

Additional requirements for bidders and contractors under this Order are explained in the Information for Bidders.
5. **FEDERAL REQUIREMENTS**


The Contractor must comply with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), and Executive Order 11738. Contractors are urged to become familiar with the requirements of these regulations.

6. **QUALIFICATIONS OF BIDDERS**

To demonstrate qualifications to perform the work, each Bidder must be prepared to submit within five days of Owner's request written evidence, such as financial data, previous experience, present commitments and other such data as may be called for below (or in the Supplementary Instructions). Each Bid must contain evidence of Bidder’s qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract.

7. **EXAMINATION OF CONTRACT DOCUMENTS AND SITE**

7.1. It is the responsibility of each Bidder before submitting a Bid to: (a) examine the Contract Documents thoroughly; (b) visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work; (c) consider federal, state and local laws and regulations that may affect cost, progress, performance or furnishing of the Work; (d) study and carefully correlate bidder’s observations with the Contract Documents; and (e) notify Engineer of all conflicts, errors or discrepancies in the Contract Documents.

7.2. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, Underground Facilities and other physical conditions, and possible changes in the Contract Documents due to differing conditions appear in Paragraphs 4.02 and 4.03 of the General Conditions.

7.3. Before submitting a Bid, each Bidder will, at Bidder’s own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

7.4. Owner will provide each Bidder access to the site at the Mandatory Pre Bid Conference, to conduct such explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations. Damage as a result of such tests will be the responsibility of the Bidder who performed the test.

7.5. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4 of the General Conditions, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract
INSTRUCTIONS TO BIDDERS

Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Document, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

8. **INTERPRETATIONS AND ADDENDA**

8.1. All questions about the meaning or intent of the Contract Documents are to be directed to the Owner. Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Owner as having received Bidding Documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

8.2. Addenda may also be issued to modify the Bidding Documents as deemed advisable by Owner. Addenda shall be issued no later than three (3) days prior to the date fixed for opening of bids. Failure of any Bidder to receive any such addenda shall not relieve the Bidder from the obligation to address the addenda under their Bid as submitted. All addenda shall become part of the Contract Documents. Bid form shall indicate receipt of Addenda per section 15.6.

9. **BID SECURITY**

9.1. Each Bid must be accompanied by Bid security made payable to Owner in an amount of five percent of the Bidder’s maximum Bid price and a Bid Bond issued by a surety meeting the requirement of Paragraph 5.01 of the General Conditions.

9.2. The Bid security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required contract security, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Agreement and furnish the required contract security within fifteen days after the Notice of Award, Owner may annul the Notice of Award and the Bid Bond of that Bidder will be forfeited. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh day after the Effective Date of the Agreement or the twenty-first (21st) day after the Bid opening, where upon Bid Bond furnished by such Bidders will be returned. Bid security with Bids which are not competitive will be returned within seven (7) days after the Bid opening.

10. **CONTRACT TIME**

The numbers of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the Contract Time) are set forth in the Bid Form and the Agreement.

12. **LIQUIDATED DAMAGES**

Provisions for liquidated damages, if any, are set forth in the Agreement.

13. **SUBSTITUTE OR “OR EQUAL” ITEMS**

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or “or equal” items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or “or equal” item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Owner until after the Effective Date of the Agreement. The procedure for submission of any such application
by Contractor and consideration by Owner is set forth in Paragraphs 6.05 of the General Conditions and may be supplemented in the General Requirements.

14. SUBCONTRACTORS, SUPPLIERS, AND OTHERS

14.1 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers and other persons and organizations (including those who are to furnish the principal items of material and equipment) to be submitted to Owner in advance of the specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall submit to Owner a list of all such Subcontractors, Suppliers and other persons and organizations proposed for those portions of the Work for which such identification is required with bid. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person or organization if requested by Owner. If Owner after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, other person or organization, either may before the notice of Award is given request the apparent Successful Bidder to submit an acceptable substitute in which case the apparent Successful Bidder shall submit an acceptable substitute, that Bidder’s Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution and Owner may consider such price adjustment in evaluating Bids and making the contract award.

If apparent Successful Bidder declines to make any such substitution, Owner may award the contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers and other persons and organizations. The declining to make requested substitutions will not constitute grounds for sacrificing the Bid security of any Bidder. Any Subcontractor, Supplier, other person or organization listed and to whom Owner does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Superintendent subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.

14.2 In contracts where the Contract price is on the basis of Cost-of-the-Work-Lump-Sum, the apparent Successful Bidder, prior to the Notice of Award, shall identify in writing to Owner those portions of the Work that such Bidder proposes to subcontract and after the Notice of Award may only subcontract other portions of the Work with Owner’s written consent.

14.3 No Contractor shall be required to employ any subcontractor, Supplier, other person or organization against whom Contractor or Owner has reasonable objection.

14.4 Materials and equipment purchased for permanent installation in this Project are exempt from the State of Maine Sales and Use tax and from all Federal Excise taxes. Each Bidder shall take this exception into account in calculating his Bid price for the work.

15. BID FORM

15.1 The Bid Form is included with the Bidding Documents; additional copies may be obtained from Engineer.

15.2 All blanks on the Bid Form must be completed in ink or by typewriter. The bid price of each item on the form must be stated in words and numerals: in case of conflict, words will take precedence.

15.3 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal.
must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.

15.4 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

15.5 All names must be typed or printed below the signature.

15.6 The Bid shall contain an acknowledgement of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).

15.7 The address and telephone number for communications regarding the Bid must be shown.

16. SUBMISSIONS OF BIDS

16.1 Bids shall be submitted at the time and place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque sealed envelope, marked with the Project name (and, if applicable, the designated portion of the Project for which the Bid is submitted) and name and address of the Bidder and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation “BID ENCLOSED” on the face of it.

17. MODIFICATION AND WITHDRAWAL OF BIDS

17.1 Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

17.2 If, within twenty-four hours after Bids are opened, any Bidder files a duly signed, written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid and the Bid security will be returned. Thereafter, that Bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

18. OPENING OF BIDS

Bids will be opened publicly. An abstract of the amounts of the base Bids and major alternates (if any) will be made available to Bidders after the opening of the Bids.

19. BIDS TO REMAIN SUBJECT TO ACCEPTANCE

All Bids will remain subject to acceptance for forty-five days after the day of Bid opening, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to that date.

20. AWARD OF CONTRACT

20.1 Owner reserves the right to reject any and all Bids, to waive any and all informalities not involving price, time or changes in the Work and to negotiate contract terms with the Successful Bidder, and the right to disregard all non-conforming, non-responsive, unbalanced or conditional Bids. Also, Owner reserves the right to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. Discrepancies in the
multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

20.2 In evaluating Bids, Owner will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form prior to the Notice of Award.

20.3 Owner may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions. Owner also may consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such date is required to be submitted prior to the Notice of Award.

20.4 Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of Bidders, proposed Subcontractors, Suppliers and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to Owner’s satisfaction within the prescribed time.

20.5 If the contract is to be awarded it will be awarded to the lowest qualified, responsible and responsive Bidder, whose evaluation by Owner indicates to Owner that the award will be in the best interests of the Project and the Public.

20.6 If the contract is to be awarded, Owner will give the Successful Bidder a Notice of Award within thirty (30) days after the day of the Bid opening.

21. CONTRACT SECURITY

Paragraph 5.01 of the General Conditions and the Supplementary Conditions set forth Owner’s requirements as to performance and payment Bonds. When the successful Bidder delivers the executed Agreement to Owner, it must be accompanied by the required performance and payment bonds. The Performance and Payment Bonds shall be for 100% of the contract price.

22. SIGNING OF AGREEMENT

When Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within ten days thereafter Contractor shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner with the required Bonds. Within ten days thereafter Owner shall deliver one fully signed counterpart to Contractor. Each counterpart is to be accompanied by a complete set of the Drawings with appropriate identification.

23. RETAINAGE

Provisions concerning retainage and Contractors’ rights to deposit securities in lieu of retainage are set forth in the Agreement.
24. **INSURANCE**

Successful Bidder must obtain insurance as outlined in Section 5.04 of the General Conditions and in any modifications contained within the Supplementary Conditions.
SECTION 310

BID FORM

LONG CREEK WATERSHED MANAGEMENT DISTRICT/CITY OF SOUTH PORTLAND

GORHAM ROAD LANDSCAPE & DRAINAGE IMPROVEMENTS

MAINE MALL ROAD DRAINAGE IMPROVEMENTS

MAINE MALL ROAD SANITARY SEWER REPLACEMENT

Proposal of ________________________________________________________________

Name

Address

The name and address shown on the above lines shall be the official name and address of the person, partnership or corporation submitting this bid and shall agree with the "Signature of Bidder" in the case of an individual, the "Name of Firm or Partnership" in the case of a firm or partnership, or the "Name of Bidder" in the case of a corporation.

TO: Ms. Tamara Lee Pinard
    Long Creek Watershed Management District
    c/o Cumberland County Soil & Water Conservation District
    35 Main Street, Suite 3
    Windham, ME 04062
    Tel: (207) 892-4700

Dear Ms. Pinard:

The undersigned, having carefully examined the Site of the Work, the Project Manual titled “Project Manual Bidding Requirements and Technical Specifications”, dated March 2014 including all Addenda issued, the Supplemental Specifications, Special Provisions, Contract Agreement and Contract Bonds contained herein for the Long Creek Watershed Management District’s Gorham Road Landscape and Drainage Improvements, Maine Mall Road Drainage Improvements and City of South Portland’s Maine Mall Sanitary Sewer Replacement, do(es) hereby propose and offer to enter into a contract to supply all the materials, tools, equipment and labor required to perform and construct the whole of the Work in strict accordance with the terms and conditions of this contract at the unit prices stated in the following “Schedule of Items” submitted by the undersigned. Terms used in this Agreement which are defined in the Standard General Conditions shall be as defined therein.

This Proposal may be accepted by the Long Creek Watershed Management District at any time within forty five (45) calendar days after opening of the bids.

(Fill out prices in ink, in writing and in figures; in case of a discrepancy between prices in writing and prices in figures, the writing shall govern. In case of discrepancy between total of items and total of bid amount stated, total of items shall govern. Use the pages in this document when submitting proposal and submit contract document intact.)
The pay items with quantities marked with an asterisk (*) on the bid sheets are for quantities that are indeterminate and for work not anticipated at time of bid. These items are part of the Contract Proposal and will also be used should any extra work be necessary. Actual quantities will be measured in the field or calculated from the contract drawings.

The unit bid prices will be used to calculate payment amounts regardless of final quantities.

The undersigned also agrees as follows:

FIRST: To do any extra work, not covered by the above schedule of items, which may be ordered, and to accept as full compensation therefore such prices as may be agreed upon in writing by the Engineer and the Contractor; or in case no agreement is made, to accept as full compensation the amount determined upon a "Force Account Work" basis as provided in the M.D.O.T. Standard Specifications, Revision of December 2002 and attached hereto as Exhibit A and hereby incorporated into this Bid Form.

SECOND: To begin work on the date specified in the Engineer's "Notice to Commence Work" and to prosecute said Work in such a manner as to complete it prior to **October 31, 2014**, or within the time limits given in the Special Provisions. Further, that monies will be deducted as liquidated damages at the rate specified in the Standard Form of Agreement for each day that the Work shall remain uncompleted after the time herein specified for completion of the Work.

THIRD: That this offer is to continue open to acceptance until the formal contract is executed by the Successful Bidder of this Work, and the Long Creek Watershed Management District may at any time without notice accept this proposal whether any other proposal has previously been accepted or not. Provided, however, that the Long Creek Watershed Management District will accept, in writing, one of the proposals made, or reject all proposals made, within forty five (45) calendar days after the date of opening of the proposals.

The undersigned as Bidder, declares that the only persons or parties interested in this Proposal are those named herein; that the Bidder is not financially interested in, or otherwise affiliated in a business way with any other Bidder on this contract; and that this Proposal is made without collusion with any other person, firm or corporation.

The undersigned declares that any person(s) employed by the Long Creek Watershed Management District, who has direct or indirect personal or financial interest in this proposal or in any portion of the profits which may be derived therefrom, has been identified and the interest disclosed by separate attachment. (Please include in your disclosure any interest which you know of. An example of a direct interest would be a Long Creek Watershed Management District employee who would be paid to perform services under this proposal. An example of an indirect interest would be a Long Creek Watershed Management District employee who is related to any officers, employees, principal or shareholders of your firm or you.) If in doubt as to status or interest, please disclose to the extent known.

Respectfully submitted this _____________ day of _______________________, 2014

IF AN INDIVIDUAL, SIGN HERE

Signature of Bidder________________________________________

Address__________________________________________________

(Signatures for a Firm, Partnership or Corporation on next page.)
BID FORM

BID FORM (continued)

IF A FIRM OR PARTNERSHIP, SIGN HERE

Signature of Bidder

Name of Firm or Partnership

Business Address

Telephone Number          Fax Number

Soc. Sec. No. or Tax I.D. Number

Names and Addresses of Members of Firm or Partnership:


IF A CORPORATION, SIGN HERE

Name of Bidder

Authorized Signature  
(Name)           (Title)

Business Address

Telephone Number          Fax Number

Soc. Sec. No. or Tax I.D. Number

Incorporated under the Laws of the State of

Names and Addresses of Officers of the Corporation:

President

Secretary

Treasurer               ss

Before me, personally appeared               and acknowledged that the signature to the preceding bid is his/her signature in his/her official capacity.

Date: _________________________________

_______________________________________
Notary Public - Signature and Seal
ALL CORPORATIONS MUST SIGN THIS FORM
AND SUBMIT WITH THE BID FORM

(Insert copy of that part of the records of the corporation wherein authority is given to the officer of that
corporation to sign this bid on behalf of the corporation.)

___________________________________________

(date)

The above is a true copy of the records of the
Corporation, which records are in my legal custody.

Officer having custody of the records

___________________________________________  ss

Before me appeared, __________________________________________________________

_________________________________________ of the ________________________________ Corporation, and

made oath that the above statement is true.

___________________________________________

Notary Public - Signature and Seal
NOTICE

(This Must Be Filled Out)

The full names and residences of all persons interested in this bid as principals are as follows: (In case of Corporation, include and identify President, Treasurer, Manager)

____________________________________________________________________  __________________________________________________________________

____________________________________________________________________  __________________________________________________________________

____________________________________________________________________  __________________________________________________________________

____________________________________________________________________  __________________________________________________________________
ALL CONTRACTORS SHALL FILL IN THE FOLLOWING INFORMATION
BEFORE SUBMITTING BID

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### BID FORM

**PROJECT A**

GORHAM ROAD DRAINAGE & LANDSCAPING IMPROVEMENT PROJECT  
MAINE MALL ROAD to WESTERN AVENUE  
LONG CREEK WATERSHED MANAGEMENT DISTRICT  
SOUTH PORTLAND, MAINE

**3/18/2014**

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BID FORM

PROJECT A
GORHAM ROAD DRAINAGE & LANDSCAPING IMPROVEMENT PROJECT
MAINE MALL ROAD to WESTERN AVENUE
LONG CREEK WATERSHED MANAGEMENT DISTRICT
SOUTH PORTLAND, MAINE

3/18/2014

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TOTAL COST

BID ALTERNATE 1: DEDUCTION - CONSTRUCTION OF 30" NYLOPLAST STRUCTURE WITH GRADING FROM PROPOSED MEDIAN CROSS SECTION AND STABILIZATION WITH SEED AND MULCH. DELETION OF RTP-2 INCLUDING UNDER DRAINED SOIL FILTER, UNDER DRAIN PIPING AND ASSOCIATED ESTABLISHMENT PERIOD ALLOWANCE.

BID ALTERNATE 2: DEDUCTION - CONSTRUCTION OF 30" NYLOPLAST STRUCTURE WITH GRADING FROM PROPOSED MEDIAN CROSS SECTION AND STABILIZATION WITH SEED AND MULCH. DELETION OF RTP-5 INCLUDING UNDER DRAINED SOIL FILTER, UNDER DRAIN PIPING AND ASSOCIATED ESTABLISHMENT PERIOD ALLOWANCE.

BID ALTERNATE 1: DEDUCTION - CONSTRUCTION OF 30" NYLOPLAST STRUCTURE WITH GRADING FROM PROPOSED MEDIAN CROSS SECTION AND STABILIZATION WITH SEED AND MULCH. DELETION OF RTP-6 INCLUDING UNDER DRAINED SOIL FILTER, UNDER DRAIN PIPING AND ASSOCIATED ESTABLISHMENT PERIOD ALLOWANCE.
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TOTAL AMOUNT OF BID ALTERNATE 4, WRITTEN AND IN FIGURES BASED ON ESTIMATE OF QUANTITIES.

TOTAL COST
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TOTAL AMOUNT OF BASE BID, WRITTEN AND IN FIGURES BASED ON ESTIMATE OF QUANTITIES.
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<td>1.00</td>
<td>Esplanade Box Filter, EBF-4</td>
<td></td>
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</tr>
<tr>
<td>12</td>
<td>604.4105</td>
<td>1.00</td>
<td>Esplanade Box Filter, EBF-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bid Item</td>
<td>Spec. No.</td>
<td>Pay Item</td>
<td>Quantity</td>
<td>Item with Unit Bid Price</td>
<td>Written in Words</td>
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<tr>
<td>13</td>
<td>604.4106</td>
<td>LS</td>
<td>1.00</td>
<td>Esplanade Box Filter, EBF-6</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>14</td>
<td>604.4107</td>
<td>LS</td>
<td>1.00</td>
<td>Esplanade Box Filter, EBF-7</td>
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</tr>
<tr>
<td>15</td>
<td>604.4108</td>
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<td>1.00</td>
<td>Esplanade Box Filter, EBF-8</td>
<td>Per Linear Foot</td>
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<tr>
<td>16</td>
<td>604.4109</td>
<td>LS</td>
<td>1.00</td>
<td>Esplanade Box Filter, EBF-9</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>17</td>
<td>604.4110</td>
<td>LS</td>
<td>1.00</td>
<td>Esplanade Box Filter, EBF-10</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>18</td>
<td>621.273</td>
<td>EA</td>
<td>4.00</td>
<td>Large Deciduous Tree (2 1/2&quot; cal.), Group A</td>
<td>Per Each</td>
</tr>
<tr>
<td>19</td>
<td>621.712</td>
<td>EA</td>
<td>647.00</td>
<td>Herbaceous Perennial (No. 1 Cont.) Group A</td>
<td>Per Each</td>
</tr>
<tr>
<td>20</td>
<td>621.713</td>
<td>EA</td>
<td>200.00</td>
<td>Herbaceous Perennial (4&quot; Cell) Group B</td>
<td>Per Each</td>
</tr>
<tr>
<td>21</td>
<td>621.80</td>
<td>LS</td>
<td>1.00</td>
<td>Establishment Period</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>22</td>
<td>629.05</td>
<td>HR</td>
<td>10*</td>
<td>Hand Labor, Straight Time</td>
<td>Per Hour</td>
</tr>
<tr>
<td>23</td>
<td>629.06</td>
<td>HR</td>
<td>10*</td>
<td>Mason, Straight Time</td>
<td>Per Linear Foot</td>
</tr>
<tr>
<td>24</td>
<td>631.105</td>
<td>HR</td>
<td>10*</td>
<td>Air Tool and Compressor</td>
<td>Per Hour</td>
</tr>
<tr>
<td>Bid Item</td>
<td>Spec. No. Pay Item</td>
<td>Quantity</td>
<td>Item with Unit Bid Price</td>
<td>Written in Words</td>
<td>Unit Price</td>
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<td></td>
<td></td>
<td></td>
<td>All Purpose or Heavy Duty Excavator (including operator)</td>
<td>@</td>
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<td></td>
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<td></td>
<td>10*</td>
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<td></td>
<td></td>
<td></td>
<td>Per Hour</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>631.121</td>
<td></td>
<td>Bulldozer (including operator)</td>
<td>@</td>
<td></td>
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<td></td>
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<td>10*</td>
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<td></td>
<td></td>
<td></td>
<td>Per Hour</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>631.13</td>
<td></td>
<td>Truck- Large or Small (including operator)</td>
<td>@</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10*</td>
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<td></td>
<td></td>
<td></td>
<td>Per Hour</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>631.173</td>
<td></td>
<td>Front End Loader (including operator)</td>
<td>@</td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>10*</td>
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<td></td>
<td></td>
<td>Per Hour</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>631.22</td>
<td></td>
<td>Foreman, Straight Time</td>
<td>@</td>
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<td></td>
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<td></td>
<td>Per Hour</td>
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<tr>
<td>29</td>
<td>631.36</td>
<td></td>
<td>Flaggers</td>
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<td>1.00</td>
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<td></td>
<td></td>
<td></td>
<td>Lump Sum</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>652.38</td>
<td></td>
<td>Work Zone Traffic Control</td>
<td>@</td>
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<td></td>
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<td>1.00</td>
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<td></td>
<td></td>
<td>Lump Sum</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>652.39</td>
<td></td>
<td>Temporary Soil Erosion and Water Pollution Control</td>
<td>@</td>
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<td></td>
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<td></td>
<td></td>
<td>1.00</td>
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<td></td>
<td></td>
<td>Lump Sum</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>656.75</td>
<td></td>
<td>Mobilization</td>
<td>@</td>
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<td></td>
<td>1.00</td>
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<td></td>
<td>Lump Sum</td>
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</tbody>
</table>

TOTAL AMOUNT OF BASE BID, WRITTEN AND IN FIGURES BASED ON ESTIMATE OF QUANTITIES.

<table>
<thead>
<tr>
<th>TOTAL COST</th>
</tr>
</thead>
</table>

00310-19
SECTION 310A

EXHIBIT A – MDOT FORCE ACCOUNT WORK

109.7.5 Force Account Work Compensation for Force Account Work will be computed according to this Section 109.7.5.

A. Labor The Contractor will receive the actual hourly wages paid to Workers actually engaged in the changed Work and the foreman in direct charge of the changed Work as determined from certified payrolls, plus 90 percent of the sum thereof for all fringe benefits, payroll taxes, overhead, and profit.

B. Materials For Materials incorporated in the permanent Work, the Contractor will receive the Actual Cost of Materials including freight and Delivery charges (but excluding any sale or use tax) plus a single 15 percent markup. For all Materials not incorporated in the permanent Work, the Contractor will receive the difference of actual value of such Material at the time of its use less the fair salvage value of Material when released, plus 15 percent of said difference. There shall be no markup on markups.

C. Equipment For all authorized usage of power-operated machinery, trucks, or other Equipment, the Contractor will receive the rental rates for the actual time to the nearest ¼ hour that such Equipment is in operation on the Work. Time spent moving Equipment within the Project Limits and any approved idle time may be measured for payment when authorized. Time spent servicing, maintaining, and changing attachments will not be paid for. The rental rates shall include the cost of all fuel oil, lubrication, supplies, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, small tools, and all other Incidents.

Equipment leased by the Contractor for Force Account Work and actually used on the Project, the Department will pay for the actual Invoice amount, plus 10% for administrative costs. The maximum Hourly Equipment rental rates (R) will be determined using the most current Blue Book rates and the following formula:

\[ R = A \times B \times E + C + D \]

Where:
- A = Blue Book monthly rate divided by 176
- B = Blue Book regional adjustment factor for Maine
- C = Blue Book estimated operating costs per hour
- D = Operator's hourly payroll rate plus 90 percent
- E = Factor from the Rate Adjustment Table for the year the machine was made

When the Contractor's Equipment is ordered to be available for Force Account Work, but is idle for reasons not the fault of the Contractor, standby time will be paid at 70% of the hourly Equipment rental rate excluding all operating costs.

For each piece of Equipment, the Contractor shall provide the following information: the manufacturer's name, Equipment type, year of manufacture, model number, type of fuel used, horsepower rating, attachments required, together with its size or capacity and any further information necessary to ascertain the proper rate. The Contractor shall also provide a photocopy of the appropriate pages from the Blue Book that were used to arrive at the rates and prepare a chart that fully shows all the details of the Equipment costs.

Unless otherwise specified, manufacturer's ratings and manufacturer-approved modifications will be used to classify Equipment for the determination of applicable rental rates. A unit of at least the minimum rating recommended by the manufacturer shall power equipment that has no direct power unit.
If the Department specifies Equipment not listed in the above publication, the Department will establish a suitable rate for such Equipment. The Contractor may furnish cost data to assist the Department in the establishment of such rental rate.

D. Superintendence No part of the salary or expense of anyone connected with the Contractor above the grade of foreman or having general supervision of the Work will be included in the labor items as specified above, except when the Contractor’s entire on-site Workforce is occupied with Force Account Work, in which case, the salaries of the Superintendent may be included in the labor item specified above when the nature of the Work is such that their services are required, as determined by the Department.

E. Documentation Requirements All Statements shall be accompanied and supported by Receipted Invoices for all Materials used and transportation charges. If Materials used on the Force Account Work are not specifically purchased for such Work but are taken from the Contractor's stock, then instead of Invoices, the Statements shall contain or be accompanied by an affidavit of the Contractor certifying that such Materials were taken from stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the Actual Cost to the Contractor, excluding storage costs.

No payment will be made for Work performed on a Force Account basis until the Contractor has furnished duplicate itemized Statements of the cost of such Force Account Work detailed to the following:

1) Name, classification, date, daily hours, total hours, rate, and amount for each foreman and laborer.
2) Designation, dates, daily hours, total hours, rental rate, and amount for each unit of Equipment.
3) Quantities of Materials, prices, and amounts.
4) Transportation charges on Materials.
SECTION 00405

EXPERIENCE AND QUALIFICATIONS STATEMENT

All questions must be answered with clear and comprehensive data; if necessary, add additional pages. This statement must be notarized.

1. Name of Bidder and Contact Person(s) including the Project Manager:

2. Permanent Main Office address, telephone, fax, email:

3. Organizational Structure:

4. Please provide the year the Contractor (and note any Predecessor Entities or Related Entities) were first organized.

5. Please list any Predecessor Entities below (or on attached sheets if necessary).

6. Please list any Related Entities below (or on attached sheets if necessary).

7. Where incorporated.

8. How many years have you been engaged in the contracting business under your present firm name? Also state names and dates of previous firm names, if any.

9. Most Recently Completed Contracts. Please provide the following information regarding the last six contracts completed by the Contractor. Please list in reverse chronological order (most recently completed project first, next most recently completed project, etc). [Please feel free to provide this information on attached sheets in and other format as long as it contains the information requested].
EXPERIENCE AND QUALIFICATIONS STATEMENT

<table>
<thead>
<tr>
<th>Contract Amount</th>
<th>Project Type and Location</th>
<th>Month/Year Completed</th>
<th>Name, Address, Contact Person and Telephone Number of Owner</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

10. Please state other work of a similar nature to that stated in the Bid Proposal, including references that will assist the Owner to judge experience, skill and business standing:

<table>
<thead>
<tr>
<th>Contract Amount</th>
<th>Project Type and Location</th>
<th>Month/Year Completed</th>
<th>Name, Address, Contact Person and Telephone Number of Owner</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

11. Contracts in Progress. Please provide the following information regarding all contracts currently in progress, in descending order of contract amount. [Please feel free to provide this information on attached sheets in another format as long as it contains all the information requested.]
12. **Liquidated Damages:**

(a) Within the last five years has the Contractor (or any Predecessor Entities or Related Entities) had liquidated damages assessed against it?

YES _____  NO____

(b) Within the last five years has the Contractor (or any Predecessor Entities or Related Entities) had liquidated damages accrue which were not assessed by the Owner?

YES _____  NO____

If YES, to (a) or (b) above please provide full details on attached sheets including the per diem amount of liquidated damages, the original contract time, and the number of days for which liquidated damages were accrued and/or assessed. Please feel free to include a written summary of your position on the matter.
14. **Terminations, Suspensions or Defaults:**

(a) Within the last five years has a contract of the Contractor (or any Predecessor Entities or Related Entities) been terminated or suspended for cause?

YES _____  NO _____

(b) Within the last five years has another party (e.g. surety) completed Work which the Contractor (or any Predecessor Entities or Related Entities) was originally responsible to perform?

YES _____  NO _____

(c) Within the last five years has the Contractor (or any Predecessor Entities or Related Entities) been considered in default of a contract that was not cured within the time frame allowed by the contract?

YES _____  NO _____

If the answer to any of questions 13(a)-(c) is YES, please provide full details on attached sheets. Please feel free to include a written summary of your position on the matter.

15. **Denial of Prequalification or Award:**

(a) Within the last five years has any federal, state, local government, or procurement agency denied the Contractor (or any Predecessor Entities or Related Entities) prequalification?

YES _____  NO _____

(b) Within the last 5 years has any federal, state, or local government or procurement agency, after the Contractor (or any Predecessor Entities or Related Entities) submitted the apparent low bid, refused to award a contract for reasons related to the Contractor’s qualifications, experience, competence, or financial situation?

YES _____  NO _____

If the answer to either of questions 14(a) or (b) is YES, please provide full details on attached sheets. Please feel free to include a written summary of your position on the matter.
16. **Debarments, Etc.:**

   (a) Within the last 5 years, has the Contractor (or any Predecessor Entities or Related Entities) been debarred for any reason by any federal, state, or local government or procurement agencies?

       YES _____    NO______

   (b) Within the last 5 years has the Contractor (or any Predecessor Entities or Related Entities) refrained from bidding for any reason, such as suspension or agreement not to bid, or as part of the settlement of a Dispute of any type with any federal, state, or local government or procurement agencies?

       YES _____    NO______

   If the answer to either of questions 15(a) or (b) is YES, please provide full details on attached sheets. Please feel free to include a written summary of your position on the matter.

17. **Claims History:**

   (a) Within the last 5 years has the Contractor (or any Predecessor Entities or Related Entities) been a party to a Claim with an originally claimed amount in excess of $50,000? (Claim being as defined in the MDOT Contractor Pre-qualification Procedures)

       YES _____    NO______

   If YES, please provide full details for each Claim on attached sheets including (a) whether the Claim was brought by or against the Contractor (or any Predecessor Entities or Related Entities), (b) the nature of the Dispute underlying the Claim, (c) originally claimed amounts, (d) the resolution of such Claims (including the amount) or if unresolved, the current status of such Claims, and (e) the name, address and phone number of the primary adverse party who can be contacted for additional information, and (f) a written summary of your position on the matter (if desired).

18. **List your major equipment available for this contract.** Please identify the number of pipe crews you anticipate will be working concurrently on this project.

   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________

   00405-5  13125
19. Please list the following information for your key personnel such as Project Manager, Office Manager, Project Superintendent, Quality Control, Safety Oversight and Foremen assigned to this contract.

<table>
<thead>
<tr>
<th>Name</th>
<th>Relevant Licenses or Certifications</th>
<th>Experience (# Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Office Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Project Superintendent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. On Site Quality Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Safety Oversight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Foremen</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Identify how many projects your Project Manager will manage concurrent with this project. Include dollar value and end date.

__________________________________________________________________________________________________________________________________________

20. List any subcontractors whom you would expect to use and the general components of the Project for which they will be responsible. Indicate other projects on which the proposed subcontractor has worked with you.

__________________________________________________________________________________________________________________________________________

__________________________________________________________________________________________________________________________________________

__________________________________________________________________________________________________________________________________________

__________________________________________________________________________________________________________________________________________

21. List any vendors from whom you would expect to purchase materials for the general components of the Project. Please provide a contact name and phone number.

Pipe Supplier ______________________________
Curbing Supplier/Subcontractor ________________
Pavement Supplier/Subcontractor ________________
Precast Concrete Supplier ____________________
Aggregates Supplier __________________________

Do you grant the City and/or Engineer permission to contact this (these) subcontractors or vendors for the purpose of determining if the Contractor has sufficient available line of credit to purchase the materials required to complete the work?
22. Safety:

(a) Does the Contractor have a Written Safety Plan?

YES ______ NO______

If YES,

What Year was it first adopted? _________________________
What Year was it last substantially revised?_________________

(b) Please indicate the number of Underground Facilities Incident Reports the Contractor has filed with the Maine Public Utilities Commission in each of the last 5 years.

2013 _____________________
2012 _____________________
2011 _____________________
2010  _____________________
2009 _____________________

23. Financial and Bonding Capacity:

(b) The Bidder shall be capable of obtaining from a Qualifying Bonding Company a performance bond and a payment bond each in the amount of the bid prices that the Contractor will be submitting to the City.

Attach a letter from a Qualifying Bonding Company that (a) states that the said company meets the definition of “Qualifying Bonding Company” and (b) sets forth the bonding capacity of the Contractor including a specific dollar amount for single project and aggregate amount. Letters indicating “unlimited” bonding capacity are not acceptable. Meeting the bonding capacity requirements by combining bonding capacity of subcontractors is not acceptable.

A Qualifying Bonding Company is an insurance, bonding, and/or surety company that is (a) licensed or approved by the State of Maine Department of Business Regulation, Bureau of Insurance, to do business in the State of Maine AND (b) listed on the most recent Federal Department of the Treasury listing of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies

(c) Name and address of banking institutions with whom you do business.

________________________________________________________________________
________________________________________________________________________
Do you grant the City and/or Engineer permission to contact this (these) institutions for the purpose of determining if the contractor has sufficient cash on hand or available line of credit to complete the work?  YES ______  NO______

Dated at ____________________ this _______________ day of ______________, 20____

________________________________________
(Name of Bidder)

By_______________________________________

State of ________________S  Title________________________________________
County of ________________)

_______________________ being duly sworn, deposes and says that he is

of _______________________________________ and that the answers to the foregoing

(Name of Organization)

questions and all statements contained therein are true and correct.

Sworn to before me this ________________ day of ________________________, 20___.

(Notary Public)

My commission expires _________________________.

END OF SECTION
BID BOND

SECTION 00410

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

BIDDER (Name and Address):

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

OWNER (Name and Address):

BID
Bid Due Date:
Project (Brief Description Including Location):

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

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

BIDDER
Bidder's Name and Corporate Seal (Seal)
By: ____________________________ 
Signature and Title
Attest: ____________________________ 
Signature and Title

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

Note: Above addresses are to be used for giving required notice.
1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Surety’s liability.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:
   3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
   3.2. All Bids are rejected by Owner, or
   3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 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.
STANDARD FORM OF AGREEMENT

SECTION 510
STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A STIPULATED PRICE

THIS AGREEMENT (the “Agreement”) is by and between
Long Creek Watershed Management District & The City of South Portland
(hereinafter called OWNER) and

(herinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 – WORK

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

Gorham Road Landscape and Drainage Improvements
Stormwater runoff treatment and landscape improvements.

Maine Mall Road Drainage Improvements
Installation of stormwater treatment systems.

Maine Mall Road Sanitary Sewer Replacement
Replacement of existing gravity sewer and force mains with a gravity sewer system.

ARTICLE 2 – THE PROJECT

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

Stormwater runoff treatment improvements. Installation of stormwater treatment systems. Replacement of existing gravity sewer and force mains with a gravity sewer system.

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Sebago Technic, Inc.

Who is hereinafter called ENGINEER and who will act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.
ARTICLE 4 – CONTRACT TIMES

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 Agreement.

4.02 Dates for Substantial Completion and Final Payment
A. Bidder agrees that the Work will be substantially completed on or before October 31, 2014 and complete and ready for final payment in accordance with paragraph 14.07 of the General Conditions no later than 15 days after substantial completion. All pavement work to be completed by October 15, 2014.

4.03 Days to Achieve Substantial Completion and Final Payment
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 specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER $500.00 for each day that expires after the time specified in paragraph 4.02 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within 15 days after substantial completion or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER $1,000.00 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, below (the “Contract Price”):

A. For all work, a project total of:

\[
\text{(use words)} \quad \$ \quad \text{Figure}
\]

As provided in paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determination of actual quantities and classifications are to be made by ENGINEER as provided in paragraph 9.08 of the General Conditions. Unit prices have been computed as provided in paragraph 11.03 of the General Conditions.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments
A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

6.02 Progress Payments; Retainage

A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR’s Application for Payment on or about the 15th day of 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 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER may determine or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions:

   a. 90% for Work completed (with the balance being retainage). If the Work has been 50% completed as determined by ENGINEER, and if the character and progress of the Work have been satisfactory to OWNER and ENGINEER, OWNER, on recommendation of ENGINEER, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no retainage on account of Work subsequently completed, in which case the remaining progress payments prior to Substantial Completion will be in an amount equal to 100% of the Work completed less the aggregate of payments previously made; and

   b. 90% of cost of the materials and equipment not incorporated in the Work (with the balance being retainage).

2. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 98 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions. “2% of the total work completed shall be retained for a period of 1 year from the date of substantial completion.”

6.03 Final Payment

A. “A. Upon final completion and acceptance with the WORK in accordance with paragraph 14.07 of the General Conditions OWNER shall pay the remainder of the Contract Price as recommended by the ENGINEER as provided in said paragraph 14.07.”

ARTICLE 7 – INTEREST

7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of 5% per annum.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

8.01 In order to induce OWNER to enter onto this Agreement CONTRACTOR makes the following representation:

B. CONTRACTOR has examined and carefully studies the Contract Documents and the other related data identified in the Bidding Documents.
C. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site condition that may affect cost, progress, and performance of the Work.

D. 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.

E. 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) which have been identified in the Supplementary Condition as provided in paragraph 4.02 of the General Conditions and (2) reports and drawing of Hazardous Environmental Condition, if any, at the Site which has been identified in the supplementary Conditions as provided in paragraph 4.06 of the General Conditions.

F. 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, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.

G. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, and 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.

H. 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.

I. CONTRACTOR has correlated the information known to CONTRACTOR, information and observation 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.

J. 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.

K. 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 00510 to 00510-7, inclusive);

2. Performance Bond (pages 00610-1 to 00610-2, inclusive);

3. Payment Bond (pages C-615A-1 to C-615A-3, inclusive);
4. Other Bonds (pages ____ to ____, inclusive);
   a. __________________________ (pages ____ to ____, inclusive);
   b. __________________________ (pages ____ to ____, inclusive);
   c. __________________________ (pages ____ to ____, inclusive);
5. General Conditions (pages 00700-1 to 00700-39, inclusive);
6. Supplementary Conditions (pages 00800-1 to 00800-14, inclusive);
7. Technical Specifications as listed in the table of contents of the Project Manual;
8. Drawings consisting of a cover drawing and drawings numbered 1 through 17 inclusive, with each sheet bearing the following general title: Long Creek Watershed Management District Gorham Road Landscape and Drainage Improvements, South Portland, Maine prepared by Sebago Technics, Inc. and dated March 2014. Drawings consisting of a cover drawing and drawings numbered 1 through 13 inclusive, with each sheet bearing the following general title: Long Creek Watershed Management District Maine Mall Road Drainage Improvements, South Portland, Maine prepared by Sebago Technics, Inc. and dated March 2014. Drawings consisting of a cover drawing and drawings numbered 1 through 8 inclusive, with each sheet bearing the following general title: City of South Portland Maine Mall Road Sanitary Sewer Replacement, South Portland, Maine prepared by Sebago Technics, Inc. and dated March 2014.
9. Addenda (numbers ____ to ____ , inclusive);
10. Exhibits to this Agreement (enumerated as follows);
   a. Notice of Award (pages C-510-1 to _____, inclusive);
   b. Notice to Proceed (pages C-550-1 to _____, inclusive);
   c. CONTRACTOR’s Bid (pages 00310-1 to 00310-19, inclusive and 00310A and 00310A2);
   d. CONTRACTOR’s Bid Sheet
   e. Documentation submitted by CONTRACTOR prior to Notice of Award (pages ____ to ____ , inclusive);
   f. ________________________________;
11. 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.

D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.05 of the General Conditions.

**ARTICLE 10 – MISCELLANEOUS**

10.01 Terms

A. Terms used in this Agreement which are defined in the General Conditions shall have the meanings indicated in the General Conditions.

10.02 Assignment of Contract

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the prior 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 had been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have signed or identified by OWNER and CONTRACTOR or on their behalf.
This Agreement will be effective on _____________, ____ (which is the Effective Date of the Agreement).

OWNER: 

Long Creek Watershed Management District

By: ____________________________________

[CORPORATE SEAL]

Attest ______________________

Address for giving notices: 

35 Main Street

Windham, ME 04062

(If OWNER is a corporation, attach evidence of authority to sign. If OWNER is a public body, License No. _____________________

attach evidence of authority to sign and (Where applicable)

resolution or other documents authorizing execution of OWNER-CONTRACTOR Agreement)

Agent for service of process:______________________________________________

(If CONTRACTOR is a corporation or a partnership,

attach evidence of authority to sign.)

Designated Representative: 

Name: ______________________

Title: ______________________

Address: ______________________

Phone: ______________________

Facsimile: ______________________

CONTRACTOR:

_______________________________

By: _____________________________

[CORPORATE SEAL]

Attest ______________________

Address for giving notices: 

_______________________________

Phone: ______________________

Facsimile: ______________________
This Agreement will be effective on _____________, ____ (which is the Effective Date of the Agreement).

OWNER: _____________________________
City of South Portland
By:____________________________________

CONTRACTOR: _____________________________
[CORPORATE SEAL]
Attest________________________
Address for giving notices: 25 Cottage Road
South Portland, ME 04106

[CORPORATE SEAL]
Attest________________________
Address for giving notices: _________________________

(If OWNER is a corporation, attach evidence of authority to sign. If OWNER is a public body, License No. _____________
attach evidence of authority to sign and resolution or other documents authorizing execution of OWNER-CONTRACTOR Agreement)

Agent for service of process: __________________________________________

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

Designated Representative: _____________________________
Name: _____________________________

Title: _____________________________
Address: _____________________________

Phone: _____________________________
Facsimile: _____________________________

Designated Representative: _____________________________
Name: _____________________________

Title: _____________________________
Address: _____________________________

Phone: _____________________________
Facsimile: _____________________________
SECTION 00610
PERFORMANCE BOND

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

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

OWNER (Name and Address):

CONTRACT
Date:
Amount:
Description (Name and Location):

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

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

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

SURETY

Surety’s Name and Corporate Seal
By: __________________________
Signature and Title
(Attach Power of Attorney)

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

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

SURETY

Surety’s Name and Corporate Seal
By: __________________________
Signature and Title
(Attach Power of Attorney)

Attest: __________________________
Signature and Title

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

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

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

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

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

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

      1. Surety in accordance with the terms of the Contract;
      2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.

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

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

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

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

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

      1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
      2. Deny liability in whole or in part and notify Owner citing reasons thereof.

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

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

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

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

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

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

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

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

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

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

12. Definitions.

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

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

   12.3. Contractor Default: Failure of Contractor, which has not been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

   12.4. Owner Default: Failure of Owner, which has not been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

---

FOR INFORMATION ONLY – Name, Address and Telephone
Surety Agency or Broker
Owner’s Representative (engineer or other party)
SECTION 00620

PAYMENT BOND

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

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

OWNER (Name and Address):

CONTRACT
   Effective Date of Agreement:
   Amount:
   Description (Name and Location):

BOND
   Bond Number:
   Date (Not earlier than Effective Date of Agreement):
   Amount:
   Modifications to this Bond Form:

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

CONTRACTOR AS PRINCIPAL

Surety (Seal) (Seal)
Contractor's Name and Corporate Seal Surety's Name and Corporate Seal

By: ______________________   By: ______________________
   Signature

Print Name

Title

Attest: ______________________   Attest: ______________________
   Signature

Title

Note: Provide execution by additional parties, such as joint venturers, if necessary.
Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.

1. With respect to Owner, this obligation shall be null and void if Contractor:

   1.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and

   1.2 Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.

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

3. Surety shall have no obligation to Claimants under this Bond until:

   3.1 Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

   3.2 Claimants who do not have a direct contract with Contractor:

       1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and

       2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and

       3. Not having been paid within the above 30 days, have sent a written notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.

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

5. Reserved.

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

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

8. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
9. Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders, and other obligations.

10. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

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

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

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

14. Definitions

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

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

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

FOR INFORMATION ONLY – (Name, Address, and Telephone)
Surety Agency or Broker:
Owner’s Representative (Engineer or other):
STANDARD
GENERAL CONDITIONS
OF THE
CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

__________________________________
AMERICAN COUNCIL OF ENGINEERING COMPANIES

__________________________________
AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General Contractors of America

Construction Specifications Institute
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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. Addenda--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. Agreement--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. Application for Payment--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

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

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

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

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

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

9. Change Order--A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

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

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

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

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

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

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


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

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

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

20. Field Order--A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. **General Requirements**--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. **Hazardous Environmental Condition**--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. **Hazardous Waste**--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

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

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

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

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

28. **Notice to Proceed**--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

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

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

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

32. **Progress Schedule**--A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.

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

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

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

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

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

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

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

40. **Schedule of Values**--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.

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

42. **Site**--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

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

44. **Subcontractor**--An individual or entity having a direct contract with Contractor or with any other
Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

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

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

48. *Supplier*—A manufacturer, fabricator, supplier, distributor, material man, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

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

51. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

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

1.02  **Terminology**

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. *Intent of Certain Terms or Adjectives*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:

   a. does not conform to the Contract Documents, or

   b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or

   c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment
to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

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

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

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

2.02 Copies of Documents

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

2.03 Commencement of Contract Times; Notice to Proceed

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

2.04 Starting the Work

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

2.05 Before Starting Construction

A. Preliminary Schedules: Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

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

2.06 Preconstruction Conference

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A. procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 Initial Acceptance of Schedules

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the
Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor’s full responsibility therefore.

2. Contractor’s Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor’s Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 Intent

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

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

3.02 Reference Standards

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

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies

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

2. Contractor’s Review of Contract Documents During Performance of Work: If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

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

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

   b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

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3.04 Amending and Supplementing Contract Documents

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

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

1. A Field Order;

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

3. Engineer’s written interpretation or clarification.

3.05 Reuse of Documents

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer’s consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 Electronic Data

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

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

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

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

4.01 Availability of Lands

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner’s furnishing the Site or a part thereof, Contractor may make a Claim therefore as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner’s interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 Subsurface and Physical Conditions

A. Reports and Drawings: The Supplementary Conditions identify:
1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

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

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

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 Differing Subsurface or Physical Conditions

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

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

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

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

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

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

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

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

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefore as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but
not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 Underground Facilities

A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

   a. reviewing and checking all such information and data,

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

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

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

B. Not Shown or Indicated

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

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

4.05 Reference Points

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

4.06 Hazardous Environmental Condition at Site

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

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

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
Regulations, Owner shall indemnify and hold harmless G. To the fullest extent permitted by Laws and with Article 7. performed by Owner’s own forces or others in accordance 10.05. Owner may have such deleted portion of the Work may make a Claim therefore as provided in Paragraph adjustment in Contract Price or Contract Times as a result entitlement to or on the amount or extent, if any, of an Work. If Owner and Contractor cannot agree as to area affected by such condition to be deleted from the resume such Work under such special conditions, then a reasonable belief it is unsafe, or does not agree to Contractor does not agree to resume such Work based on if after receipt of such written notice Contractor does not agree to resume such Work on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner order the portion of the Work that is in the Work in connection with such condition or in any area affected thereto or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefore as provided in Paragraph 10.05. F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefore as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner’s own forces or others in accordance with Article 7. G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence. H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence. I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site. ARTICLE 5 - BONDS AND INSURANCE

5.01 Performance, Payment, and Other Bonds

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor’s obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

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

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 Licensed Sureties and Insurers

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

5.03 Certificates of Insurance

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

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

5.04 Contractor’s Liability Insurance

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor’s performance of the Work and Contractor’s other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

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

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

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

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

   a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

   b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

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

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

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

3. include completed operations insurance;

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

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

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

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

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

5.05 Owner’s Liability Insurance

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner’s option, may purchase and maintain at Owner’s expense Owner’s own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 Property Insurance

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

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

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

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

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

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

6. include testing and startup; and

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

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

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

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser’s own expense.
E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 Waiver of Rights

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner’s property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 Receipt and Application of Insurance Proceeds

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

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

5.09 Acceptance of Bonds and Insurance; Option to Replace

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

5.10 Partial Utilization, Acknowledgment of Property Insurer

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

ARTICLE 6 - CONTRACTOR’S RESPONSIBILITIES

6.01 Supervision and Superintendence

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor’s representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

6.02 Labor; Working Hours

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 Services, Materials, and Equipment

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

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

6.04 Progress Schedule

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

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

6.05 Substitutes and “Or-Equals”

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is
intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or “or-equal” item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. “Or-Equal” Items: If in Engineer’s sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an “or-equal” item, in which case review and approval of the proposed item may, in Engineer’s sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

   1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

   2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

   3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

   1) there will be no increase in cost to the Owner or increase in Contract Times, and

   2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

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

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

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

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

   1) shall certify that the proposed substitute item will:

      a) perform adequately the functions and achieve the results called for by the general design,

      b) be similar in substance to that specified, and

      c) be suited to the same use as that specified;

   2) will state:

      a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor’s achievement of Substantial Completion on time;

      b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

      c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

   3) will identify:

      a) all variations of the proposed substitute item from that specified, and

      b) available engineering, sales, maintenance, repair, and replacement services;

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

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

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

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

E. Engineer’s Cost Reimbursement: Engineer will record Engineer’s costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

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

6.06 Concerning Subcontractors, Suppliers, and Others

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

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner’s acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor’s own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

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

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

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

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcon-
trators or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 Patent Fees and Royalties

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 Permits

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 Laws and Regulations

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor’s compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor’s primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor’s obligations under Paragraph 3.03.

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

6.10 Taxes

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

6.11 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

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

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

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. Removal of Debris During Performance of the Work: During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. Cleaning: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. Loading Structures: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 Record Documents

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

6.13 Safety and Protection

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor’s duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
6.14 Safety Representative

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

6.15 Hazard Communication Programs

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

6.16 Emergencies

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

6.17 Shop Drawings and Samples

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

1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. Samples: Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

    a. Submit number of Samples specified in the Specifications.

    b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer’s review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

   a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

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

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

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

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor’s obligations under the Contract Documents with respect to Contractor’s review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing’s or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.
D. Engineer’s Review

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer’s review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer’s review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer’s review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer’s review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 Continuing the Work

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 Contractor’s General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor’s warranty and guarantee.

B. Contractor’s warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor’s obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor’s obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

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

7. any correction of defective Work by Owner.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers’ compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer’s officers, directors, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 Delegation of Professional Design Services

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor’s responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional’s written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer’s review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer’s review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

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

ARTICLE 7 - OTHER WORK AT THE SITE

7.01 Related Work at Site

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

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

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner’s employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
C. If the proper execution or results of any part of Contractor’s Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor’s Work. Contractor’s failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor’s Work except for latent defects and deficiencies in such other work.

7.02 Coordination

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

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

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

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

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

7.03 Legal Relationships

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

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

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

ARTICLE 8 - OWNER’S RESPONSIBILITIES

8.01 Communications to Contractor

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

8.02 Replacement of Engineer

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

8.03 Furnish Data

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

8.04 Pay When Due

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

8.05 Lands and Easements; Reports and Tests

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

8.06 Insurance

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

8.07 Change Orders

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

8.08 Inspections, Tests, and Approvals

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

8.09 Limitations on Owner’s Responsibilities

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.
ARTICLE 9 - ENGINEER’S STATUS DURING CONSTRUCTION

9.01 Owner’s Representative

A. Engineer will be Owner’s representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner’s representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 Visits to Site

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor’s executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer’s efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer’s visits or observations of Contractor’s Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 Project Representative

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer’s consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 Authorized Variations in Work

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and shall be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided in Paragraph 10.05.

9.05 Rejecting Defective Work

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

9.06 Shop Drawings, Change Orders and Payments

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

B. In connection with Engineer’s authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
C. In connection with Engineer’s authority as to Change Orders, see Articles 10, 11, and 12.

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

9.07 Determinations for Unit Price Work

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer’s preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer’s written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 Decisions on Requirements of Contract Documents and Acceptability of Work

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

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

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

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

9.09 Limitations on Engineer’s Authority and Responsibilities

A. Neither Engineer’s authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer’s review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 Authorized Changes in the Work

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

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

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 Execution of Change Orders

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

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

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

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

10.04 Notification to Surety

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

10.05 Claims

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

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

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

1. deny the Claim in whole or in part,

2. approve the Claim, or

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

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

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

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

11.01 Cost of the Work

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

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers’ compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers’ field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor’s Cost of the Work and fee shall be determined in the same manner as Contractor’s Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:
   a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor’s employees incurred in discharge of duties connected with the Work.
   b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
   c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
   d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.
   e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
   f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the
written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor’s fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.

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

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

1. Payroll costs and other compensation of Contractor’s officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor’s principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor’s fee.

2. Expenses of Contractor’s principal and branch offices other than Contractor’s office at the Site.

3. Any part of Contractor’s capital expenses, including interest on Contractor’s capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

C. Contractor’s Fee: When all the Work is performed on the basis of cost-plus, Contractor’s fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor’s fee shall be determined as set forth in Paragraph 12.01.C.

D. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

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

B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor’s costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities
and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor’s overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

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

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 Change of Contract Price

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

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

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

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

C. Contractor’s Fee: The Contractor’s fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

   a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor’s fee shall be 15 percent;

   b. for costs incurred under Paragraph 11.01.A.3, the Contractor’s fee shall be five percent;

   c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

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

   e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor’s fee by an amount equal to five percent of such net decrease; and

   f. when both additions and credits are involved in any one change, the adjustment in Contractor’s fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 Change of Contract Times

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

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an
12.03 Delays

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

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times.

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

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

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

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

13.01 Notice of Defects

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

13.02 Access to Work

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

13.03 Tests and Inspections

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

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

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

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

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

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

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

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

13.04 Uncovering Work

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

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected by others, Contractor, at Engineer’s request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefore as provided in Paragraph 10.05.

D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefore as provided in Paragraph 10.05.

13.05 Owner May Stop the Work

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

13.06 Correction or Removal of Defective Work

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

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

13.07 Correction Period

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor’s use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner’s written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
A. If, instead of requiring correction or removal and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner’s written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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

13.08  Acceptance of Defective Work

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer’s recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner’s evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer’s recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09  Owner May Correct Defective Work

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor’s services related thereto, take possession of Contractor’s tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner’s representatives, agents and employees, Owner’s other contractors, and Engineer and Engineer’s consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefore as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor’s defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner’s rights and remedies under this Paragraph 13.09.
ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 Schedule of Values

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 Progress Payments

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner’s interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor’s legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer’s reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer’s recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer’s observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer’s review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer’s knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor’s being entitled to such payment appear to have been fulfilled in so far as it is Engineer’s responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer’s review of Contractor’s Work for the purposes of recommending payments nor Engineer’s recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor’s failure to comply with Laws and Regulations applicable to Contractor’s performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer’s opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer’s opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
b. the Contract Price has been reduced by Change Orders;
c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due

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

D. Reduction in Payment

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor’s performance or furnishing of the Work;
b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
c. there are other items entitling Owner to a set-off against the amount recommended; or
d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner’s satisfaction the reasons for such action.

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

14.03 Contractor’s Warranty of Title

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

14.04 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor’s notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefore.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefore. If, after consideration of Owner’s objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.
D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer’s issuing the definitive certificate of Substantial Completion, Engineer’s aforesaid recommendation will be binding on Owner and Contractor until final payment.

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

14.05 Partial Utilization

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

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefore. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 Final Inspection

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

14.07 Final Payment

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

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

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

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

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

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

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral...
satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer’s Review of Application and Acceptance

1. If, on the basis of Engineer’s observation of the Work during construction and final inspection, 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 Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer’s recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

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

14.08 Final Completion Delayed

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

14.09 Waiver of Claims

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

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

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

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 Owner May Suspend Work

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefore as provided in Paragraph 10.05.

15.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor’s persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

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

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


B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
1. exclude Contractor from the Site, and take possession of the Work and of all Contractor’s tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

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

E. Where Contractor’s services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

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

15.03 Owner May Terminate For Convenience

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

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

15.04 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor’s stopping the Work as permitted by this Paragraph.
ARTICLE 16 - DISPUTE RESOLUTION

16.01 Methods and Procedures

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer’s action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim to another dispute resolution process, or

3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 - MISCELLANEOUS

17.02 Computation of Times

A. When any period of time is referred to in the Contract Documents 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.

17.03 Cumulative Remedies

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

17.04 Survival of Obligations

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

17.05 Controlling Law

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

17.06 Headings

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

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract Funding Agency Edition, EJCDC C-700 (2002 Edition), hereinafter called the General Conditions, and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

Contents of Supplementary Conditions

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SC-1 DEFINITIONS

The terms used in these Supplementary Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions.

The Owner will assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

SC-1.01.A.3. APPLICATION FOR PAYMENT

Add the following language to the end of Paragraph 1.01.A.3:

The Application for Payment form to be used on this Project is EJCDC No. C-620.

SC-1.01.A.9. CHANGE ORDER

Add the following language to the end of Paragraph 1.01.A.9:

The Change Order form to be used on this Project is EJCDC No. C-941.

SC-1.01.A.29 OWNER

Add the following to the end of paragraph 1.29 of the General Conditions:

Owner is referred to as Grantee in certain sections of these Contract Documents. Owner and Grantee are one and the same.
SC-1.01.A.53 NON-RESIDENT CONTRACTOR

Add a new paragraph immediately after paragraph 1.01.A.53 of the General Conditions, which is to read as follows:

54. Non-Resident Contractor -

a. A person who is not a resident in the State where the proposed construction is to be located, or
b. Any partnership that has no member thereof resident in the State where the proposed construction is to be located.
c. Any corporation established under laws other than those of the State in which the proposed construction is located.

SC-2.01 DELIVERY OF BONDS AND EVIDENCE OF INSURANCE

Add a new paragraph immediately after paragraph 2.01.B of the General Conditions, which is to read as follows:

C. Non-Resident Contractor: The Contractor, if a corporation established under laws other than the State in which the proposed construction is located, shall file with the Owner, notice of the name of its resident attorney, appointed as required by the laws of the State in which the proposed construction is located. The Contractor, if a resident of a State other than that in which the proposed construction is located and not a corporation, shall file, at the time of execution of the Agreement, with the Owner a written appointment of a resident of the State in which the construction is located, having an office or place of business therein, to be his true and lawful attorney upon whom all lawful processes in any actions or proceedings against him may be served; and in such writing, which shall set forth said attorney's place of residence, shall agree that any lawful process against him which is served on said attorney shall be of the same legal force and validity as if served on him and that the authority shall continue in force so long as any liability remains outstanding against him in said State. The power of attorney shall be filed in the office of the Secretary of State if required, and copies certified by the Secretary shall be sufficient evidence thereof. Such appointment shall continue in force until revoked by an instrument in writing, designating in a like manner some other person upon whom such processes may be served, which instrument shall be filed in the manner provided herein for the original appointment.
SC-2.02 COPIES OF THE CONTRACT

Revise Paragraph 2.02 of the General Conditions to read as follows:

Owner shall furnish to Contractor up to three copies of the Contract Documents as are reasonably necessary for the execution of the work. Additional copies will be furnished upon request at the cost of reproduction.

SC3.01B INTENT

Add the following language at the end of Paragraph 3.01B of the General Conditions:

If there is any conflict between the provisions of the Contract Documents and any such referenced provisions, the language of the Contract Documents will take precedence over that of any standard specification, manual or code.

SC3.01.1 Sections of Division 1 - General Requirements, govern the execution of all sections of the Specifications.

SC3.01.2 The Owner has adopted certain portions of the Standard Specifications of the Maine Department of Transportation, entitled "STANDARD SPECIFICATIONS, HIGHWAYS AND BRIDGES, REVISION OF APRIL 1995" and "Revision of December 2002". Whenever in the Standard Specifications and Contract Drawings, the Commission; Maine Department of Transportation (MDOT), State Highway Commission of the State of Maine, or any reference to the State Highway Commission or its engineers is mentioned, the intent and meaning shall mean the Owner.

SC-4.02, SC-4.03 and SC-4.04 SUBSURFACE AND PHYSICAL CONDITIONS; DIFFERING SUBSURFACE OR PHYSICAL CONDITIONS; UNDERGROUND FACILITIES

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

4.02.C. In the preparation of Drawings and Specifications, Engineer or Engineer’s Consultants relied upon the following reports of explorations and tests of subsurface conditions at the Site:

1. None.

SC-4.06 HAZARDOUS ENVIRONMENTAL CONDITION AT SITE:

Add to the end of 4.06 a new paragraph 4.06 J. to read as follows:

Notwithstanding the provisions of Paragraphs 4.06 G and 4.06 H above, nothing in this Agreement is intended, or shall be construed, to constitute a waiver of any defense, immunity or
limitation of liability that may be available to Owner as a governmental entity, or to any of the Owner’s officers, agents or employees, pursuant to the Eleventh Amendment to the Constitution of the United States of America, the Maine Constitution, the Maine Tort Claims Act (14 M.R.S.A. § 8101 et seq.), any state or federal statute, the common law or any privileges or immunities as may be provided by law.

SC-5.02 LICENSED SURETIES AND INSURERS

Add the following new paragraph immediately after Paragraph 5.02A:

B. A qualifying bonding company is an insurance, bonding, and/or surety company that is (a) licensed or approved by the State of Maine Department of Business Regulation, Bureau of Insurance, to do business in the State of Maine AND (b) listed on the most recent Federal Department of the Treasury listing of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies”.

SC-5.03 CERTIFICATES OF INSURANCE

Add the following new paragraphs immediately after Paragraph 5.03.B:

C. Failure of the Owner to demand such certificates or other evidence of full compliance with these insurance requirements or failure of the Owner to identify a deficiency from evidence provided shall not be construed as a waiver of Contractor’s obligation to maintain such insurance.

D. Certificates of Insurance of the type and in the amounts required shall be delivered to the Owner prior to the commencement of any work.

E. Extension endorsements must provide "Additional Insured" status to certificate holders including the State of Maine, Owners, Engineer, Participating Landowners (the “Participating Landowners”, the Participating Landowners list is attached in Appendix 1) who have entered into an “Agreement Between Participating Landowner and the Long Creek Watershed Management District” and other landowners. The parties identified in SC-5.04 B-1. 5. below must be listed as additional insureds for General Liability and Auto Liability at a minimum. A copy of the extension endorsement is to be attached to the certificate.

SC-5.04 CONTRACTOR’s LIABILITY INSURANCE

Add the following new paragraph immediately after Paragraph 5.04.B:

B-1. The limits of liability for insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
1. Workers’ Compensation, and related coverages under Paragraphs 5.04.A.1 and A.2 of the General Conditions:
   a. State: Statutory
   b. Applicable Federal (e.g., Longshoremen’s) Statutory
   c. Employer’s Liability $ 2,000,000

2. Contractor’s General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages:
   a. General Aggregate $ 2,000,000
   b. Products - Completed Operations Aggregate $ 2,000,000
   c. Personal and Advertising Injury $ 2,000,000
   d. Each Occurrence (Bodily Injury and Property Damage) $ 2,000,000
   e. Property Damage liability insurance will provide Explosion, Collapse, and Underground coverages where applicable.
   f. Excess or Umbrella Liability
      1) General Aggregate $ 2,000,000
      2) Each Occurrence $ 2,000,000

3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:
   a. Bodily Injury:
      Each Person $ 2,000,000
      Each Accident $ 2,000,000
   b. Property Damage:
      Each Accident $ 2,000,000
      Include $2,000,000 Umbrella Minimum
   c. Combined Single Limit of $ 2,000,000

4. The Contractual Liability coverage required by paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:
   a. Bodily Injury:
      Each Person $ 2,000,000
      Each Accident $ 2,000,000
   b. Property Damage:
      Each Accident $ 2,000,000
5. All insurance required by this Paragraph 5.04, except for worker’s compensation insurance, shall name the Participating Landowners; the owners of properties upon which work will be performed, if they are not Participating Landowners; State of Maine; Owners; Engineer and their respective directors, officers, managers, members, employees, and agents as additional insureds.

6. Extension endorsements must provide "Additional Insured" status to certificate holders including the Owners and Engineer. The parties identified in SC-5.04 B-1. 5. above must be listed as additional insureds for General Liability and Auto Liability at a minimum. A copy of the extension endorsement is to be attached to the certificate.

SC-5.04.B.5 Delete "at least 30 days" and replace with "at least 60 days".

SC-5.06 PROPERTY INSURANCE

SC-5.06.A. Delete paragraph 5.06.A in its entirety and insert the following in its place:

A. Owner will not purchase or maintain property insurance upon the Work at the Site.

SC-5.06B. Delete Paragraph 5.06.B of the General Conditions in its entirety and insert the following in its place:

B. Owner shall not purchase boiler and machinery insurance.

SC-5.06F Add a new paragraph immediately after Paragraph 5.06 of the General Conditions which is to read as follows:

F. Property insurance to the full insurable value of the Work in accordance with Paragraph 5.6 of the General Conditions will be provided by the Contractor in the form of 100% Builder’s Risk, completed value.

SC-5.07 WAIVER OF RIGHTS

SC-5.07.A. Delete paragraph 5.06.A in its entirety and insert the following in its place:

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owners, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, members, managers, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such
policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, members, managers, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Contractor as trustee or otherwise payable under any policy so issued.

SC-5.07B. Delete Paragraph 5.07.B of the General Conditions in its entirety and insert the following in its place:

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, members, managers, employees, agents, consultants and subcontractors of each and any of them for:

SC-5.07C. Delete Paragraph 5.07.C of the General Conditions in its entirety and insert the following in its place:

C. Any insurance policy maintained by Owners covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, members, managers, employees, agents, consultants and subcontractors of each and any of them.

SC-6.01 SUPERVISION AND SUPERINTENDENCE

Delete paragraph 6.01.B in its entirety and insert the following in its place:

B. At all times during the progress of the Work, Contractor shall assign a competent resident Superintendent who shall not be replaced without 7 days advance written notice to Owner and Engineer and prior authorization by Owner, except under extraordinary circumstances. The Contractor’s written notice shall provide a complete explanation of the reasons for replacement. Replacement of the Superintendent to assume responsibility for another project or position within the Contractor’s organization is not an acceptable reason for replacement. The
Superintendent will be Contractor’s representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the Superintendent shall be binding on Contractor. The Contractor’s Superintendent shall not oversee or prepare bids for other work while present on the Site. If the resident Superintendent is not on site, the owner may, at the owner’s discretion, reduce payments to the contractor, based on the Superintendent’s hourly rate established in the Contractor’s bid.

SC-6.02 LABOR; WORKING HOURS

Add the following sentences to the end of paragraph 6.02.B of the General Conditions.

"Regular working hours shall be 7:00 A.M. to 7:00 P.M., Monday through Friday. If the Contractor or Subcontractors, wish to work outside of these hours, written authorization must be obtained in advance from the Long Creek Watershed Management District and the City of South Portland."

Add the following paragraphs immediately after paragraph 6.02.B

C. The Contractor shall not work during legal holidays without written authorization obtained in advance from the Long Creek Watershed Management District and the City of South Portland. The Contractor shall not occupy public right of way, other than in designated staging areas, with equipment or materials during legal holidays.

SC-6.06 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS

Add the following sentences at the end of paragraph 6.06.B:

"The Contractor shall deliver to the Engineer and Owner, for review and acceptance within five days of bid opening, a listing of the Subcontractors, Suppliers or entities for the work listed below:

1. Subcontracts exceeding $10,000
2. Subcontracts exceeding $100,000"

Add the following paragraph immediately after paragraph 6.06.C.2:

3. Owner or Engineer may furnish to any such Subcontractor, Supplier, or other individual or entity, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by a particular Subcontractor, Supplier, or other individual or entity.

Add the new paragraphs immediately after Paragraph 6.06.G:

H. The Contractor shall not award work valued at more than fifty (50%) percent of the Contract Price to Subcontractor(s), without prior written approval of the Owner.
SUPPLEMENTARY CONDITIONS

SC-6.07 PATENT FEES AND ROYALTIES

Delete paragraph 6.07.B in its entirety and insert the following in its place:

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, the Participant Landowners, and the officers, directors, managers, 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 of any invention, design, process, products, or device not specified in the Contract Documents.

SC-6.08 PERMITS

Add the following paragraph immediately after paragraph 6.08.A:

B. Contractor shall be responsible for obtaining road opening, building, plumbing and electrical permits, and any other permit required through the City of South Portland and for complying with all requirements. The fees for such shall be waived by the City.

SC-6.10 TAXES

Add a new paragraph immediately after Paragraph 6.10.A:

B. Owner is exempt from payment of sales and compensating use taxes of the State on all materials to be incorporated into the Work.

1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.

2. Owner’s exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

SC-6.20 INDEMNIFICATION

Delete paragraph 6.20.A in its entirety and insert the following in its place:
A. Contractor agrees to defend, indemnify, and hold harmless the State of Maine, Owners, Engineer, Participating Landowners, the owners of properties upon which work will be performed, if they are not Participating Landowners, and their respective directors, officers, managers, members, agents and employees harmless from any claim(s), cause(s) of action, liability or expense, including, without limitation, costs and Reasonable attorney’s fees, for personal injury (including death) and/or property damage caused by, related to, arising out of or resulting from negligent acts or omissions or intentional misconduct in the performance of Work, whether by Contractor, Subcontractors, or Suppliers, or by anyone directly or indirectly employed by them to perform the Work, or by anyone for whose acts any of them may be liable.

Add a new paragraph immediately after Paragraph 6.20 C. of the General Conditions which is to read as follows:

D. The foregoing indemnity expressly extends to claims of injury, death, or damage to employees of Contractor, Subcontractor or Supplier. In claims against any person or entity indemnified under this Section by an employee of Contractor, Subcontractor, or Supplier, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Section shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for Contractor, Subcontractor or Supplier under workers' compensation acts, disability benefit acts or other employee benefit acts. Contractor expressly waives immunity under workers’ compensation laws for the purposes of this indemnity provision.

SC-9 ENGINEERS STATUS DURING CONSTRUCTION

SC-9.03 Add a new paragraph immediately after Paragraph 9.03A of the General Conditions which is to read as follows:

B. Owner may designate a resident project representative to assist Owner in observing the performance of the Work. It shall be the duty of the resident project representative to observe the Work and render decisions as to its acceptability. The responsibilities and limitations of Authority of the resident project representative shall be the same as for Owner set forth in Article 9 of the General Conditions.

SC-9.05 Replace the words “will have authority to” with “shall” in the first sentence.

SC-10.01 AUTHORIZED CHANGES IN THE WORK

At the end of paragraph 10.01.A., add the following sentence:
“Failure to promptly proceed with the work shall be considered a substantial violation of the contract.”

SC-12.01 CHANGE OF CONTRACT PRICE

At the end of subparagraph 12.01.C.2.b, prior to the semicolon, add the following words:

“calculated on Subcontractor’s actual cost before Subcontractor’s fee is added”.

At the end of subparagraph 12.01.C.2.c, prior to the semicolon, add the following words:

“calculated on the actual cost of the work performed before any tier Subcontractor’s fee is added. The total fee on actual work shall not exceed 15%.”

SC-12.03 Delays

Add a new paragraph, immediately after subparagraph 12.03.E. of the General Conditions which is to read as follows:

“F. The Contractor shall not be entitled to an adjustment to the Contract Price or Contract Times for delays caused by unmarked or mis-marked utilities when those utilities are owned by others”.

SC-14.02 PROGRESS PAYMENTS

Replace Paragraph 14.02A(1) of the General Conditions with the following:

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents, including but not limited to, lien waivers for payment after the first payment requisition. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect Owner’s interest therein, all of which must be satisfactory to Owner.
Add the following sentence at the end of paragraph 14.02.A.3:

No payments will be made that would deplete the retainage. Place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor.

Add the following sentences at the end of paragraph 14.02.B.1

An application resubmitted after corrections will be considered a new application for the purpose of determining the Engineer’s review period and the date that payment becomes due. The Engineer’s review will not commence until complete and correct Certified Payrolls have been submitted for work performed during the period of the pay requisition.

Delete Paragraph 14.02.C.1 in its entirety and insert the following in its place:

1. The Application for Payment with Engineer’s recommendations will be presented to the Owner for consideration. If the Owner finds the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 14.02.D will become due thirty five (35) days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

SC-14.07 FINAL PAYMENT

Add a new paragraph immediately after paragraph 14.07.B.1 of the General Conditions which is to read as follows:

2. Two (2) percent of the total contract amount as reflected on the final Application for Payment shall be retained by Owner during the Correction Period. This retainage shall be held by Owner in an account without interest accruing to Contractor. All amounts otherwise due Contractor will be paid as described in paragraph 14.07.C of the General Conditions. At the end of the correction period, Owner shall pay Contractor the retainage less any amounts deducted for failure of Contractor to perform as outlined in Section 13 of the General Conditions.

SC-16 DISPUTE RESOLUTION

Article 16 of the General Conditions shall be deleted in its entirety and replaced with the following:

Except as otherwise agreed by the parties in writing, all disputes, claims, counterclaims, and other matters in question between the Owner and the Contractor arising out of or relating to this agreement shall be decided by a Maine court of competent jurisdiction. This Agreement is made and shall be construed under the laws of the State of Maine. Except as otherwise expressly agreed by the parties in writing exclusive venue for any such civil action shall be in Maine.
ARTICLE 18 MISCELLANEOUS

Add the following paragraph Article 18

Project Sign

The CONTRACTOR shall provide and erect a PROJECT sign as detailed and specified. Submit sign layout and design to OWNER prior to purchasing. The location of the sign shall be as directed by the ENGINEER. No other CONTRACTOR, SUBCONTRACTOR or material signs will be permitted on the sign. The CONTRACTOR shall maintain and keep the PROJECT sign in good condition until the work is completed when the sign will be removed. All other signs to be erected on the site shall be approved by the ENGINEER. Provide adequate supports for sign as site conditions may require and keep sign a proper distance above prevailing grade to permit public viewing.

Temporary Construction Sign

### Project Title

**(include Town/District name)**

- Engineer:
- Contractor:
- Total Project Cost:

| MINIMUM SIGN DIMENSIONS: 1200 x 2400 x 19 MM (4’ x 8’ x 3/4”) |
| EXTERIOR PLYWOOD (A-B GRADE) |
| WHITE BACKGROUND |
| MINIMUM LETTERING SIZE: 5 CM (2-INCHES) |

ARTICLE 19 – ENVIRONMENTAL REQUIREMENTS

Add the following paragraph Article 19

A. The Contractor shall comply with State and local environmental protection requirements including, but not limited to, the following:

1. Control of dust from excavations and spillage of materials on highways and dust from rock drilling operations.
2. No burning will be allowed.
3. Control of erosion and washing of materials from excavated slopes and embankments.
4. Prevention of stream turbidity from dewatering and general earthwork operation.
5. In general, construction of necessary temporary erosion and sedimentation control devices will be in conformance with the latest edition of the Maine Erosion and Sediment Control BMPS.
6. The Contractor shall not dispose of excess materials on lands designated or classified as wetlands by the U.S. Dept. of Fish and Wildlife. The Contractor is advised to contact the Corps of Engineers, the State Department of Environmental Protection and related agencies prior to selecting any or all sites for disposal of excess materials. Any sediment removed from the existing detention pond shall be disposed of at a licensed processing facility.

ARTICLE 20 – ADDITIONAL INSTRUCTION AND DETAIL DRAWINGS

Add the following paragraph Article 20

A. The Contractor may be furnished additional instructions and detail drawings, by the Engineer, as necessary to carry out the Work required by the Contract Documents.
B. The additional drawings and instruction thus supplied will become a part of the Contract Documents. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions.

END OF SECTION
SECTION 00810

NOTICE OF AWARD

<table>
<thead>
<tr>
<th>Project: Gorham Road Landscape and Drainage Improvements/Maine Mall Road Drainage Improvements/Maine Mall Road Sanitary Sewer Replacement</th>
<th>Owner: Long Creek Watershed Management District/City of South Portland</th>
<th>Owner's Contract No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract: Gorham Road Landscape and Drainage Improvements/Maine Mall Road Drainage Improvements/Maine Mall Road Sanitary Sewer Replacement</td>
<td>Engineer's Project No.: 13125</td>
<td></td>
</tr>
</tbody>
</table>

You are notified that your Bid dated ____ for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for ____. For all Work, at the prices stated in Contractor’s Bid, attached hereto as an exhibit.

The Contract Price of your Contract is ____ ($__). For all Work, at the prices stated in Contractor’s Bid, attached hereto as an exhibit.

2 copies of each of the proposed Contract Documents (except Drawings) accompany this Notice of Award. 2 sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within 10 days of the date you receive this Notice of Award.

1. Deliver to the Owner three fully executed counterparts of the Contract Documents.

2. Deliver with the executed Contract Documents the Contract Performance Bond and Payment Bond as specified in the Instructions to Bidders (Article 20), and General Conditions (Paragraph 5.01) and Supplementary Conditions (Paragraph SC-5.01).

3. Deliver with the executed Contract Documents the Certificates of Insurance as specified in the Instructions to Bidders (Article 20), and General Conditions (Paragraph 5.03) and Supplementary Conditions (Paragraph SC-5.03).

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

__________________________
Owner

By: __________________________
Authorized Signature

__________________________
Title

Copy to Engineer
SECTION 00811
NOTICE TO PROCEED

Dated

Project: Gorham Road Landscape and Drainage Improvements/Maine Mall Road Drainage Improvements/Maine Mall Road Sanitary Sewer Replacement
Owner: Long Creek Watershed Management District/City of South Portland
Owner's Contract No.: 13125
Contract: Gorham Road Landscape and Drainage Improvements/Maine Mall Road Drainage Improvements/Maine Mall Road Sanitary Sewer Replacement
Engineer's Project No.: 13125

Bidder:

Bidder's Address:

You are notified that the Contract Times under the above contract will commence to run on ___. On or before that date, you are to start performing your obligations under the Contract Documents. In accordance with The Agreement, the date of Substantial Completion is October 31, 2014, and the date of readiness for final payment is November 15, 2014.

Before you may start any Work at the Site, Paragraph 2.01.B of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also, before you may start any Work at the Site, you must:

1. Deliver to the Owner three fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract Performance Bond and Payment Bond as specified in the Instructions to Bidders (Article 20), and General Conditions (Paragraph 5.01) and Supplementary Conditions (Paragraph SC-5.01).
3. Deliver with the executed Contract Documents the Certificates of Insurance as specified in the Instructions to Bidders (Article 20), and General Conditions (Paragraph 5.03) and Supplementary Conditions (Paragraph SC-5.03).

Contractor
Owner
Received by:
Given by:
Authorized Signature
Title
Title
Date
Date
Copy to Engineer
SECTION 00836

CONTRACTOR'S AFFIDAVIT

STATE OF ____________________________
COUNTY OF ____________________________

Before me, the undersigned, a ____________________________ (Notary Public, Justice of Peace, Alderman)
in and for said County and State personally appeared, ____________________________ (Individual, Partner or duly authorized representative of corporate contractor)
who being duly sworn according to law deposes and says that the cost of all the Work, and outstanding claims and indebtedness of whatever nature arising out of the performance of the contract between

_________________________________________ (Owner)
and ______________________________________ of ____________________________

(Contractor)
dated ____________________________ for the construction of the ____________________________

(Agreement Date) (Project)

__________________________________________ and necessary appurtenant installations have been paid in full.

______________________________ (Individual, Partner, or duly authorized representative of corporate contractor)

Sworn to and subscribed before me
this ______ day of ____________ , 20 ____, ____________________________

END OF SECTION
SECTION 00837

CONTRACTOR'S RELEASE

KNOW ALL MEN BY THESE PRESENTS that ____________________________ (Contractor)
of ____________________________ , County of ____________________________ and State of ____________________________
do hereby acknowledge that ____________________________ has this day had, and received of
and from ____________________________ the sum of One Dollar and other valuable considerations in
full and complete satisfaction and payment of all sums of money owed, payable and belonging to
______________________________ by any means whatsoever, for on account of a Contract
Agreement between ____________________________ and ____________________________
dated ____________________________ for ____________________________
(Agreement Date) (Project)

NOW, THEREFORE, the said ____________________________ (Contractor)
(for myself, my heirs, executors and administrators) (for itself, its successors and assigns)
do/does, by these presents remise, release, quit-claim and forever discharge ____________________________ (Owner)
______________________________ , of and from all claims and demands, arising from or in connection
with the said contract dated ____________________________ , and of and from all, and all manner of action and
actions, cause and causes of action and actions, suits, debts, dues, duties, sum and sums of money,
accounts, reckonings, bonds, bills, specialties, covenants, contracts, agreements, promises,
variances, damages, judgments, extents, executions, claims and demand, whatsoever in law or
equity, or otherwise, against ____________________________ its successors and assigns, which (I,
my heirs, executors, or administrators) (it, its successors and assigns) ever had, now have or which
(I, my heirs, executors, or administrators) (it, its successors and assigns) hereafter can, shall or may
have, for, upon or by reason of any matter, cause, or thing whatsoever; from the beginning of
recorded time to the date of these presents.
IN WITNESS WHEREOF, ________________________________

(Contractor)

has caused these presents to be duly executed this _____ day of ____________________ 20 ___

Signed, Sealed and Delivered in the presence of:

______________________________ ________________________________ (seal)

(Individual - Contractor)

______________________________

(Partnership - Contractor)

______________________________ By ________________________________ (seal)

(Partner)

Attested:

______________________________

(Corporation)

______________________________ By ________________________________

(Secretary) (President or Vice President)

(Corp. Seal)

END OF SECTION
SECTION 00838
CERTIFICATE OF SUBSTANTIAL COMPLETION

Project: Owner: Owner's Contract No.:

Contract: Date of Contract:

Contractor: Engineer's Project No.:

This [tentative] [definitive] Certificate of Substantial Completion applies to:

- [ ] All Work under the Contract Documents:
- [ ] The following specified portions:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

A [tentative] [revised tentative] [definitive] list of items to be completed or corrected, is attached hereto. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:

- [ ] Amended Responsibilities
- [ ] Not Amended

Owner's Amended Responsibilities:

Contractor's Amended Responsibilities:

The following documents are attached to and made part of this Certificate:

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Executed by Engineer

Accepted by Contractor

Accepted by Owner

Date

Date

Date
STATE OF ______________________
COUNTY OF ______________________

TO WHOM IT MAY CONCERN:

WHEREAS, ________________________________ the undersigned ___________________________________________________________ have been employed by ________________________________ to furnish labor and materials for the project known as ________________________________.

NOW THEREFORE, KNOW YE, THAT WE, the undersigned, for good and valuable considerations do hereby waive and release any and all lien or right of lien on said above project and premises under the Law, in relation to Mechanics' Liens Law, on account of labor and materials, or both, furnished by the undersigned to or on account of the said contract for the said project and premises only so far as that portion of work which has been included in our requisition dated ________________ and all prior requisitions.

THIS WAIVER AND RELEASE is being made to the undersigned in the amount of $____________ which sum the undersigned certifies to be the balance due the undersigned for all labor, materials or both, furnished by the undersigned to or on account of the said contract as included on his requisition dated ________________.

GIVEN UNDER __________________ hand and seal, the ________________ day of ________________, 20__.

By: ________________________________

__________________________________________

END OF SECTION
SECTION 00840
WORK CHANGE DIRECTIVE

No. ___________

Date of Issuance: ____________________________ Effective Date: ____________________________

Project: ____________________________ Owner: ____________________________ Owner's Contract No.: ____________________________

Contract: ____________________________ Date of Contract: ____________________________

Contractor: ____________________________ Engineer's Project No.: ____________________________

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

Description:

Purpose of Work Change Directive:

Attachments: (List documents supporting change):

If the Owner or Contractor believe that the above change has affected the Contract Price any Claim for a Change Order based thereon will involve one or more of the following methods as defined in the Contract Documents.

Method of Determining change in Contract Price:

☐ Unit Prices
☐ Lump Sum
☐ Cost of the Work

Estimated [Increase] [Decrease] in Contract Price: ____________________________
Estimated [Increase] [Decrease] in Contract Times:

$__________________________

Substantial Completion: _________ Days

Final Completion: _________ Days

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

RECOMMENDED: ____________________________

ACCEPTED: ____________________________

ACCEPTED: ____________________________

By: ____________________________ By: ____________________________ By: ____________________________

Engineer (Authorized Signature) Owner (Authorized Signature) Contractor (Authorized Signature)

Date: ____________________________ Date: ____________________________ Date: ____________________________

Approved by Funding Agency (if applicable): ____________________________ Date: ____________________________
WORK CHANGE DIRECTIVE - INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

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

B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

Engineer initiates the form, including a description of the items involved and attachments.

Based on conversations between Engineer and Contractor, Engineer completes the following:

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE: Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the estimated price or Contractor may stop the changed Work when the estimated time is reached. If the Work Change Directive is not likely to change the Contract Price, the space for estimated increase (decrease) should be marked "Not Applicable".

Once Engineer has completed and signed the form, all copies should be sent to Owner for authorization because Engineer alone does not have authority to authorize changes in Price or Times. Once authorized by Owner, a copy should be sent by Engineer to Contractor. Price and Times may only be changed by Change Order signed by Owner and Contractor with Engineer's recommendation.

Paragraph 10.03.A.2 of the General Conditions requires that a Change Order be initiated and processed to cover any undisputed sum or amount of time for Work actually performed pursuant to this Work Change Directive.

Once the Work covered by this directive is completed or final cost and times are determined, Contractor should submit documentation for inclusion in a Change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR CONTRACT TIMES. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.
SECTION 00842
CHANGE ORDER

No. ___________

Date of Issuance: ___________________________  Effective Date: ___________________________

Project: ___________________________  Owner: ___________________________

Contract: ___________________________  Date of Contract: ___________________________

Contractor: ___________________________  Engineer's Project No.: ___________________________

Owner's Contract No.: ___________________________

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

Description:

Attachments: (List documents supporting change):

<table>
<thead>
<tr>
<th>CHANGE IN CONTRACT PRICE:</th>
<th>CHANGE IN CONTRACT TIMES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Contract Price:</td>
<td>Original Contract Times:</td>
</tr>
<tr>
<td>$_________________________</td>
<td>☐ Working days  ☐ Calendar days</td>
</tr>
</tbody>
</table>
|                           | Substantial completion (days or date): ___________________________
|                           | Ready for final payment (days or date): ___________________________
| [Increase] [Decrease] from previously approved Change Orders No._______ to No._______: | [Increase] [Decrease] from previously approved Change Orders No._______ to No._______: |
| $_________________________ | Substantial completion (days): ___________________________
|                           | Ready for final payment (days): ___________________________

Contract Price prior to this Change Order: ___________________________

Contract Times prior to this Change Order: ___________________________

$_________________________  Substantial completion (days or date): ___________________________

Ready for final payment (days or date): ___________________________

[Increase] [Decrease] of this Change Order: ___________________________

[Increase] [Decrease] of this Change Order: ___________________________

$_________________________  Substantial completion (days or date): ___________________________

Ready for final payment (days or date): ___________________________

Contract Price incorporating this Change Order: ___________________________

Contract Times with all approved Change Orders: ___________________________

$_________________________  Substantial completion (days or date): ___________________________

Ready for final payment (days or date): ___________________________

RECOMMENDED: ___________________________  ACCEPTED: ___________________________  ACCEPTED: ___________________________

By: ___________________________  By: ___________________________  By: ___________________________

Engineer (Authorized Signature)  Owner (Authorized Signature)  Contractor (Authorized Signature)

Date: ___________________________  Date: ___________________________  Date: ___________________________

APPROVED: ___________________________  ___________________________  ___________________________

Agency (Authorized Signature)  Date: ___________________________  ___________________________
A. GENERAL INFORMATION

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

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

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

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

B. COMPLETING THE CHANGE ORDER FORM

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

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

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.
SECTION 00844
APPLICATION FOR PAYMENT

(The remainder of this page was left blank intentionally)
### Contractor's Application For Payment No. [___]

**Application Period:** [___]  
**Application Date:** [___]

**To (Owner):** [___]  
**From (Contractor):** [___]  
**Via (Engineer):** [___]

**Project:** [___]  
**Contract:** [___]  
**Owner's Contract No.:** [___]  
**Contractor's Project No.:** [___]  
**Engineer's Project No.:** [___]

---

**APPLICATION FOR PAYMENT**

**Change Order Summary**

<table>
<thead>
<tr>
<th>Number</th>
<th>Additions</th>
<th>Deductions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. **ORIGINAL CONTRACT PRICE** [___]  
   
2. **Net change by Change Orders** [___]  
   
3. **CURRENT CONTRACT PRICE (Line 1 + 2)** [___]  
   
4. **TOTAL COMPLETED AND STORED TO DATE**  
   (Column F on Progress Estimate) [___]

5. **RETAIANGE:**
   
   a. [___] x $ [___] Work Completed [___]
   
   b. [___] % x $ [___] Stored Material [___]
   
   c. Total Retainage (Line 5a + Line 5b) [___]

6. **AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c)** [___]

7. **LESS PREVIOUS PAYMENTS (Line 6 from prior Application)** [___]

8. **AMOUNT DUE THIS APPLICATION** [___]

9. **BALANCE TO FINISH, PLUS RETAINAGE**  
   (Column G on Progress Estimate + Line 5 above) [___]

---

**CONTRACTOR’S CERTIFICATION**

The undersigned Contractor certifies that: (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

---

Payment of: $[___]  
(Line 8 or other - attach explanation of other amount)

is recommended by: [___]  
(Engineer)  
(Date)

Payment of: $[___]  
(Line 8 or other - attach explanation of other amount)

is approved by: [___]  
(Owner)  
(Date)

Approved by: [___]  
[Funding Agency (if applicable)]  
(Date)

---

Prepared by the Engineers' Joint Contract Documents Committee and endorsed by the Associated General Contractors of America and the Construction Specifications Institute.
## Progress Estimate

### Contractor’s Application

<table>
<thead>
<tr>
<th>Item</th>
<th>Work Completed</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scheduled Value</td>
<td>From Previous Application (C + D)</td>
<td>This Period</td>
<td>Materials Presently Stored (not in C or D)</td>
</tr>
<tr>
<td>Specification Section No.</td>
<td>Description</td>
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<tr>
<td>Totals</td>
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- **A** | **B** | **C** | **D** | **E** | **F** | **G** |
- **For (contract):** | **Application Number:** |
- **Application Period:** | **Application Date:** |
### Progress Estimate

**Contractor's Application**

<table>
<thead>
<tr>
<th>Item</th>
<th>Bid Item No.</th>
<th>Description</th>
<th>Bid Quantity</th>
<th>Unit Price</th>
<th>Bid Value</th>
<th>Estimated Quantity Installed</th>
<th>Value</th>
<th>MaterialsPresently Stored (not in C)</th>
<th>Total Completed and Stored to Date (D + E)</th>
<th>% (F)</th>
<th>Balance to Finish (B - F)</th>
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</thead>
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<tr>
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For (contract):  
Application Number:  
Application Period:  
Application Date:  

---

Prepared by the Engineers' Joint Contract Documents Committee and endorsed by the Associated General Contractors of America and the Construction Specifications Institute.
### Stored Material Summary

**Contractor's Application**

<table>
<thead>
<tr>
<th>Invoice No.</th>
<th>Shop Drawing Transmittal No.</th>
<th>Materials Description</th>
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<th>Stored this Month</th>
<th>Incorporated in Work</th>
<th>Materials Remaining in Storage ($)</th>
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| Totals      |                               |                       |                   |                  |                      |                                     |

**Application Information**

- **For (contract):**
- **Application Number:**
- **Application Period:**
- **Application Date:**

**Other Information**

- **Stored Previously:**
- **Stored this Month:**
- **Incorporated in Work:**
- **Materials Remaining in Storage ($) (D + E - F):**

**Totals**

---


Prepared by the Engineers’ Joint Contract Documents Committee and endorsed by the Associated General Contractors of America and the Construction Specifications Institute.
PART 1 - GENERAL

1.1 STANDARD SPECIFICATIONS

The Long Creek Watershed Management District and the City of South Portland have adopted for this project the "State of Maine, Department of Transportation (MaineDOT), Standard Specifications, Revision of December, 2002", including all current additions or modifications thereof, including the most recent version of the MaineDOT “Repair Specifications”, Supplemental Specification (corrections, additions, and revisions to standard specifications), (herein referred to as “Standard Specifications”).

A copy of the Standard Specifications can be found online at www.maine.gov/mdot/contractors/publications/standardspec/

The Standard Specifications adopted for this project include the MaineDOT SPECIAL PROVISION DIVISION 400 PAVEMENTS dated March 10, 2010 attached herein.

1.2 GENERAL CONDITIONS

The Long Creek Watershed Management District and the City of South Portland have adopted the Standard General Conditions of the Construction Contract as prepared by the Engineers Joint Contract Documents Committee (EJCDC C-700) with the supplemental conditions found in the Bidding and Contract Requirements and Specifications. It is the intent of the EJCDC C-700 guideline and Supplemental Conditions to replace the following Divisions of the MaineDOT Standard Specifications:

1. Division 100 – General Conditions; except those provisions contained in the Special Provisions and Supplemental Specifications.
2. Division 100 – Appendix A of the MaineDOT Standard Specifications.

1.3 SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS

A. The Long Creek Watershed Management District and the City of South Portland have also made specific changes to the MaineDOT Standard Specifications to incorporate the requirements of the City of South Portland’s Ordinance and Standards. As such, the Contract Agreement, Special Provisions and Supplemental Specifications contained herein shall take precedence and shall govern in any case of conflict with the MaineDOT Standard Specification.

1. Supplemental Specifications are modifications, additions and deletions to the Standard Specifications.
2. Special Provisions are specifications in the contract that are for additional items not covered in the Standard Specifications.

B. If the Contractor discovers any ambiguity, error, omission, conflict, or discrepancy (“ambiguity”, etc.) related to the Contract Documents that may significantly affect the cost, quality, conformity, or timeliness of the Work, the
Contractor must comply with Section 3.03 Reporting and Resolving Discrepancies of the EJCDC Standard General Conditions (which is similar to Section 104.3.3 – Duty to Notify Department If Ambiguities Discovered of the MaineDOT Standard Specifications). In the case of ambiguity, etc., the following components of the Contract Documents shall control in the following descending order of priority:
1. Bid Amendments (most recent to least recent)
2. Special Provisions
3. Notes on Plans
4. Plans
5. Supplemental Specifications
6. EJCDC C-700 Standard General Conditions with the Supplemental Conditions
7. MaineDOT Repair Specifications
8. MaineDOT Standard Specifications

1.4 NO SEPARATE PAYMENT
A. Unless specifically stated otherwise, the cost for providing work defined in the Special Provisions is incidental to the contract and no separate payment will be made.

1.5 WORKING HOURS
A. Regular Working Hours shall be 7:00 A.M. to 7:00 P.M., Monday through Friday. If the Contractor or Subcontractors wish to work outside of these hours, written authorization must be obtained in advance from the City of South Portland.
B. The Contractor shall be responsible for the hourly cost of the Resident’s observation of work performed outside of normal working hours as specified in Supplemental Condition SC-14.02. The hourly cost of the Resident will be an item included in the Schedule of Values and will be shown as a credit to the Owner in the Contractor’s Pay Requisitions.
C. The Contractor shall not work during holiday weekends without written authorization obtained in advance from the City of South Portland. All trenches shall be backfilled or covered and all equipment and materials shall be moved out of the public streets during holiday weekends. The Contractor shall not occupy public street, other than in designated and secured staging areas, with equipment or materials during holiday weekends or legal holidays
D. The Contractor will be allowed to complete paving and concrete placement operations outside of the Regular Working Hours (night paving) with written authorization obtained in advance from the City of South Portland. The Contractor will be allowed to close streets to vehicular traffic during night paving operations with written authorization obtained in advance from the City of South Portland. No additional payment will be made for night paving.
1.6 **NOTIFICATION OF RESIDENTS**

A. Refer to Specification Section 01050 - Coordination.

B. Residents shall be notified by the Contractor sufficiently in advance of any construction affecting the resident’s driveway and sidewalk to allow adequate time for his removal of personal vehicles. Locations of curb cuts for drive access affecting individual residents shall be brought to their attention. The Contractor shall restore access to all driveways at the end of each work day. The Contractor shall also make every effort to maintain access to the driveways at all times.

1.7 **TRAFFIC SIGNS**

A. All existing traffic signs which are to be removed during construction shall be carefully dismounted and the posts removed and shall be stacked in an area approved by the Engineer.

1. The Contractor shall protect the signs from damage while in his possession and shall repair, at no additional cost to the Long Creek Watershed Management District, any damages cause by his operations.

2. Stop signs are to be maintained at their original locations at all times during the progress of the work.

3. Prior to the start of any construction work, the Contractor and Engineer shall prepare a mutually acceptable inventory of all signs within the project limits which shall be used as a guide for replacement should signs be removed for construction purposes. The signs shall be inventoried by station location and approximate offset, legend of sign and post.

4. This work shall be considered as subsidiary obligation of the contract for which no specific payment will be made.

5. All remounted signs are to be installed on new U-Channel Posts with breakaway connections as indicated in the Standard Specifications and Supplemental Specifications.

1.8 **PROTECTION OF TREES**

A. The Contractor shall be responsible for the preservation of all trees on the project which are not called to be removed. Any trees damaged by the Contractor’s operations shall be repaired using approved tree dressing or paint in accordance with the appropriate provisions of Section 201 of the Standard Specifications.

1.9 **CONTRACTOR STAGING AREAS**

A. The Contractor is responsible for procuring and providing areas for project staging.

B. The Contractor’s staging areas shall be enclosed with 6’ tall temporary fencing.

C. All costs associated with the use, maintenance and restoration of the staging areas are incidental to the Contract and no separate payment will be made.

The following provisions and restrictions apply to each staging area used by the contractor.
1. The Contractor’s staging area shall not encroach within 75 feet of the high water line of Long Creek or within 25 feet of any wetlands.

2. The Contractor shall install and maintain erosion control measures including silt barriers and the downgradient limits of any disturbed areas. The Contractor shall install a stabilized construction entrance for access to the site from the adjacent right-of-way.

3. The Contractor shall install a gravel surface in the staging area suitable for vehicles using the area. Prior to substantial completion of the project, the Contractor shall remove all materials including gravel surfaces, re-grade the site to match existing grades and apply 4” of loam and hydro seed in accordance with the erosion control requirements in the contract.

4. The Contractor is responsible for the protection of all trees in the staging area. No trees shall be removed without prior authorization from the City. Any tree authorized to be removed shall be replaced by the Contractor with a new tree of the same size and species at no additional cost to the City.

1.10 MAINTENANCE OF TRAFFIC

A. The Contractor shall prepare and submit a detailed Traffic Control and Circulation Phasing Plan that is coordinated with the construction schedule and addresses traffic control for all aspects of the project. This work shall be considered a subsidiary obligation of the contract for which no specific payment will be made.

1. The Contractor shall be responsible for the maintenance and protection of all vehicular and pedestrian traffic at all times during construction and shall erect suitable warning signs, flashers, barriers or temporary lighting devices of sufficient size and number to afford protection to the traveling public. The Contractor shall be held responsible for all damage to the work due to any failure of the warning devices to properly protect the work from the traffic, pedestrians or other causes.

2. Responsibility for preparation of a Traffic Control Plan shall be the Contractor’s. The Contractor must submit their Traffic Control Plan to the City for review and approval, five (5) working days prior to the Pre-Construction Meeting. The City reserves the right to require modifications or additional traffic control measures as determined necessary by the City to insure the safe movement of pedestrian and vehicular traffic and that parking/access/deliveries to local businesses are maintained throughout construction.

3. The Contractor’s Traffic Control and Phasing Plan shall incorporate the following minimum requirements: Lane closures for the section of Westbrook Street from Gorham Road to I-295 shall require night time closures to minimize traffic interruptions. Additional requirements as indicated in the specifications, may apply.

4. Preparation of Traffic Control Plans, construction signage, barrels, cones, temporary fencing, jersey barriers, maintenance of traffic control devices, and other necessary incidentals to maintain traffic shall be in accordance with the

5. The Phasing Plan shall be presented in a drawing format indicating the proposed vehicular and pedestrian traffic circulation on the street system with appropriate signs and traffic control devices located as necessary for the particular phasing interval.
   a. The Contractor’s Traffic Control Plan shall include maintenance of sidewalk, building entrances and driveways to all businesses, residential or other entities located within the construction area. It shall be the Contractor’s responsibility to adapt and modify all aspects of the Traffic Control Plan as needed to insure minimal disruption building, driveway and parking access within the construction area.
   b. The Contractor shall construct barricades, temporary sidewalks, pedestrian street crossings and handicap ramps throughout the project area with clear informational signage to direct pedestrians and vehicles into and out of all properties.
   c. Directional and warning signage shall be installed for all sidewalk paths, street crossings sufficient to insure the safe passage of pedestrians.
   d. Construction fencing and barricades shall be installed to separate pedestrians from areas of on-going work. Temporary sidewalk paths shall be suitable for handicap accessibility.
   e. Two-way traffic shall be maintained on Gorham Road throughout the construction period. During working hours, two-way traffic may be provided by single lane with flaggers. Outside working hours, two lanes in each direction shall be maintained.
   f. The Contractor may be permitted to close Gorham Road to through traffic for limited periods of time with written authorization obtained in advance from the City of South Portland. All street closures must be requested a minimum of 72 hours in advance of the closure.
   g. The Contractor will be allowed to complete paving and concrete placement operations outside of the Regular Working Hours (night paving) with written authorization obtained in advance from the City of South Portland. The Contractor will be allowed to close streets to vehicular traffic during night paving operations with written authorization obtained in advance from the City of South Portland. No additional payment will be made for traffic control during night paving.
   h. The Contractor shall provide three (3) portable changeable message signs (PCMS) to alert traffic to impending road construction and delays at least two weeks prior to the start of construction. The Contractor shall coordinate with the City for messages and placement locations. Traffic control shall comply with the requirements of the City of South Portland Ordinance Chapter 23 Streets and Sidewalks, Article IV, Section 23-48, Excavations in Public Places.
   i. Due to the location of this project, modifications or additional provisions may be needed for traffic control. The Contractor is responsible for this as
part of the Traffic Control Plan. No additional payment or costs will be made to the Contractor for this work.

1.11 MATERIALS
   A. Materials shall meet the requirements specified in the specifications. Equals shall be considered so long as the Contractor can supply sufficient product material and testing data to show that the equal meets or exceeds the performance data of the product identified on the contract documents. The Engineer will determine if a product is equal.

1.12 SURVEY
   A. Contractor will be responsible for establishing control, if necessary, for Gorham Road and Maine Mall Road Landscaping and Drainage Improvements.

   B. The City of South Portland will establish control points for the Sanitary Sewer Replacement Project. The Contractor shall be responsible for maintaining these benchmarks during construction and providing all additional survey required which shall be completed by a licensed Professional Engineer or Surveyor.

1.13 SHEETING AND BRACING
   A. Any sheeting, shoring and/or bracing required for the protection of structures and utilities and for the installation of drainage will not be paid for separately but shall be considered as incidental to the appropriate bid item. The Contractor is responsible for the design and implementation of any excavation support required. This work shall be considered a subsidiary obligation of the contract for which no specific payment will be made.

1.14 DEWATERING:
   A. Dewatering may be required for surface and below grade construction, especially in areas where the water table is just below the ground surface. Excavation, trenches and all other parts of the construction site shall be dewatered and kept free of standing water and muddy conditions as necessary for the proper execution of the work. The Contractor shall furnish, install, operate, and maintain all drains, sumps, pumps, casings, well points, and all other equipment required to properly dewater the site as specified.

   B. The Contractor shall furnish the engineer, in writing, a proposed plan for dewatering before commencing with any construction activity for which dewatering may be required. Acceptance of this plan or the waiving of the plan requirement will not relieve the Contractor of the responsibilities for completing the specified work.

   C. If groundwater must be discharged onto surface areas, waters or into the municipal storm sewer system or, the water must be pre-treated prior to disposal to removed sedimentation to meet applicable regulatory discharge requirements. The Contractor will be responsible for any testing, treatment and/or off-site disposal of the water. This work shall be undertaken by the Contractor in
accordance with applicable Federal, State and local regulatory requirements. The Contractor shall inform the Engineer before any dewatering commences.

D. All cost associated of the design and implementation of construction dewatering is incidental to excavation and pipe installation. No separate payment will be made.

1.15 **WASTE AREAS**
A. Waste and surplus material shall not be stockpiled. The disposal of waste and surplus material and slash from tree cutting shall be as outlined in Section 203.06 – Waste Areas of the Supplemental Specifications.

1.16 **OCCUPATIONAL SAFETY AND HEALTH**
A. The Contractor is hereby advised that all work to be furnished to the City shall be performed with equipment, methods, and use of personnel in conformance with the pertinent Occupational Safety and Health Act requirements of the State of Maine and with the regulations for construction as specified by the Department of Labor and Occupational Safety and Health Administration (OSHA) as currently amended.

1.17 **SETTING OF PIPES TO LINE AND GRADE**
A. Laser beam equipment shall be used for laying storm drain and/or sanitary sewer pipe. Frequent checks shall be made to assure close adherence to line and grade. Setting pipes to grade by use of “pop” levels or carpenter levels will not be permitted.

1.18 **EXTENT OF OPEN EXCAVATION**
A. The extent of excavation open at any one time shall be controlled by OSHA regulations and by existing conditions and location of work area.

1.19 **TRAFFIC OFFICERS**
A. The contractor is responsible for complying with all City of South Traffic control regulations and will be responsible for the hiring and payment of police officers and vehicles necessary for maintenance of traffic. The Police Department requires 48 hours notice for any Police detail onsite.

1.20 **LIMITATION OF OPERATIONS**
A. The Contractor shall conduct the work at all times in such a manner and in such sequence as will assure the least interference with traffic. He shall not open up work to the prejudice or detriment of work already started. The Engineer may require the Contractor to finish a section on which work is in progress before work is started on any additional sections, if finishing such section is essential to public convenience.

1.21 The Contractor shall be required to construct his roadway subbase concurrent to his trench backfilling operation if the street is not being reconstructed.

1.22 **DUST CONTROL FOR STREET**
A. The Contractor shall apply water as the primary means of dust control. Water shall be applied as needed such that dust is prevented.

1.23 **TRENCH PAVEMENT REPLACEMENT**
A. The Contractor shall be responsible for repairing any trench pavement that has experienced excess settlement, cracking or opening of pavement joints. Repair may include overlay, removal of unacceptable material and complete replacement, joint sealing or recutting pavement as required. This work may be necessary after final acceptance of the work and prior to expiration of the maintenance bond. This work shall be done at no additional cost to the City.

1.24 **CITY OF SOUTH PORTLAND’S STREET EXCAVATION ORDINANCE**
A. The Contractor is hereby advised that all work shall conform to the regulations of Chapter 23 of the South Portland Code of Ordinances, “Excavations in Public Places”, as currently amended. The Contractor shall be responsible for obtaining and completing the Street Opening Permit Application but will not be charged a fee for the Street Opening Permit for the Excavation.

1.25 **WASTE AND SALVAGE MATERIAL**
A. All waste material shall be removed from the site and the area left clean upon completion of work. Any equipment or structures damaged by the Contractor shall be repaired or replaced at no additional cost to the City. The Contractor shall notify the City of the final waste disposal location and if so located in the City shall be responsible to provide evidence of all necessary local fill permits and State permits at no extra cost to the City.

B. All cobble stones, paving stones, granite curbing and structure castings that are removed and not designated for reuse in the work shall remain the property of the City of South Portland and shall be transported and stockpiled by the Contractor at a designated location in the City of South Portland’s public works facility on O’Neil Street. The cost of loading, transporting unloading and stockpiling cobbles and stacking curbing is incidental to the contract and no separate payment will be made.

1.26 **SANITARY FACILITIES**
A. The Contractor shall provide self-contained toilet units in sufficient numbers for use of all persons involved in the work.
1.27  UNAUTHORIZED USE OF FIRE HYDRANTS
A. In conformance with the Maine State Department of Human Services, the Portland Water District requires the use of an approved air gap or reduced pressure zone back flow-device to assure the protection of the public water supply when filling tank trucks, street sweepers, jet machines or any other related equipment, or any other needs that require a connection to a public or private hydrant.
B. Private Contractors providing services to the City for street sweepers, jet machines, and lining services, are required to apply to the Portland Water District for a hydrant meter and back flow device installations. The approved applicants will pay for the installation and removal of the hydrant meter and back flow device and all water recorded by the meter.
C. The District considers any other connection or usage from a public or private hydrant as an unauthorized use of a hydrant and a theft of services. All Contractors must apply to The District for the installation of a back flow device and meter for each usage.
D. The District will operate the hydrant and install, remove and relocate the back flow device and meter as needed. A valve is provided at the connection so the applicant can control the water without operating the hydrant. Please note size of meter requested (2” or 1”). The District can be contacted at 774-5961. All cost associated with these requirements is incidental to the contract.

1.28  WORKING DRAWINGS
A. Submittals and shop drawings, defined as Working Drawings in the Standard Specifications Section 101.2 Definitions, shall be provided to the Engineer for review and approval. Requirements and timelines for working drawing review shall be in accordance with Section 01340 of the Standard Specifications.

1.29  CAD RELEASE FORM
A. The AutoCAD files will be made available to the selected contract Contractor. An Electronic Release Form will need to be filled out by the Contractor and signed before the files will be delivered.

1.30  UTILITY COORDINATION
A. The project includes construction in close proximity to water, gas, electrical and telecommunication utility service and transmission lines. The Contractor will be responsible for notifying utility representatives of the anticipated construction schedule. The Contractor will be responsible for all utility coordination, protection of existing infrastructure and any damages to existing utilities as a result of the work at no additional cost to the City.
B. The following provisions of Section 104.4.6 of the Standard Specifications shall apply, and be modified to read as follows:

104.4.6  Utility Coordination
A. Utilities within Right-of-Way (ROW): Except as provided otherwise in the Contract including subsection E - Temporary Relocations below, all Utility Facilities of all Utility Companies within the ROW will be relocated and adjusted as provided in the Contract by and at the expense of the affected Utility Company, provided, however, that the Contractor is responsible for scheduling its Work in accordance with the time allowed for utility relocation as provided in the Contract. Utility relocation Work may not proceed without authorization from the Department.

B. Contractor’s Responsibilities:

1. The Contractor must exercise every reasonable precaution to prevent damage to Utility Facilities or interruption to utility services known to or discovered by the Contractor, whether or not shown on the Plans. Such precautions must include notice to Utility Companies before undertaking Work that could damage Utility Facilities. The Contractor must provide each Utility Company with notice at least three Business Days before the date a Utility Company will have to support any pole.

2. The Contractor must take all reasonable precautions to determine the presence of underground Utility Facilities before commencing any excavation Work and must provide all affected Utility Companies with at least 72-hour prior notice of the proposed excavation. The Contractor must comply with 23 M.R.S.A. § 3360-A, entitled "Protection of Underground Facilities," Maine’s “Dig Safe” statute.

3. The Contractor must maintain initial markings (spray paint, stakes, etc.) made by the authorized representative of a Utility Company to indicate the location of underground Utility Facilities and otherwise comply with 23 M.R.S.A. § 3360-A(4).

4. The Contractor must cooperate with Utility Companies in their relocation or operations so that these operations proceed in a logical sequence, minimize duplication of Work, and avoid unnecessary interruptions to utility service.

5. If utility services are interrupted as a result of the Contractor’s Work, the Contractor must promptly notify the appropriate Utility Company and must cooperate fully in the restoration of service. If service is interrupted, repair Work will be continuous until the service is restored. No Work can be undertaken around fire hydrants until the local fire authority has approved provisions for continued services.

6. The Contractor must schedule its Work so as to provide for all Utility Company Work and to complete the Work within the Contract Time. The estimated number of workdays required by each Utility Company to perform its relocation Work, if contained in the Contract, is provided by the Utility Companies and are estimates only. Such Utility Facility relocation times assume normal Working times (Monday through Friday, 8 hours per day), and are dependent upon normal weather, normal Working conditions, and freedom from emergencies. The City is not responsible for the accuracy of these estimates. If a
Utility Company fails to perform its Work within the time frames set forth in the Contract or in the minutes of the Pre-Construction Utility Meeting, and such failure impacts the Contractor’s Critical Path, the Contractor may request a suspension of work pursuant to the provisions of the contract.

7. Any clearing and tree removal that is a part of the Contract and that must be done in areas where Utility Companies are involved must be completed by the Contractor before the Utility Company can relocate its Utility Facilities. Any clearing, cutting of single trees, or limbing required for the temporary or permanent Utility Facility location must be approved by the City. The Contractor must provide the City with notice of at least four (4) days before removing or trimming any trees or other vegetation.

8. If blasting occurs on the Project, the Contractor must provide each Utility Company having Utility Facilities that could be damaged by the blast with at least 24-hour prior notice that includes the anticipated time of the initial blast.

9. If the Contractor actually observes a Utility Company Working within the Project Limits in a manner that (a) obviously violates the MUTCD, the Contractor’s Traffic Control Plan, or an applicable OSHA requirement or commonly accepted safety practices, and (b) represents a clear and immediate risk of significant bodily injury to any person within the Project Limits, then the Contractor must notify the Resident and the Utility Company immediately.

10. At points where the Contractor’s operations are adjacent to properties of railways, telephone, gas, water and/or power companies, or are adjacent to other property, damage to which might result in considerable expense, loss or inconvenience, work shall not be commenced until all arrangements necessary for the protection thereof have been made.

11. It is anticipated that utility poles will not be relocated prior to commencement of contract work. The Contractor is advised to schedule their work to accommodate the possibility of utility pole and overhead wire obstructions. The Contractor is responsible for supporting Utility poles during construction.

12. The Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangement operations in order that these operations may progress in a reasonable, and the duplication or rearrangement work may be reduced to a minimum, and that services rendered by those parties will not be unnecessarily interrupted.

13. No person, firm, or corporation, including City forces, shall make or cause to be made any opening or excavation in a City Street, way, or public place until contact has been made with all utilities to locate any existing underground gas, water, telephone, power or other installations within said street, way or public place. When gas or other
flammable service to buildings is discontinued, the existing service line for such service shall be terminated at a point outside the building.

14. In the event of interruption to water or utility services as a result of accidental breakage, or as a result of being exposed or supported, the Contractor shall promptly notify the proper authority. He shall cooperate with the same authority in the restoration of such service as promptly as possible.

15. Water lines, gas lines, service connections, water and gas meter boxes, water and gas valve boxes, light standards, cableways, signals and all other utility appurtenances within the limits of the proposed construction are to be moved by the owners with or without expense to the Contractor, unless otherwise provided for, or as noted in the plans.

16. The Contractor shall ascertain the location of existing utilities and any other necessary information by direct inquiry at the office of the following utility owners. The completeness of this listing is not guaranteed by the City of South Portland:

<table>
<thead>
<tr>
<th>Utility Type</th>
<th>Owner Name</th>
<th>Address</th>
<th>Phone Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric</td>
<td>Central Maine Power Company</td>
<td>162 Canco Road, Portland ME 04103</td>
<td>(207) 791-1022, Attention: Gary Hawkes</td>
</tr>
<tr>
<td></td>
<td>Water District</td>
<td>225 Douglass Street, Portland ME 04101</td>
<td>(207) 774-5961, Attention: Christian Rodriguez</td>
</tr>
<tr>
<td></td>
<td>Natural Gas: Unitil, Inc.</td>
<td>325 West Road, Portsmouth, NH 04103-3586</td>
<td>(603) 765-5661, Attention: Frank Callahan</td>
</tr>
<tr>
<td></td>
<td>Petroleum</td>
<td>170 Lincoln Street, South Portland ME 04106</td>
<td>(207) 741-2404, Attention: Gary Liebermann</td>
</tr>
<tr>
<td></td>
<td>Cable TV</td>
<td>Time Warner Cable, Portland ME 04102</td>
<td>(207) 253-2324, Attention: Mark Pelletier</td>
</tr>
</tbody>
</table>

17. The Contractor agrees to indemnify, defend, and hold harmless the District from and against any and all claims or causes of action arising from any act or omission of the Contractor, the Subcontractors or their respective agents, representatives, or employees for failure to comply with this Section 104.4.6.

C. **Temporary Relocations**: The Contractor may request temporary changes of location of Utility Facilities for the Contractor's convenience. The Contractor must satisfy the City that the proposed temporary change will not interfere with the Work, the Work of Utility Companies, or the Work
of other Contractors and will not impede the free and safe flow of traffic. If acceptable to the Department, the Contractor may make its own request to the Utility Company or other party affected by such temporary changes. The expense and risk of temporary changes will be borne solely by the Contractor; no changes to compensation or time will be made.

D. **Unforeseeable Utility Relocations:** The Department may order utility adjustments in accordance with the provisions of the contract Section 4.03 Differing Subsurface or Physical Conditions.

E. **No Separate Payment:** The cost of all Work related to utility coordination is Incidental to the Contract and no separate payment will be made.

1.31 **CONTRACTOR PARKING**

A. The Contractor and his employees are not permitted to park on public streets. The contractor shall not park the parking lots of private properties abutting the site unless authorized by the property owner. The cost of parking on private property is incidental to the contractor’s mobilization and no separate payment will be made.

1.32 **SPECIAL PROVISION MAINE DOT DIVISION 400 PAVEMENTS**

The MaineDOT Special Provision Division 400 Pavements is attached in the appendices and is adopted for this project with the modifications and additions referenced in the Supplemental Specifications.

1.33 **ANTI-IDLING POLICY**

Please note: Following the Special Provisions of the Bid Document is a copy of the City of South Portland’s Anti-Idling Policy. Although this Policy is directed to City Employees regarding the use of City vehicles, we as a City, along with its citizenry, request your compliance as well. In conjunction with the City, it is the District’s goal to protect and preserve the natural environment and improve air quality in the City of South Portland. As a business partner of our City and responsible organization we will expect and greatly appreciate your assistance in this effort.
City of South Portland
Anti-Idle Policy

This policy is designed to eliminate unnecessary idling of municipal vehicles in order to reduce the cost of City operations and to reduce emissions created by City vehicles. A vehicle idling gets zero miles per gallon; unnecessary idling wastes fuels and pollutes the air. Our goal is to reduce use of petroleum products, reduce cost, protect and preserve the natural environment, and improve air quality in the City of South Portland.

It is the policy of the City of South Portland to continually improve the efficient use of vehicle fuels in an effort to reduce operating costs and emissions. City vehicles will not be permitted to idle unnecessarily. Operators of City equipment will adhere to the following standards:

A. Idling is prohibited when the ambient temperature is above 35 degrees F;
B. Five minute idle time limit when ambient temperature is 32 degrees F to 35 degrees F;
C. Ten minute idle time when ambient temperature is below 32 degrees F for diesel vehicles and any vehicle in the field to provide heat for safety of the operator. Any vehicle left running for these purposes must be within sight of the operator at all times; and
D. Five minute idle time when ambient temperature is above 80 degrees F and the operator is in the vehicle for air conditioning.

Exceptions: Due to the emergency nature of some City operations, the following exceptions will apply to this policy:

A. Emergency response vehicles when responding to an emergency;
B. Ambulances which must maintain onboard medication at a specific temperature;
C. Vehicles whose batteries may be discharged because of onboard electrical equipment (i.e. emergency lights, radar, computers etc.);
D. K-9 or Animal Control vehicles when animals are on-board;
E. Equipment being used during snow plow operations;
F. City buses when patrons are on-board; and
G. Vehicles that require the engine to run at a certain RPM when using a piece of equipment associated with the vehicle.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION

A. The work includes three individual projects in the Maine Mall area: Gorham Road Landscape and Drainage Improvements and Maine Mall Road Drainage Improvements being undertaken by the Long Creek Water Management District and Maine Mall Road Sanitary Sewer Replacement being completed by the City of South Portland. All three projects will be awarded under one contract to one Contractor. The projects are more particularly described as follows:

   B. Gorham Road Landscape and Drainage Improvements: the conversion of existing asphalt medians into micro graded, green medians for stormwater retention and treatment. The median reconstruction will include new and reset granite curbing, as well as landscaping and other streetscape improvements. The work includes, but is not limited to:

   1. The installation of under drained soil filters and bio-retention filters with sediment forbay includes:
      a. Installation of soil filter media, gravel, geotextile and under drain pipes including sediment forebay with stone check dams/berms.
      b. The installation of new outfall structures, the modification of existing drainage structures and connection to existing drainage pipes and structures.
      c. The installation of treatment area plantings and restoration and stabilization of disturbed areas.
   2. Street improvements, including the following:
      a. The removal and reuse of Type 5 Granite Curbing, as well as the installation of new Type 5 Granite Curbing.
      b. Removal of existing asphalt median, removal of overburden, installation of loam and the planting of ornamental and shade trees, feature planting areas and loam and seed. Planting shall occur in the Spring of 2014.
      c. Removal of existing asphalt median and installation of stamped concrete medians:
      d. The removal of portions of westbound left turn lanes on Gorham Road and replacement with green space medians and bio-retention filters.
      e. Landscaping, seed and mulch.
      f. Traffic control during construction.
   3. Incidental earthwork includes the removal of overburden and rough grading for the installation of loam for finished grading and the installation of planting areas and lawn areas.
4. There are four proposed bid alternates for the project. Three of the alternates involve the deletion of the three under drained soil filters (RTP-2, RTP-5 & RTP-6), associated under drains, plantings and earthwork with the installation of the outfall structures of the three areas and minor grading. The fourth bid alternate is additional landscape and median work on Westbrook Street that will be completed between Gorham Road and the I-295 interchanges. This portion of the work will be reimbursed to the District by the City of South Portland.

C. Maine Mall Road Drainage Improvements: the installation of stormwater treatment systems to improve the water quality of the runoff from the Maine Mall Road contributing areas. These installations will include under drained soil filters, bio-retention filters, Esplanade Box Filters and Stormwater Quality Filter Treatment Devices (Jellyfish). With the exception of the proposed landscaping plantings, this project is intended to be paid for by lump sum of completed treatment system and improvements and/or modifications necessary for their installation. The District wishes to complete all the proposed work but, if necessary, the District will select those treatment systems that will provide the best value and treatment for the watershed. The treatment systems are described in more detail in Appendix 2. The work includes, but is not limited to:

1. The installation of under drained soil filters and bio-retention filters and sediment forays including:
   a. Installation of soil filter media, gravel, geotextile and under drain pipe including seven sediment forebays with stone check dams/berms.
   b. The installation of new outfall structures, modification and/or removal of existing drainage structures and connections to existing drainage structures.
   c. The installation of sidewalk culverts to channel water to treatment systems (RTP-11 & RTP-12).
   d. The installation of treatment area plantings and restoration and stabilization of disturbed areas.

2. The installation of esplanade box filters including:
   a. Sawcut and removal of existing asphalt and curbing.
   b. Removal and re-installation of guard rail systems.
   c. Excavation and installation of esplanade soil filters; most of which will include the installation of a planting as part of the treatment system.
   d. The installation of an overflow and bleed down piping system and connect to an existing structure or installation of a daylight outfall.
   e. Re-installation of curbing, asphalt, sidewalk and the refurbishment of any impacted pavement striping.
   f. Restoration and stabilization of adjacent disturbed areas.
   g. Traffic control during construction.

3. The installation of Stormwater Quality Filter Treatment Devices (Jellyfish) including:
a. Sawcut and removal of existing asphalt and curbing.
b. Excavation and removal of an existing structure or stormwater piping.
c. Installation of the treatment device and connection to existing stormwater piping or installation of new drainage pipes.
d. Re-installation of curbing, asphalt and the refurbishment of any impacted pavement striping.
e. Restoration and stabilization of adjacent disturbed areas.
f. Traffic control during construction.
g. JF-3 includes the installation of additional drainage including an under drain, an area drain and curbing along an existing edge of pavement.

4. Five of the treatment systems (RTP-9, RTP-10, RTP-11, RTP-12 and JF-3) will involve installations wholly or partially on private property. All work to be completed for these systems will need to be coordinated through the District Engineer.

D. Maine Mall Road Sanitary Sewer Replacement: the removal of existing gravity and force mains and the installation of a gravity sanitary sewer to serve the properties on the west side of Maine Mall Road and force main connections form the east side of the roadway. The work includes, but is not limited to:

1. As needed, the installation of temporary bypasses pumping system(s) and/or providing for the collection of wastewater by septic haulers.
2. Sawcutting and removal of pavement.
3. Dewatering, excavation and installation of an 8” gravity sewer system and associated manholes and appurtenances.
4. Removal and the proper disposal of existing Asbestos Concrete Pipe.
5. Removal and re-installation of granite curbing.
6. Reconnection of existing gravity services and force main connections.
7. Restoration of existing pavement areas and stabilization of disturbed green areas.
8. Traffic control during construction including maintaining access to the properties along Maine Mall Road.

E. It is the desire of the District and the City to commence both the Gorham Road project and the Maine Mall Road Sanitary Sewer Replacement project at the same time. The Contractor will be allowed to impact one lane during the installation of improvements along Gorham Road and only the right turn lane on Maine Mall Road at Gorham Road during these projects. Any lane closures will need to be coordinated thorough the City of South Portland. It is anticipated that the contractor will work within the City’s easement along Maine Mall Road as work is completed away form the turn lane area.

F. The contractor will be required to complete RTP-9 and RTP-10, if these systems are selected for construction by the District, when the work for the sanitary sewer replacement project is being completed.
G. The installation of the selected treatment systems along Maine Mall Road will not be commenced until the work for Gorham Road and the Sanitary Sewer Replacement are completed. The Contractor shall complete all paving operations by October 15, 2014 with substantial completion by October 31, 2014.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

3.1 MAINTAIN EXISTING WORKS

A. Utilities:
   1. The Contractor will be responsible for all work necessary to maintain existing services for utilities including but not limited to water, natural gas, electrical and telecommunications.

B. Minimize Interference with Traffic and Properties:
   1. The Contractor shall, at all times, conduct project operations to interfere as little as possible with existing properties and vehicle and pedestrian movement. The Contractor shall develop a program, in cooperation with the District and Engineer, which shall provide for the orderly and efficient progression of construction.
   2. The Contractor shall include sequence work to limit the extent of sidewalk and property frontage disturbance at any given time.
   3. Sidewalk access to all adjacent buildings and structures shall be maintained through-out construction including but not limited to, directional signage, installation of temporary sidewalks and barricades to insure the safe passage of pedestrian traffic and to insure local business have access to all building entrances and driveways.
   4. If any driveways or building entrances must be temporally impacted or closed, the Contractor notify the abutting property owners as required in the contract. If necessary, the work shall be completed outside of regular working hours including weekend and late evenings.
   5. Handicap accessibility to all building entrances must be maintained at all times. Contractor shall construct temporary ramps and facilities as required to maintain access.
   6. Work of connecting with, cutting into, and reconstructing existing pipes or structures shall be planned to interfere with the operation of the existing adjacent properties for the shortest possible time and when the demands on the facilities best permit such interference. It may be necessary to work outside of normal working hours to minimize interference. Before starting work which will interfere with adjacent property activities, the Contractor shall do all possible preparatory work prior to the actual interference.
7. Refer to the Traffic Control Plan for additional requirements.

3.2 CONSTRUCTION SEQUENCE

A. Construction of the work will meet the following sequencing requirements:
   1. **Submittal Review:** No on-site construction will be allowed until individual submittal work items have been reviewed and approved by the Engineer. All submittals shall meet “No Exceptions Taken” or “See Remarks” to be considered complete.
   2. **Contractors Project Schedule:** The Contractor shall submit to the Engineer for review and acceptance a complete schedule of his proposed sequence of construction operations prior to commencing any work. This schedule shall include the Contractor's plans for doing the work.
   3. **Traffic Control Plan:** Prior to mobilization and the start of any work, the Contractor shall submit a traffic control plan for all aspects of pedestrian and vehicular movement (refer to special provisions).
   4. **Mobilization:** Upon approval of the project schedule, Contractor will be allowed to begin mobilization and project coordination work in coordination with the engineer, District and City at the project start. This shall include engineers office, construction signage, staging and general mobilization.

B. The Contractor shall submit to the Engineer for review and acceptance a complete schedule of his proposed sequence of construction operations prior to commencing any work. This schedule shall include the Contractor's plans for doing the work and the dates of significant street closures.

C. The Contractor must submit for approval by the Owner and the Engineer a request to deviate from the above sequence, provided he can demonstrate to the Engineer that the continuity of operations and access to local business will not be adversely affected. Requests to deviate from the sequence will be reviewed at the weekly and monthly meetings.

**END OF SECTION**
PART 1 - GENERAL

1.1 DESCRIPTION
A. The work includes construction in close proximity to existing facilities, structures both on and abutting the project site and existing utilities including but not limited to water gas, electrical and telecommunication utility services and transmission lines, fire alarm systems and oil pipelines.

B. The Contractor, under this Contract, will be responsible for coordinating construction activities with Owner, abutters and utility providers to ensure that services, facilities, and safe working conditions are maintained.

C. Any damage to existing structures, equipment, property, accepted work, or work in progress by others; as a result of the Contractor's or his subcontractor's operations shall be made good by the Contractor at no additional cost to the Owner.

1.2 COORDINATION WITH OTHERS
A. City of South Portland:
   1. Contractor shall coordinate access, egress, detours and traffic control for the project with the South Portland Police Department and Fire Department. The Contractor shall notify South Portland Police, Fire Department and Rescue Squad at least 48 hours in advance of any pre-approved street closings or detours.
   2. Refer to the Special Provisions for Traffic Control requirements. A uniformed police detail will not be required during approved street closures, unless the closure exceeds the time specified.
   3. Contractor shall coordinate all street and sidewalk closures at the weekly meetings.
   4. The Contractor shall be responsible for coordinating and maintaining public services to all public and private properties on or abutting the site.

B. Private Property:
   1. All work on private properties will be coordinated through the District Engineer.

1.3 UTILITY COORDINATION
Refer to the Supplemental Specifications 104.4.6 UTILITY COORDINATION and Specification Section 01200 PROJECT MEETINGS.

1.4 NOTIFICATION OF BUSINESSES
A. Businesses shall be notified by the Contractor sufficiently in advance of any construction affecting the business’ driveway and sidewalk
B. The Contractor shall restore access to all driveways at the end of each work day. The Contractor shall maintain access to all commercial properties at all times.

1.5 NO SEPARATE PAYMENT
   A. Unless specifically stated otherwise, the cost for the Contractor’s coordination of the project is incidental to the contract and no separate payment will be made.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION
A. Work Included: To enable orderly review during progress of the work, and to provide for systematic discussion of problems, the Engineer will conduct project meetings throughout the construction period.
B. Related work described elsewhere: The Contractor's relations with his subcontractors and materials suppliers and discussions relative thereto, are the Contractor's responsibility and are not part of project meetings content.

1.2 QUALITY ASSURANCE
A. Persons designated by the Contractor to attend and participate in the project meetings shall have all required authority to commit the Contractor to solutions agreed upon in the project meetings.

1.3 SUBMITTALS
A. Agenda items: To the maximum extent practicable, advise the Engineer at least 24 hours in advance of project meetings regarding all items to be added to the agenda.
B. Minutes: The Engineer will compile minutes of each project meeting and will furnish a copy to the Contractor. The Contractor may make and distribute such other copies as he wishes.
C. Contractor to submit a written Monthly Progress Report to the Engineer at least two days prior to the Monthly Construction Meeting. Report shall include, at a minimum, the following:
1. Copy of updated project schedule.
2. Work completed in previous month.
3. Work to be completed during upcoming month.
4. Discussion of overall project schedule.

PART 2 - PRODUCTS

(No products are required in this Section.)

PART 3 - EXECUTION

3.1 MEETING SCHEDULE
A. Except as noted below for Preconstruction Meeting, project meetings will be held weekly. Coordinate as necessary to establish mutually acceptable schedule for meetings.
3.2 MEETING LOCATION
A. Meetings will be held onsite at project location.

3.3 PRECONSTRUCTION MEETING
A. Preconstruction meeting will be scheduled within ten (10) days after the Effective Date of the Agreement, but before the Contractor starts work at the site. Provide attendance by authorized representatives of the Contractor and all major subcontractors. The Engineer will advise other interested parties and request their attendance.

B. Minimum agenda: Distribute data on, and discuss:
   1. Identification of key project personnel for Owner, Engineer, Contractor, funding/regulatory Agencies.
   2. Responsibilities of Owner, Engineer, Resident Project Representative, Contractor.
   3. Channels and procedures for communications.
   4. Construction schedule, including sequence of critical work.
   5. Easements, permits.
   6. Contract Documents, including distribution of required copies of original documents and revisions.
   7. Processing of Shop Drawings and other data submitted to the Engineer for review.
   8. Processing of field decisions and Change Orders.
   9. Rules and regulations governing performance of the Work, including funding/regulatory Agency requirements.
   11. Utility Coordination.
       a. A Utility Coordination Meeting shall be scheduled immediately following the Pre-Construction Meeting Agenda items.
       b. The Utility Coordination Meeting shall be conducted as specified in the Special Provisions.

3.4 PROJECT MEETINGS
A. Attendance: To the maximum extent practicable, assign the same person or persons to represent the Contractor at project meetings throughout progress of the Work. The Superintendent shall attend. Subcontractors, materials suppliers, and others may be invited to attend those project meetings in which their aspects of the Work are involved.

B. Minimum agenda:
   1. Review, revise as necessary, and approved minutes of previous meeting.
   2. Review progress of the Work since last meeting.
   3. Review schedule of work to be accomplished prior to next meeting.
   4. Discuss monthly partial payment request.
   5. Field Observations.
6. Anticipated traffic delays or related issues.
7. Review Status of submittals for approval.
9. Identify problems which impede planned progress.
10. Develop corrective measures and procedures to regain planned schedule.
11. Complete other current business.

3.5 NO SEPARATE PAYMENT
A. Unless specifically stated otherwise, all of the Contractor’s costs for meetings are incidental to the contract and no separate payment will be made.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION
A. Work Included: Within ten (10) days after the effective date of the Agreement between Owner and Contractor submit to the Engineer an estimated progress schedule as specified herein.

B. The Contractor shall plan the Work, including the activity of Subcontractors, vendors, and suppliers, such that all Work will be performed in Substantial Conformity with its Schedule of Work. The Schedule must include sufficient time for the Owner to perform its functions as indicated the Contract, including QA inspection and testing, and review of submittals.

C. Content of Schedules:
   1. At a minimum the schedule of work shall show:
      a. A bar chart of major work activities, milestones durations and timelines.
      b. Milestones to be included in the schedule include:
         1) Start of Work.
         2) Beginning and ending of planned work suspensions.
         3) Dates of lane or road closures.
         4) Proposed sequencing and dates of construction for storm drain installation and street improvements.
         5) Dates of closure of driveways of abutting residences and business.
      c. Shop Drawings, Project Data and Samples:
         1) Submittal dates.
         2) Dates reviewed copies will be required.
      d. Decision dates for:
         1) Selection of materials.
      e. Estimated product procurement and delivery dates.

2. Identify work of separate phases and logically grouped activities. Phases should include the following areas at a minimum:
   a. Gorham Road from Maine Mall Road to Philbrook/Foden Road
   b. Gorham Road from Philbrook/Foden Road to Clarks Pond Pkwy
   c. Gorham Road from Clarks Pond Pkwy to Western Avenue
   d. Western Avenue from Gorham Road to I295

3. Show the projected percentage of completion for each item of work as of the first day of each month.

4. Provide separate sub-schedules, if requested by the Engineer, showing submittals, review times, procurement schedules, and delivery dates.

D. Updating:
   1. Show all changes occurring since previous submission.
2. Indicate progress of each activity, show completion dates.

3. Include:
   a. Major changes in scope.
   b. Activities modified since previous updating.
   c. Revised projections due to changes.
   d. Other identifiable changes.

4. Provide narrative report, including:
   a. Discussion of problem areas, including current and anticipated delay factors.
   b. Corrective action taken, or proposed.
   c. Description of revisions that may affect schedules.

1.2 SUBMITTALS
   A. Submit updated schedules with each progress payment request.
   B. Submit 4 copies of initial and updated schedules to the Engineer.

1.3 PAYMENT SCHEDULE
   A. Provide a projected payment schedule that estimates the value of the Work as scheduled, including requests for payment of Delivered Materials. The Projected Payment Schedule must be in accordance with the Contractor's Schedule of Work and prices submitted by the Contractor's Bid. The Contractor shall revise the Projected Payment Schedule to reflect the actual progress of the Work.

1.4 SCHEDULE REVISIONS
   A. The progress of the work shall be compared against the schedule of work at each progress meeting. If the Owner determines that the Contractor’s actual progress is not in substantial conformity with the schedule of work, then the Contractor shall either increase project resources to get back on schedule or submit a revised schedule of work and projected payment schedule to the Owner.

1.5 NO SEPARATE PAYMENT
   A. Unless expressly provided otherwise, the cost for providing a Schedule of Work, a Projected Payment Schedule, and all revisions and updates are incidental to the contract.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION
A. Work Included:
   1. Submit to the Engineer, Shop Drawings, Manufacturers' Certificates, Project Data, and Samples required by this section and the Supplemental Specification Sections.

B. Related Work Specified Elsewhere:
   2. Construction Schedules: Section 01310.
   2. General Conditions: Section 00700.

1.2 SHOP DRAWINGS
A. Shop Drawings are required for identified elements of the work. Each shop drawing shall be assigned a sequential number for purposes of easy identification, and shall retain its assigned number, with appropriate subscript, on required resubmissions.

B. Shop Drawings are generally defined as all fabrication drawings, diagrams, brochures, schedules, bills of material, manufacturers data, spare parts lists, and other data prepared by the Contractor, his subcontractors, suppliers, or manufacturers which illustrate the manufacturer, fabrication, construction, and installation of the work, or a portion thereof.

C. The Contractor shall submit to the Engineer a minimum of six (6) copies of Shop Drawings and approved data. The Engineer will retain three (3) copies (for Owner's, Engineer's and Field Representative's files) and return three (3) copies to the Contractor for distribution to subcontractors, suppliers and manufacturers. If the Contractor requires more than three (3) then the number of copies submitted shall be adjusted accordingly. The only exception to the above is that all shop drawings which incorporate blue line type drawings shall be submitted with only one good quality reproducible. The Engineer will return the one marked up reproducible to the Contractor.

D. The Contractor shall provide a copy of the completed Submittal Certification Form (copy provided for Contractor's use at the end of this Specification Section) which shall be attached to every copy of each shop drawing. Shop Drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the drawing. When it is customary to do so, when the dimensions are of particular importance, or when so specified, the drawings shall be certified by the manufacturer or fabricator as correct for the work.

E. Shop Drawings shall be submitted as a complete package by specification section, unless otherwise reviewed and approved by the Engineer. It is the intent that all information, materials and samples associated with each specification section be
included as a single submittal for the Engineer's review. Any deviation from this requirement shall be requested in writing prior to any associated submittal.

F. The Contractor shall be responsible for the prompt and timely submittal of all shop and working drawings so that there shall be no delay to the work due to the absence of such drawings.

G. No material shall be purchased or fabricated especially for the Contract until the required shop and working drawings have been submitted as hereinabove provided and reviewed for conformance to the Contract requirements.

H. Until the necessary review has been made, the Contractor shall not proceed with any portion of the work, the design or details of which are dependent upon the design or details of work, materials, equipment or other features for which review is required.

I. All shop and working drawings shall be submitted to the Engineer by and/or through the Contractor, who shall be responsible for obtaining shop and working drawings from his subcontractors and returning reviewed drawings to them. Shop drawings shall be of standardized sizes to enable the Owner to maintain a permanent record of the submissions. Approved standard sizes shall be: (a) 24 inches by 36 inches; (b) 11 inches by 17 inches, and (c) 11 inches by 8-1/2 inches. Provision shall be made in preparing the shop drawings to provide a binding margin on the left hand side of the sheet. Shop drawings submitted other than as specified herein may be returned for resubmittal without being reviewed.

J. Only drawings which have been checked and corrected by the fabricator should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the Drawings and Specifications in all respects. All drawings which are correct shall be marked with the date, checker's name, and indication of the Contractor's approval, and then shall be submitted to the Engineer.

K. If a shop drawing shows any deviation from the Contract requirements, the Contractor shall make specific mention of the deviations in his letter of transmittal.

L. Should the Contractor submit equipment that requires modifications to the structures, piping, layout, etc., detailed on the Drawings, he shall also submit details of the proposed modifications. If such modifications are accepted, the Contractor, at no additional cost to the Owner, shall do all work necessary to make such modifications.

M. A maximum of two submissions of each Shop Drawing will be reviewed, checked, and commented upon without charge to the Contractor. Any additional submissions which are ordered by the Engineer to fulfill the stipulations of the Drawings and Specifications, and which are required by virtue of the Contractor's neglect or failure to comply with the requirements of the Drawings and Specifications, or to make those modifications and/or corrections ordered by the Engineer in the review of the first two submissions of each Shop Drawing, will be reviewed and checked as deemed necessary by the Engineer, and the cost of such review and checking, as determined by the Owner, and based upon Engineer's documentation of time and rates established for additional services in the Owner-Engineer Agreement for this Project, may be deducted from the Contractor.
to make all modifications and/or corrections as may be required by the Engineer in an accurate, complete, and timely fashion.

1.3 SAMPLES
   A. The Contractor shall submit samples when requested by the Engineer to establish conformance with the specifications, and as necessary to define color selections available.

1.4 SUBMISSION REQUIREMENTS
   A. Accompany submittals with transmittal letter, containing:
      1. Date.
      2. Project title and number.
      3. Contractor's name and address.
      4. The number of each Shop Drawing, Project Data and Sample submitted.
      6. Other pertinent data.
   B. A completed Submittal Certification Form shall be attached to each copy of each shop drawing and must include:
      1. Identification of deviations from Contract Documents.
      2. Contractor's stamp, initialed or signed, certifying review of the submittal, verification of field measurements and compliance with Contract Documents.
      3. Where specified or when requested by the Engineer, manufacturer's certification that equipment, accessories and shop painting meet or exceed the Specification requirements.
      4. Where specified, manufacturer's guarantee.

1.5 RESUBMISSION REQUIREMENTS
   A. Revise initial drawings as required and resubmit as specified for initial submittal.
   B. Indicate on drawings any changes which have been made other than those required by Engineer.

1.6 ENGINEER'S REVIEW
   A. The review of shop and working drawings hereunder will be general only, and nothing contained in this specification shall relieve, diminish or alter in any respect the responsibilities of the Contractor under the Contract Documents and in particular, the specific responsibility of the Contractor for details of design and dimensions necessary for proper fitting and construction of the work as required by the Contract and for achieving the result and performance specified thereunder.

1.7 SCHEDULE OF SUBMITTAL ITEMS
   Provide submittals for the following items:
   A. Aggregates:
      1. Provide Submittals for the following items:
         a. Item 203.24 Granular Borrow.
         b. Item 206.07 Aggregate Base Course.
         c. Item 304.1 Aggregate Subbase Course.
         d. Item 703.22 Underdrain Backfill Material
e. 3/8” Pea Gravel as specified in Section 604.1 of the Supplemental Specifications.

2. Submit test results (including gradation analysis) and source location for all borrow material to be used at least 10 working days prior to its use on the site. Contractor shall identify and provide access to borrow sites.

3. Submit moisture density curve for each type of soil (on site or borrow material) to be used for embankment construction or fill beneath structures or pavement.

B. Drainage Structures:
   1. Provide Submittals for the following items:
      a. Items 604.2412 and 604.2430, Nyloplast Catch Basins.

2. Submit shop drawing for precast catch basins and all precast concrete items prior to fabrication.

3. Identify components to be used and elevations of top of precast sections, base and pipe inverts, location of pipe penetrations, steps, for each structure.

4. Provide manufacturers' product data for frames, covers, grates, precast items, manhole sleeves, joint sealants and frost barrier.

C. Hot Mix Asphalt:
   1. Provide Submittals for the following items:
      a. Items 403.208 Hot Mix Asphalt 12.0mm.
      b. Item 403.209 Hot Mix Asphalt 9.5mm.
      c. Item 403.11 Hot Mix Asphalt (shim).

2. The Contractor shall submit, for approval, a current job mix formula (JMF).

3. For a Superpave design, a current Maine Department of Transportation (MaineDOT)-approved Superpave JMF shall be submitted.

4. The JMFs shall be reviewed and approved by an independent testing agency prior to submittal.

5. The job mix formula shall state the source, gradation, and percentage of each portion of the aggregate and filler, if required. It shall state the name of the refiner and the supplier of the particular bituminous material to be used and the plant location.

D. Pipe:
   1. Provide Submittals for the following items:
      a. Item 603.159 Hi Density Polyethylene Pipe.
      b. Item 706.09 Perforated PVC Pipe.
      c. Item 603.1311 PVC sanitary pipe.

2. Provide manufacturers' product data for all pipes and fittings and accessories confirming products meet specifications.

E. Concrete:
   1. Provide Submittals for the following item.
      a. Item 604.2403 Concrete for Forebay
      b. Item 502.35 Stamped Concrete Median.
      c. Item 609.21 Concrete Slipfrom Curb.

2. Submit a concrete mix design certification indicating compliance with the specifications as specified in Section 701 of the Standard Specifications for Structural Concrete Related Materials.
F. Loam Seed and Mulch:
   1. Provide Submittals for the following item:
      a. Item 615.07 Loam Seed and Mulch.
   2. Submit seed vendor's certified statement for each grass seed mixture required, stating botanical and common name, percentage by weight, and percentages of purity, germination, and weed seed for each grass seed species.

G. Landscaping:
   1. Provide Submittals for the following items:
      a. Item 621 Landscape Plants.
   2. Submit plant list identifying number of plants botanical and common name and size.

H. Pavement Marking:
   1. Provide submittals for the following item:
      a. Item 627.7 Pavement Marking.
   2. Submit manufacturers data for MDOT paint 708.03.

I. Geotextile Fabric:
   1. Provide submittals for the following items:
      a. Item 620 Geotextiles:
         i. Submit Manufacturers product data for geotextile fabrics.
      b. Geotextile fabric for Erosion Control (Section 722.03) installation:
         i. Submit Manufacturers product data for geotextile fabrics.
      c. Geotextile for separation membrane as specified in Section 604 of the Supplemental Specifications.
         i. Submit Manufacturers product data for geotextile fabrics.

J. Soil Media:
   1. Provide submittals for the following items:
      a. Under drained soil filter media as specified in Section 604 of the Supplemental Specifications.
      b. Bioretention soil filter media as specified in Section 604 of the Supplemental Specifications.
   2. Perform sieve analysis of Perform a sieve analysis conforming to ASTM C 136 (standard test method for sieve analysis of fine and coarse aggregates, 1996a) on each type of the sample material. The resulting soil filter media mixture must have 8% to 12% by weight passing the #200 sieve, a clay content of less than 2% (determined by hydrometer grain size analysis) and have 10% dry weight of organic matter.
   3. Perform a permeability test on the soil filter media conforming to ASTM D 2434 with the mixture compacted to 90-92% of maximum dry density based on ASTM D 698.
   4. Perform bioretention media tests.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION
A. Extent of Work:
   1. Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the Works indicated in the Bid Form and as specified herein and in other provisions of the Contract Documents.
   2. Mobilization/demobilization and bonds and insurances shall be separate line items that apply to the whole project and are to be included on the schedule of values for the District’s work. A maximum of 2% shall be allowed for bonds and Insurances. A maximum of 2% shall be allowed for mobilization and demobilization. A maximum of 5% shall be allowed for general conditions.
   3. The schedule of values shall include an item for the hourly cost of the Residents oversight of work performed outside of Regular Working Hours. This value will be deducted from the Contractors pay requisitions.
B. Related Work Specified Elsewhere:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, and Sections of these Specifications.
   2. Schedule of values is required under the General Conditions.
   3. Schedule of values is required to be compatible with applications for progress payment.

1.2 QUALITY ASSURANCE
A. Use required means to assure arithmetical accuracy of the sums described.
B. When so required by the Engineer, provide copies of the subcontracts or other data acceptable to the Engineer substantiating the sums described.

1.3 SUBMITTALS
A. Prior to first application for payment, submit a proposed schedule of values to the Engineer.
   1. Secure the Engineer's approval of the schedule of values prior to submitting first application for payment.

END OF SECTION
SECTION 01380

CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.1 DESCRIPTION
   A. Work Included:
      1. Pre-Construction Record: Contractor shall utilize digital photographs and
         video to obtain a visual record of the project area; copies of same shall be
         given to the Engineer and Owner.
      2. Notify Engineer at least three (3) working days prior to photographing or
         videoing the project area so Engineer may, at his option, observe.

1.2 QUALITY
   A. Pre-Construction Record: Quality shall be such that the condition of existing
      pavement, curbing, driveway entrances, sidewalks, etc. can be readily determined.

1.3 SUBMITTAL OF PRINTS
   A. Pre-Construction Record: Submit hard copy prints and electronic files on CD
      ROM, and video electronic files on DVD to the Engineer and Owner prior to any
      construction work.
   B. The quality of the photos and video are subject to approval by the Engineer prior
      to the start of construction work in the areas shown by the photos.

END OF SECTION
SECTION 01400

QUALITY CONTROL

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED
A. General Quality Control.
B. Workmanship.
C. Manufacturer's Data and Certificates.
D. Testing Laboratory Services.

1.2 RELATED REQUIREMENTS
A. Section 00700 - General Conditions: Inspection and testing required by governing authorities.
B. Section 01340 – Submittals.
C. Standard and Supplemental Specifications Section 203 - Excavation and Embankment.
D. Standard and Supplemental Specifications Section 304 - Aggregate Base and Subbase Course.
E. Standard and Supplemental Specifications Section 403 - Hot Bituminous Pavement.
F. Standard and Supplemental Specifications Section 502 - Structural Concrete.
G. Standard and Supplemental Specifications Section 603 - Pipes Culverts and Storm Drains.

1.3 QUALITY CONTROL
A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
B. Particular attention to compaction shall be paid during backfilling operation. Strict adherence to Section 203.11 and 304.04 and 603.08 of the Maine Department of Transportation (MaineDOT) Standard Specifications will be required for all subgrade preparation, subbase/base installation and trench backfill operations.

1.4 WORKMANSHIP
A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
B. Perform work by persons qualified to produce workmanship of specified quality.
C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.
1.5 **MANUFACTURERS' INSTRUCTIONS**
A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

1.6 **MANUFACTURERS' CERTIFICATES**
A. When required by the Section 01340 or individual Specifications Section, submit manufacturer's certificate that products meet or exceed specified requirements.

1.7 **TESTING LABORATORY SERVICES**
A. Owner will employ and pay for services of an Independent Testing Laboratory to perform inspections, tests, and other services wherever an Independent Testing Laboratory is required, unless otherwise indicated.
B. Services will be performed in accordance with requirements of governing authorities and with specified standards.
C. Reports will present observations and test results and indicate compliance or non-compliance with specified standards and with Contract Documents. Independent Testing Laboratory will submit one copy of each report directly to each of the following: Engineer, Resident Project Representative, and Contractor. Reports will be mailed within 5 days of obtaining test results. If test results indicate deficiencies, Independent Testing Laboratory shall telephone or FAX results to Engineer, Resident Project Representative and Contractor within 24 hours.
D. Contractor shall cooperate with Independent Testing Laboratory personnel; furnish tools, samples of materials, design mix, equipment, storage and assistance as requested.
E. Contractor shall coordinate all testing work and shall notify Engineer and Independent Testing Laboratory at least 24 hours prior to performing work requiring testing services. If scheduled tests or sampling cannot be performed because the work is not ready as scheduled, testing costs associated with the delay will be determined by Engineer and invoiced by Owner to Contractor. If unpaid after 60 days, the invoice amount will be deducted from the Contract Price. If adequate notice is not provided, Contractor shall suspend work on that portion of the Project until testing can be performed. Such suspension will not be grounds for a claim against the Owner for delay, nor will it be an acceptable basis for an extension of time.
F. Payment for Independent Testing Laboratory services shall be as follows:
   1. **General:** Where testing is the Owner's responsibility, payment will be made as stated below unless other requirements are given in Specification Sections. Testing which is the responsibility of the Contractor will be considered an incidental item unless otherwise indicated.
   2. **Initial Testing:** Owner will pay for initial tests.
   3. **Retesting:** Costs of retesting due to non-compliance will be paid by Owner. The cost of retesting will be determined by Engineer and Owner will invoice Contractor for this cost. If unpaid after 60 days, the invoice amount will be deducted from the Contract Price.
4. **Contractor's Convenience Testing:** Inspections and tests performed for Contractor's convenience will be paid for by Contractor.

**PART 2 - PRODUCTS**

Not Used

**PART 3 - EXECUTION**

3.1 **TESTING**

A. **Soil Backfill:** Compaction Testing shall be completed as specified in the Supplemental Specifications Section 654 SOIL BACKFILL AND COMPACTION TESTING.

B. **Hot Bituminous Pavements:** Hot Bituminous Pavements shall be tested in accordance with the Standard Specifications Supplemental Provision Division 400 dated March 10, 2010 Section 401 HOT MIX ASPHALT using Quality Control Method B.

C. **Cast In Place Concrete:**

1. Testing Agency Qualifications: The owner will retain an independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.

   a. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.

2. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements.

3. Testing Frequency: Obtain at least 1 composite sample for each 50 cu. Yd or fraction thereof of each concrete mix placed each day.

   a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

4. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.

5. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.

6. Concrete Temperature: ASTM C 1064; one test for each composite sample.

7. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of four standard cylinder specimens for each composite sample.
8. Compressive-Strength Tests: ASTM C 39/C 39M; test 1 specimen at 7 days and 2 specimens at 28 days and one specimen held in reserve for later testing if required.
   a. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at 28 days.
9. Strength of each concrete mix will be satisfactory if average of any 3 consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
10. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
11. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
12. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer.
13. Remove and replace concrete pavement where test results indicate that it does not comply with specified requirements.
14. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

END OF SECTION
SECTION 101

CONTRACT INTERPRETATION

This section contains abbreviations, definitions, and general rules of interpretation found in the Standard Specifications. The Long Creek Watershed Management District and the City of South Portland have adopted the Standard General Conditions of the Construction Contract as prepared by the Engineers Joint Contract Documents Committee (EJCDC C-700), supplemental conditions and other requirements found in the Bidding and Contract Requirements and Specifications. It is the intent of the District to replace this section of the Standard Specifications with these documents. Where any ambiguity, error, omission, conflict, or discrepancy (“ambiguity”, etc.) related to the Contract Documents exists, refer to the Special Provisions for the order of priority of the documents.

The following provisions of Section 101 of the Standard Specifications shall apply with the following additions and modifications:

101.2 Definitions

Chief Engineer: The definition in the Standard Specifications shall be deleted and replaced with the following. Chief Engineer shall mean the District Engineer acting directly or through his or her duly authorized representatives, who are responsible for the design of the project. For the purpose of the Maine Mall Sanitary Sewer Replacement Project, the Chief Engineer shall mean the Director of Water Resources Protection or Director of Public Works, City of South Portland, Maine, acting directly or through his or her duly authorized representatives, who are responsible for the design of the project.

Closeout Documentation: The definition in the Standard Specifications shall be deleted and replaced with the following. “All documentation required by the bid documents, including but not limited to the Standard General Conditions of the Construction Contract EJCDC C-700, supplemental conditions and special provisions.”

Commissioner: The definition in the Standard Specifications shall be deleted and replaced with the following: Commissioner shall mean the District Engineer. For the purpose of the Maine Mall Sanitary Sewer Replacement Project, the Commissioner shall mean the Director of Water Resources Protection or Director of Public Works, City of South Portland, Maine.

Department: The definition in the Standard Specifications shall be deleted and replaced with the following: Department shall mean the Long Creek Water Management District acting through the District Engineer or through his duly authorized representative. For the purpose of the Maine Mall Sanitary Sewer Replacement Project, the Department shall mean the Water Resources Protection Department or Public Works Department, City of South Portland, Maine acting through its Director or through his duly authorized representative.
SECTION 202

REMOVING STRUCTURES AND OBSTRUCTIONS

The provisions of Section 202 of the Standard Specifications shall apply with the following additions and modifications:

202.03 Removing Existing Superstructure, Structural Concrete, Railings, Curbs, Sidewalks and Bridges

This section is modified by adding the following sentence to the first paragraph: All granite curbing removed and not reused in construction of the proposed project shall be delivered to the City of South Portland stockyard as directed.

202.05 Removing Manholes or Catch Basins

The first sentence of this subsection shall be modified by deleting “600 mm [2 feet] below subgrade” and substituting the following: “4 feet below finish grade or deeper as required for new construction.”

Unless otherwise indicated on the plans, all manholes and catch basins which are not connected to a new pipe or an existing pipe to remain are to be completely removed.

The void formed from the removal of the manholes is to be backfilled with compacted gravel borrow material and all excavated areas are to be repaired with the trench repair section shown on the pipe trench details. Full depth trench repair including granular backfill, aggregate subbase and base course, hot bituminous pavement as shown on the trench repair details, shall be incidental to this item.

202.06 Removing Bituminous Concrete Pavement

Prior to the removal of bituminous pavement the limit of the removal area shall be saw cut to the appropriate depth for this given location where new pavement will be matched to existing pavement. Existing bituminous asphalt or Portland Cement Concrete pavement areas to be totally removed shall be saw cut to the full existing pavement depth.

The cutting equipment used shall be exclusively designed for the purpose. It shall be capable of establishing a straight and vertical cut and to minimize chipping of the edge of the existing surface to remain.

Bituminous pavement removed may be salvaged for re-use as specified in the Supplemental Specifications Section 203.041. Pavement salvage is incidental to the removal and excavation items and no separate payment will be made for salvaging pavement.
202.063 Removal or Reset Sidewalk Surface Hardware and Signage

This item includes removing, resetting and adjusting to finished grade all surface structures and signage installed in sidewalks to be reconstructed or in the areas on construction disturbance. This work includes removing, modifying and resetting structures including but not limited to electrical or telecommunication pull box covers, traffic control boxes and covers, fire alarm boxes and pedestals, posts, benches, signs etc. All items designated to be removed shall be removed and disposed of by the contractor. All other items, including items that may not appear on the plans shall be adjusted to grade. This work will be paid as a Lump Sum item for the entire project under Pay Item 202.2111 “Removal and/or Reset Sidewalk Surface Hardware” Backfilling of items removed with granular borrow is incidental to this item and no separate payment will be made.

202.064 Removal of Sanitary Gravity or Force Mains

This item includes removing and disposing of the existing gravity and force mains being replaced by the new gravity sanitary sewer of the Maine Mall Road Gravity Sewer Replacement Project. This work is considered incidental to the installation of the new sanitary line and no separate payment will be made. All materials removed by the Contractor shall be properly disposed of in accordance with the City of South Portland, State and Federal requirements.

202.07 Method of Measurement

Removal of base and subbase material in the roadway for the Gorham Road turn lanes shall be paid per 203.10 of Section 203. Removal and replacement of pavement, base and subbase material for resetting curbs and installation of stormwater treatment systems is incidental to the construction of the treatment and no separate payment will be made.

Saw cutting pavement is incidental to the contract and shall not require measurement.

Note: All removal of existing materials and structures for the Maine Mall Road Drainage Improvements will be incidental to the installation of the treatment system. No separate payment will be made.
202.08 **Basis of Payment**

The accepted quantity of removal of existing bituminous pavement surface shall be at the contract square yard price which price will be full compensation for removal of the pavement surface by a milling operation or other method, dust control, hauling, placement of a bituminous leveling course, temporary removal of detrimental objects and all tools, equipment, labor and other materials necessary to satisfactorily complete the work. The grinding of existing pavement for creating butt joints along trench cap edges shall be included in the pipe items.

The accepted quantity of removal of existing manholes or structures shall be at the contract unit price each which price will be full compensation for excavation, removal of the structure, disposing of the structure and all tools, equipment, labor and other materials necessary to satisfactorily complete the work.

Bituminous pavement removed may be salvaged for re-use as specified in the Supplemental Specifications Section 203.041. Pavement salvage is incidental to the removal and excavation items and no separate payment will be made for salvaged pavement.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>202.15 Removing Existing Manhole or Structure</td>
<td>Each</td>
</tr>
<tr>
<td>202.20 Removal of Bituminous Concrete Pavement, Medians</td>
<td>Square Yard</td>
</tr>
<tr>
<td>202.202 Removing Pavement Surface, Roadway</td>
<td>Square Yard</td>
</tr>
</tbody>
</table>
SECTION 203

EXCAVATION AND EMBANKMENT

The provisions of Section 203 of the Standard Specifications shall apply with the following additions and changes:

Common excavation shall include muck removal, which shall consist of excavating and disposing of saturated or unsaturated mixtures of soils and organic matter not suitable for embankment foundation material regardless of moisture content.

203.04 General

The Contractor shall excavate rock if encountered to the lines and grades indicated on the drawings, shall dispose of the excavated material, and shall furnish acceptable material for backfill in place of the excavated rock, if required.

In general, rock in pipe trenches shall be excavated so as to be not less than six inches (6”) from the pipe after it has been laid. If needed, before the pipe is laid, the trench shall be backfilled to the established trench profile with thoroughly compacted, suitable material or, when so specified or indicated on the drawings, with the same material as that required for bedding the pipe, furnished and placed at no additional cost to the City.

203.041 Salvage of Existing Bituminous Pavement

This subsection is revised to read as follows:

Existing bituminous pavement material shall not be deposited in any waste area or be placed below subgrade in any embankment.

Methods of utilization may be any of the following:

1. Used in the upper 150mm [6 in] of travelways and full depth in driveways as aggregate base or subbase provided the material contains no particles greater than 75 mm [3 inch] in any dimension.
   (a) Placing, shaping, compacting, stabilizing, and surface tolerance shall be in accordance with applicable provisions of Section 304 - Aggregate Base and Subbase Course, except that the material shall be placed in a layer of uniform thickness not to exceed 150 mm [6 in]. No more than one layer may be used.
   (b) If the material is blended, it must be blended with an aggregate that meets the gradation and quality requirements for Aggregate Subbase Course, Gravel - Type D noted in Subsection 703.06.

2. Recycled in place as Full Depth Recycled Pavement in accordance with Section 307 of the Standard Specifications.
3. Recycled as Stabilized Base or Plant Mix Pavement if so designated in the contract.

4. Stockpiled at commercial or approved sites for commercial or MDOT use.

5. Other approved methods proposed by the Contractor, which will assure proper use of the existing bituminous pavement.

The cost of salvaging bituminous material will be included for payment under the applicable pay item, with no additional allowances made, which will be full compensation for removing, processing, temporarily stockpiling, and rehandling, if necessary, and utilizing the material in the roadway or parking lots or stockpiling at an approved site as described above. The material will also be measured and paid for under the applicable Pay Item for which it is reused.

203.06 Waste Area

This subsection is revised to read as follows:

1. **Surplus Earth and Rock Excavation:** The disposal of surplus earth and rock unacceptable as trench backfill materials and excavated rock shall be the responsibility of the Contractor.

   The Contractor shall be responsible to provide evidence of a fill permit if the disposal location is in the City of Portland.

2. **Cobblestones, bricks and granite curbing removed** shall remain the property of the City and shall be disposed of, after removing all excess granular materials there from, at a site to be determined at the time of construction and as directed by the Engineer. Bricks shall be palletized and curbing shall be stockpiled in an organized manner at the approved location.

203.18 Method of Measurement

Excavations done by the contractor to confirm locations of existing utilities shall be incidental to work to the contract except as provided for in the Maine Mall Road Sanitary Sewer Replacement Project; excavation for the sanitary project shall be paid per Section 801, Test Pits.

Removal and re-installation of roadway gravel and re-paving for the removal and resetting of curbs and installation of treatment devices will be incidental to construction of the device.

Excavation and removal of roadway gravel for the modification of the lane turn lanes on Gorham Road shall be measured by cubic yard.
Common borrow to be supplied for Gorham Road shall be measured by cubic yard.

In the fifth paragraph of this section, the sentence stating, “when measured in vehicles, the quantity for payment shall be 80 percent of the quantity determined for earth”. Removal and re-installation of roadway gravel and re-paving for the removal and resetting of curbs and installation of treatment devices will be incidental to construction of the device.

Common excavation will be measured by the cubic yard measured in its original position. The common excavation item is intended for excavations as ordered by the Resident that is not incidental to other items. Excavation to construct new work including but not limited to construction and installation of treatment systems is incidental to the new construction.

Note: All excavations and removal of excess material or materials necessary for the Maine Mall Road Drainage Improvements will be incidental to the installation of the treatment system. No separate payment will be made.

203.19 Basis of Payment

This subsection shall be amended by the addition of the following paragraphs:

Incidental common excavation for Gorham Road includes removal of excess material for rough grading of the site prior installation of the stormwater treatment systems and prior to loam installation and the removal of any material necessary for the installation of common borrow as indicated in the construction plans. Incidental Excavation for Gorham Road will be paid for lump sum.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>203.10 Remove Road Gravel</td>
<td>Cubic Yard</td>
</tr>
<tr>
<td>203.20 *Common Excavation</td>
<td>Cubic Yard</td>
</tr>
<tr>
<td>203.200 Incidental Common Excavation</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>203.24 Common Borrow</td>
<td>Cubic Yard</td>
</tr>
<tr>
<td>203.25 *Granular Borrow</td>
<td>Cubic Yard</td>
</tr>
<tr>
<td>203.35 *Crushed Stone (703.11 Type &quot;A&quot;)</td>
<td>Cubic Yard</td>
</tr>
</tbody>
</table>

* Indeterminate amount not relating to a specific pay item.
SECTION 304

AGGREGATE BASE AND SUBBASE COURSE

The provisions of Section 304 of the Standard Specifications shall apply with the following additions and modifications:

304.02 Aggregate

This item is to furnish and install additional aggregate material required for full depth reconstruction of streets, bituminous driveway aprons and where the aggregate is not incidental to other items.

Sources of Aggregate and preliminary test results shall be submitted ten working days prior to any placement of material on the job. Failure of these preliminary tests will be grounds for rejection of material from that source. Aggregates will be tested on the job and shall meet these specifications as the material is incorporated into the work.

The maximum size stone for Aggregate Subbase Type D shall be 3”.

The Contractor option to substitute Type E Aggregate Subbase for Type D below 9” is not allowed on this project.

304.7 Basis of Payment

The cost of the laboratory tests which fail to meet the specifications shall be the responsibility of the Contractor.

The raking out of any large stones from the aggregate base course layer shall be incidental to the contract.

Aggregate base and subbase for restoration of pavement after installation of new curbing shall be incidental to the installation of the curbing.

Aggregate base and subbase for restoration of pavement after modification of sloped granite curbing shall be incidental for the installation of the concrete forebays.

Aggregate base and subbase for restoration of pavement after installation of treatment devices shall be incidental for the installation of the device.
SECTION 401

HOT MIX ASPHALT PAVEMENTS

The provisions of MDOT Special Provision Division 400 Pavements, Section 401 Hot Mix Asphalt Pavement, dated March 10, 2010, shall apply with the following additions and modifications:

401.11 Preparation of Existing Surface

Add the following paragraphs.

Where pavement placed under this Contract joins an existing pavement, the existing pavement, when directed by the Engineer, shall be removed a minimum of 1’ wide and 1-1/2” deep in order to provide a vertical butt joint. The butt joint shall also be tack coated.

All streets to be shimmed or leveled shall be reviewed with Paving Inspector prior to placement to determine depth or grade to be achieved.

All vertical cuts in existing pavements shall be treated with an approved asphaltic tack coat material. The surface of the joint once completed shall be flush with the existing pavement.

All work necessary for the construction of this joint shall be considered incidental to the related job items. Vertical joints in HMA 19.0 MM and HMA 9.5 MM shall be offset from each other horizontally by at least one foot (1’).

All work under this section shall be considered incidental to this Contract.
SECTION 502

STRUCTURAL CONCRETE

502.01 Description

This work shall consist of furnishing and placing a Portland cement concrete for the installation of the concrete drainage forebays, curbs and incidental construction as shown on the plans, or as directed by the Resident. All work shall be in conformity with the applicable provisions of Section 502 - Structural Concrete, Section 503 - Reinforcing Steel, and Section 515 - Protective Coating for Concrete Surfaces.

502.02 Materials

Concrete: Concrete shall be Class A.

Welded Steel Wire Fabric: Per Section 709.02 - Welded Steel Fabric. Fiber reinforced concrete mixtures (Fibermesh) having the same strength or exceeding as specified for concrete mixes, as verified by Manufacturer’s testing laboratory procedures, shall be considered as an alternate for exterior flat work and sidewalks.

Control Joint: Zip strip control joint shall be 1 ½ inch type as manufactured by Superior Featherweight Tool Company, 1325, Bixby Drive, City of Industry, CA 91745; Harris Plastic Control Joint Former 1 ½ inch type as manufactured by A.H. Harris & Sons, Inc., 21 Ellis Street, New Britain, CT 06050; or an equivalent.

Joint Sealant: Per Section 714.04 - Sealant.

502.03 Construction Requirements

Preparation of Foundation: The foundation bed shall be well graded and compacted, as directed by the Resident, to provide the thickness of concrete indicated on the plans. Prior to the concrete placement, the foundation bed shall be thoroughly and uniformly saturated with water. The bed shall be free of puddles and excessive surface water.

Placement of Concrete: The concrete mix shall be placed in a continuous placement operation; no construction joints will be allowed for the construction of the forebays. Construction joints for curbing shall be in accordance with Section 609.

The surface of the concrete shall receive a float finish in accordance with Section 502.14(A) - Float Finish. Immediately following the float finish, the surface shall be textured at right angles to the roadway using an approved open-pile, stiff bristle broom or mat.

The curing period for the concrete shall be four days and shall meet the requirements of Section 502.15 - Curing Concrete. The finished surface of the concrete shall receive a
protecting coating in accordance with Section 515 - Protective Coating for Concrete Surfaces.

502.04 Method of Measurement: Structural concrete, concrete forebays, satisfactorily placed and accepted, will be incidental to the construction of the forebay which shall be measured per Section 604.

Curbing will be measure per Section 609.

502.05 Basis of Payment: The placement of concrete and all labor, materials, equipment, and incidentals necessary to complete the work; the furnishing and the application of the protective coating; the fabrication, and delivery; furnishing and placement of control joint strip and sealant; furnishing and pacing reinforcement. All work under this section shall be considered incidental to this Contract.

Excavation for the placement of the Structural Concrete, Roadway Median will be paid for under the appropriate contract pay item, Section 502.1 - Structural Concrete (Colored Pavement).
SECTION 502.1

STRUCTURAL CONCRETE
(Colored Pavement)

502.1.01 Description.

This work shall consist of furnishing and placing colored, textured Portland cement concrete pavement and incidental construction for all colored pavements in raised traffic islands, as indicated on the plans and as directed by the Resident. Except as otherwise specified in this Special Provision, all work shall be in conformity with the applicable provisions of Section 502, Structural Concrete; and, Section 515, Protective Coating for Concrete Surfaces. Colored pavement shall consist of a permanent, fade-resistant, uniform, and streak-free integral color-conditioning, a matching colored surface hardener, and a stamped Stone Tile Stacked Bond, surface texture split, natural stone pattern for Portland cement concrete. The stamped, colored concrete granite paver pattern shall have the appearance pattern, replicating Lithotex Pavecrafers COBBLESTONE- Stacked Bond Pattern #D-362.01 surface texture of naturally worn, flat cobblestones, edges are irregular and corners rounded. Pattern as manufactured by L. M. Scofield Company, or approved equal, as directed by the Resident.

MATERIALS

502.1.02 Concrete Mix.

Portland cement concrete shall be class LP and shall be colored throughout the mix. The mix design must be approved by the Resident prior to any concrete construction taking place. The concrete mix design shall have a maximum slump of 4 in (100 mm), an air content of 6.0 ± 1.5%, a water/cement ratio of 0.42, and must contain a minimum of 275 kilograms per cubic meter (5 sacks per cubic yard) of cement. No calcium chloride shall be added. The same brand of cement, source of sand, and water/cement ratio shall be maintained for each load of concrete of the same color.

502.1.03 Reinforcement.

Steel reinforcement shall be 100 mm x 100 mm (6-inch by 6-inch) W4 x W4 Steel Welded Wire Reinforcement, Deformed, conforming to Section 503 and Section 709.02. Fiber reinforced concrete mixtures (Fibermesh) having the same strength or exceeding as specified for concrete mixes, as verified by Manufacturer’s testing laboratory procedures, shall be considered as an alternate for exterior flat work and sidewalks.

502.1.04 Preformed Expansion Joint Filler.

Preformed Expansion Joint Fillers shall meet the requirements of Section 705.01. Expansion Joint Fillers shall be placed between concrete and existing curb and as indicated on the plans.
502.1.05 Coloring Materials.

The Stamped Colored pavement shall consist of Portland cement concrete replicating Chromix Integral Admixture color #5183 Stone Gray Lithochrome Color Hardener color #5183 Stone Gray and Lithochrome Antiquing Release color #A-57 Platinum Gray as manufactured by L. M. Scofield Company, or approved equal, as directed by the Resident. The color-conditioning admixture shall be a single-component, colored, water-reducing, set-controlling admixture, factory formulated and packaged in cubic yard dosage increments, not multiple additives and pigments added separately into the mix. It shall comply with ASTM C 494, ASTM C979, and AASHTO M194.

CONSTRUCTION REQUIREMENTS

502.1.06 Test Slabs.

Test slabs of colored pavement shall be poured replicating jobsite conditions, using the contemplated materials and construction techniques, including surface hardeners and stamping, and shall be submitted for approval. Each test slab of colored concrete shall be a minimum of 100 mm (4-in) thick and 0.6 meter (2-feet) by 0.6 meter (2-feet) square. Four separate test slabs shall be cast as directed by the Resident.

502.1.07 Preparation of Foundation.

Existing asphalt shall be removed, and the existing gravel material shall be graded and compacted to provide adequate and uniform load-bearing characteristics. Prior to concrete placement the foundation bed shall be thoroughly and uniformly saturated with water, and shall be free of puddles and excessive surface water.

502.1.08 Placement of Concrete.

Concrete shall be placed in a continuous operation between preformed expansion joints. No construction joints will be allowed. Expansion Joints shall have an approved expansion joint sealer matching the color of the concrete, installed as indicted on the plans. Preformed Expansion Joints shall be continuous and of an approved material; and, Control Joints shall be saw cut into the surface. Expansion Joints and Control Joints shall be placed as called for on the plans.

502.1.09 Weather and Curing Limitations.

Colored pavement shall only be placed between the dates of May 1 and October 1, provided the air temperature as determined by an approved thermometer placed in the shade at the paving location is 10 degrees C (50 degrees F) or higher. During the curing process, the concrete shall not be covered with plastic sheeting, burlap, or other material which might disturb the uniformity of color throughout the concrete.
502.1.10 Mixing, Placing and Finishing.

The concrete mix shall be controlled to provide good batch-to-batch uniformity. Ready-mix trucks shall be in good condition. If required by the Resident, the Contractor shall wet-check the approximate color of each load before placing in accordance with the color admixture manufacturer's recommendations.

Before batching, the drum must be thoroughly clean and wet. The quantity of colored concrete mixed shall not be less than one-third of the capacity of the mixing drum, and shall always be in full cubic yard increments. Approximately 150 L (40 gal) of the mix water and a portion of the aggregates shall be batched into the mixer drum. Then one bag of the approved admixture, correctly packaged for the mix design, shall be added for each cubic yard of concrete. The remaining ingredients shall be added, and the load mixed at the specified mixing speed for a minimum of 130 revolutions, before discharging. Admixtures shall never be added to an empty drum or at the tail end of a load. When depositing, the concrete shall be deposited near its final position to avoid segregation due to re-handling or flowing. The concrete shall be placed and consolidated so that it completely fills all space inside the forms and provides a suitable surface for finishing. No water shall be added after the truck has left the batch plant. Concrete that has started to set must not be re-tempered, but shall be discarded.

Finishing, application of color hardener and antiquing release, and stamping shall be done in strict accordance with manufacturer’s recommendations. Deviations from such recommendations may result in an unsatisfactory or unacceptable result.

Prior to final acceptance the cured, cleaned, Colored Textured concrete surfaces shall receive a separate treatment of approved concrete sealant according to manufacturer’s directions and specifications. Contractor is responsible for providing manufacturer’s documentation relative to sealant bonding to cured concrete or provide a method for adequate bonding of sealant.

502.1.11 Quality Assurance.

Quality assurance of Structural Concrete, Colored Pavement will be by Method B as defined in Section 502.0504 of the Standard Specifications.

502.1.12 Method of Measurement.

Structural Concrete, Colored Pavement, satisfactorily placed and accepted, will be measured for payment by the number of square yards of colored concrete installed and accepted in place, in accordance with the dimensions shown on the plans or authorized by the Resident. There will be no separate measurement for admixtures, curing compounds, reinforcement, expansion and contraction joints, joint filler material, joint sealant, concrete coloring, finishing, or stamping, or related and incidental construction.
502.1.13 Basis of Payment.

The accepted quantity of Structural Concrete, Colored Pavement will be paid for at the contract unit price per square yard, which payment will be full compensation for all labor, materials, tools, equipment, and incidentals necessary to complete the work, including the fabrication, delivery and placement of colored concrete and reinforcement, admixtures, furnishing and placement of expansion and control joints and joint filler material and sealant, and the furnishing and application of curing agents and protective coatings and stamping.

Payment will be made under:

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SECTION 603

PIPE CULVERTS AND STORM DRAINS

The provisions of Section 603 of the Standard Specifications shall apply with the following additions and modifications:

603.011 Description

Add the following paragraph:

All connections shall be made in conformance with the Codes of the City of South Portland.

603.012 Materials

This section shall be revised to read as follows:

Materials shall meet the requirements specified for the various subsections of the specifications and listed below:

Smooth Bore High Density Polyethylene (HDPE): Pipe shall meet the requirements of Standard Specifications Section 703.06 with the additions and modifications.

1. HDPE pipe shall meet all specifications per 4” -10”AASHTO standards M 252 and 12” – 24” Type C M 294.
2. HDPE pipe shall meet the ASTM F 405 standard for corrugated Polyethylene Tubing and fittings.
3. HDPE pipe shall meet the ASTM F 667 specifications for 8” thru 15” pipe.
4. HDPE pipe will have walls that are smooth bore.
5. All HDPE pipe shall have a soil-tight joint system that meets the ASTM F477 standard.
6. Couplings, Tee’s and fittings must meet AASHTO M294 standards. All connections must be a rubber gasket tight seal. No collared connections accepted. The gaskets shall be of a composition and texture that is resistant to common ingredients of storm water, including oils and groundwater, and that will permanently endure the conditions of the proposed use
7. Acceptable Manufacturers include:
   a. Advanced Drainage Systems
   b. Hancor Technology
   c. Lane Companies
   d. Or equal to above

Polyvinyl Chloride (PVC) SDR-35 Pipe: Pipe shall meet the following requirements.

1. PVC SDR-35 pipe shall be Ring Type Sewer Pipe SDR-35.
2. PVC SDR-35 pipe shall meet ASTM D3034 for sizes 4” thru 15”.
3. PVC SDR-35 shall meet ASTM F-679 for sizes 18” thru 27”.

13125
4. PVC SDR-35 rubber seals shall meet ASTM D 3212.

5. All fittings and pipe shall have a water tight push on joint and must meet the ASTM D3034 and ASTM D3212 standards.

6. Minimum "pipe stiffness" at 4% deflection shall be 46 psi for all sizes when tested in accordance with ASTM D2421.

7. All fittings and connectors shall meet ASTM D3034 and ASTM D 3212 Standards.

8. Joints shall be push-on rubber gasketed “Bell and Spigot” type joints using factory installed elastomeric ring gaskets. The gaskets shall be securely fixed into place by the manufacturer so that they cannot be dislodged during joint assembly.

9. The gaskets shall be of a composition and texture that is resistant to common ingredients of storm sewer, including oils and groundwater, and that will permanently endure the conditions of the proposed use.

10. Where perforated pipe is used perforations will be ½” holes every 5” on center and two rows at 120° apart.

11. Acceptable Manufacturers include:
   a. J-M Manufacturing
   b. IPEX
   c. Or equal to above

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<tr>
<th>Aggregate Base - Screened or Crushed</th>
<th>Stand. Spec. 703.06</th>
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<td>Aggregate Subbase – Sand</td>
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<tr>
<td>Crushed Stone for Pipe Bedding</td>
<td>Stand. Spec. 703.30</td>
</tr>
<tr>
<td>Granular Borrow for Trench Backfill</td>
<td>Stand. Spec. 703.19</td>
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603.031 Construction Requirements

603.0311 Polyvinyl Chloride (PVC) Storm Drain Pipe and Fittings:

Each pipe length shall be inspected before being laid. Pipe shall be laid to conform to the lines and grades indicated on the drawings. Each pipe shall be so laid as to form a close joint with the next adjoining pipe and bring the inverts continuously to the required grade.

Bell holes shall be excavated or provided in the base material to receive the bell or coupling so that only the barrel of the pipe receives bearing pressure from the supporting material.

When each pipe has been properly bedded, enough of the backfill material shall be placed and compacted between the pipe and the sides of the trench to hold the pipe in correct alignment.

No pipe or fitting shall be permanently supported on blocks, wedges, boards or stones.

All joints shall be made in a dry trench and in accordance with the manufacturer's recommendations.
Pipe bundles shall be stored on a flat surface so as to support the barrels evenly. This is important as in hot weather PVC pipe will deflect or warp causing installing problems in line and grade. If a warped section is found, the Contractor shall not use such length of pipe.

Pipe shall remain stacked in the original shipping bundles, and only pipe taken off the bundle for one day's laying shall be distributed along the trench.

PVC pipe will not bond to concrete or mortar and therefore connection to a cast-in-place or brick manhole and catch basin shall be made as shown on the pipe connection detail of the project plans.

603.0312 Smooth Bore High Density Polyethylene Storm Drain Pipe and Fittings:

Each pipe length shall be inspected before being laid. Pipe shall be laid to conform to the lines and grades indicated on the drawings. Each pipe shall be so laid as to form a close joint with the next adjoining pipe and bring the inverts continuously to the required grade.

When each pipe has been properly bedded, enough of the backfill material shall be placed and compacted between the pipe and the sides of the trench to hold the pipe in correct alignment.

No pipe or fitting shall be permanently supported on blocks, wedges, boards or stones.

All joints shall be made in a dry trench and in accordance with the manufacturer's recommendations.

603.13 Cleaning Inspection and Testing

603.131 General: Pipe may be inspected at the manufacturing plant, or on the work site and shall be subject to rejection at any time, even though sample pipe may have been accepted as satisfactory at the manufacturing plant.

All pipe shall be subject to thorough inspection and tests. All tests shall be made in accordance with the methods prescribed by, and the acceptance or rejections shall be based on, applicable ASTM specifications.

Pipe will be inspected upon delivery and all pipe which does not conform to the requirements of this contract will be rejected and shall be immediately removed from the work area by the Contractor.

Unsatisfactory pipe will be permanently rejected.

If such pipe is found in the pipeline, it shall be removed and replaced or encased in a Class A concrete collar or envelope as directed, at no additional cost to the District.
An inspection of the interior of all mainline pipe and catch basin lateral connections installed as part of the project shall be completed prior to final paving.

603.132 Cleaning

All storm drains shall be thoroughly cleaned with high pressure water jetting equipment.

603.14 Method of Measurement

Pipes will be measured by the linear foot in place within the limits specified below.

For measurement purposes the end of the pipe in closed structures will be considered at the inside face of the wall, and in masonry headwalls it will be considered to be at least the face of the headwall.

Connections to existing structures will be measured by each connection and will include the coring and installation of pipe boot.

Connections to existing pipe will be measured by the number of structures connected to the pipe and will include the cutting of the pipe and any fittings necessary to make the connections.

Note: All pipes and connection for the Maine Mall Road Drainage Improvements will be incidental to the installation of the treatment system. No separate payment will be made.

603.15 Basis of Payment

The accepted quantities of pipe for culverts, drains and sewers will be paid for at the contract unit price per linear foot, complete in place.

The accepted quantities for connection to existing structures or pipes will be paid for at the contract unit price each and will include all fittings for which price will be full compensation for the connection and all tools, equipment, labor and other materials necessary to satisfactorily complete the work.

Payment for trench excavation, including pavement removal, removal of road base and removal of existing storm drains to the established trench profile indicated on the plans, with the exception of structural rock excavation, shall be considered incidental to the contract and now separate payment will be made.

All dewatering, sheeting, shoring, or temporary bracing required for trench excavation and to support adjacent utilities or structures is incidental to this item and no separate payment will be made.

Payment for approved undercuts below the established trench profile will be paid for under Item 206.061 - Structural Earth Excavation.
Rock excavation will be paid for as Structural Rock Excavation as specified in Section 206 of the Supplemental Specifications.

Backfilling of the trench shall be incidental to this item.

Payment for trench excavation, with the exception of structural rock excavation, will be included in this Item.

Pipe bedding materials, backfilling and backfilling materials shall also be included in this item for payment.

Payment will be made under:

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<td>603.159</td>
<td>12 Inch Diameter PVC or HDPE Storm Drain Pipe</td>
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<td>603.51</td>
<td>Core and Connection to Existing Structure</td>
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<td>Connection to Existing 12” PVC Pipe</td>
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<td>603.53</td>
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<tr>
<td>603.7418</td>
<td>Remove and Relay 18-Inch Diameter HDPE Storm Drain Pipe</td>
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SECTION 603.1

SANITARY SEWERS, FORCE MAIN AND WATER MAIN

The provisions of Section 603 of the Standard Specifications shall apply with the following additions and modifications:

603.1.011 Description

This work shall consist of the construction of sewer pipes by means of trenched or trenchless installation, casing pipe, service leads, force mains hereinafter referred to as "pipe" as shown on the plans, details, and specified herein.

The Contractor shall install locating/warning tape over the centerline of all sanitary, and combined sewer pipes including main lines, force mains service lateral both within the right of way and outside of the established street as required by City ordinance. Both a green warning tape and a number 10 or 12 gauge single strand coated wire shall be installed at a maximum of 24 inches below finish surface grade for the entire length of the pipe. Magnetic warning tape may be used in place of the separate warning tape and wire. The end of all services stubs shall be recorded on the included sheet entitled Storm and Sanitary Sewer Service Location and submitted to the City upon completion of the work.

The Contractor shall maintain sanitary sewer flows by by-pass pumping. There will be no direct payment for this and is considered incidental to the pipe installation.

There will be no separate payment for reconnecting service laterals. The Contractor shall furnish and install all necessary fittings including tees, wyes, bends, and couplings as required for a complete working sewer lateral.

All connections shall be made in conformance with the Plumbing Code of the City of South Portland and the Maine State Plumbing Code.

603.1.012 Materials

This section shall be revised to read as follows:

Materials shall meet the requirements specified for the various subsections of the specifications and listed below:

Polyvinyl Chloride (PVC) SDR-35 Pipe: Pipe shall meet the following requirements.

1. PVC SDR-35 pipe shall be Ring Type Sewer Pipe SDR-35.
2. PVC SDR-35 pipe shall meet ASTM D3034 for sizes 4” thru 15”.
3. PVC SDR-35 rubber seals shall meet ASTM D3212.
4. All fittings and pipe shall have a water tight push on joint and must meet the ASTM D3034 and ASTM D3212 standards.
5. Minimum "pipe stiffness" at 4% deflection shall be 46 psi for all sizes when tested in accordance with ASTM D2421.
6. All fittings and connectors shall meet ASTM D3034 and ASTM D3212 Standards.
7. Joints shall be push-on rubber gasketed “Bell and Spigot” type joints using factory installed elastomeric ring gaskets. The gaskets shall be securely fixed into place by the manufacturer so that they cannot be dislodged during joint assembly.
8. The gaskets shall be of a composition and texture that is resistant to common ingredients of storm sewer, including oils and groundwater, and that will permanently endure the conditions of the proposed use.
9. Acceptable Manufacturers include:
   a. J-M Manufacturing
   b. IPEX
   c. Or equal to above

Ductile Iron Force Main and Fittings

1. Push-On joint pipe shall be thickness class 52, pressure class 200, in conformance of AWWA/ANSI C150/A21.50-02. The Push-On rubber gasket shall conform to AWWA/ANSI C111/A21.11, the national standard for rubber gasket joints.
2. All pipe furnished shall be in 18 and 20 foot nominal lengths. All pipes shall have an outside coating in accordance to AWWA/ANSI C110/A21.10. The outside casting shall be a petroleum asphaltic coating. The coating shall be applied to the outside of all fittings. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun, and strongly adherent to the fitting.
3. Cement mortar lining shall conform with the latest revision of ANSI/AWWA C104/A21.4-95.
4. All pipe fittings shall be mechanical joint class 350 compact fittings in accordance to AWWA/ANSI C153/A21.53-00. Fittings could be either cement lined in accordance to AWWA/ANSI C104/A21.4 or have an epoxy coating on the interior/ exterior surface for ductile iron fittings in accordance to AWWA/ANSI C116/A21.16-98
5. Fittings shall have distinctly cast on them pressure ratings, nominal diameters of openings and the number of degrees or fraction of the circle on the bends. Ductile Iron fittings shall have the letters “DI” or “Ductile” cast on them. Cast letters and figures shall be on the outside body of the fitting set forth in the latest revision of AWWA/ANSI C110/A21.10-98.
6. All jointing materials shall be as furnished by manufacturer of pipe and fittings and as specified above. All jointing materials shall be in accordance with AWWA/ANSI C111 A21.11-00.
7. Pipe Deflections shall use Pipe Joint Restrains in conjunction with mechanical joint fittings. The joint restraint ring and its wedging components shall be made of ductile iron conforming to ASTM A536. Dimensions of the restrainer must allow use with standard MJ bell conforming to AWWA C111 and AWWA C153. Restrainer must restrain up to 350 psi of working pressure.

Aggregate Base - Screened or Crushed Stand. Spec. 703.06
Aggregate Subbase – Sand Stand. Spec. 703.06
Crushed Stone for Pipe Bedding  Stand. Spec. 703.30
Crushed Stone (overdepth)  Stand Spec. 703.31
Granular Borrow for Trench Backfill  Stand. Spec. 703.19

Pipe Insulation: Shall be 2” Thick Extruded Polystyrene Insulation conforming to AASHTO M 230

603.1.031 Construction Requirements

603.1.0311 Polyvinyl Chloride (PVC) Sewer Pipe and Fittings:

Each pipe length shall be inspected before being laid. Pipe shall be laid to conform to the lines and grades indicated on the drawings. Each pipe shall be so laid as to form a close joint with the next adjoining pipe and bring the inverts continuously to the required grade.

Bell holes shall be excavated or provided in the base material to receive the bell or coupling so that only the barrel of the pipe receives bearing pressure from the supporting material.

When each pipe has been properly bedded, enough of the backfill material shall be placed and compacted between the pipe and the sides of the trench to hold the pipe in correct alignment.

No pipe or fitting shall be permanently supported on blocks, wedges, boards or stones.

All joints shall be made in a dry trench and in accordance with the manufacturer's recommendations.

Pipe bundles shall be stored on a flat surface so as to support the barrels evenly. This is important as in hot weather PVC pipe will deflect or warp causing installing problems in line and grade. If a warped section is found, the Contractor shall not use such length of pipe.

In order to ensure proper compaction, alignment, and grade, and eliminate any construction problems that may be encountered, the Contractor shall be required to use only the 12-1/2 foot lengths of PVC pipe.

Pipe shall remain stacked in the original shipping bundles, and only pipe taken off the bundle for one day's laying shall be distributed along the trench.

PVC pipe will not bond to concrete or mortar and therefore connection to a cast-in-place or brick manhole and catch basin shall be made as shown on the pipe connection detail of the project plans.

603.1.13 Cleaning Inspection and Testing

603.1.131 General: Pipe may be inspected at the manufacturing plant, or on the work site and shall be subject to rejection at any time, even though sample pipe may have been accepted as satisfactory at the manufacturing plant.
All pipes shall be subject to thorough inspection and tests. All tests shall be made in accordance with the methods prescribed by, and the acceptance or rejections shall be based on, applicable ASTM specifications.

Pipe will be inspected upon delivery and all pipe which does not conform to the requirements of this contract will be rejected and shall be immediately removed from the work area by the Contractor.

Unsatisfactory pipe will be permanently rejected.

If such pipe is found in the pipeline, it shall be removed and replaced or encased in a Class A concrete collar or envelope as directed, at no additional cost to the City.

An inspection of the interior of all mainline pipe lateral connections installed as part of the project shall be completed prior to final paving.

603.1.133 Final Sanitary Sewer Testing

Work Included:

a. Final storm and sanitary sewer testing work includes the performance of testing and inspecting each and every length of storm and sewer pipe, pipe joint and each item of appurtenant construction.

b. Perform testing at a time acceptable to the Engineer, which may be during the construction operations, after completion of all pipe laying operations.

c. Provide all labor and equipment and any other necessary apparatus for the testing.

d. Provide a low pressure air test of the sanitary sewer line.

Execution:

a. General:

1. All sanitary sewers and appurtenant work, in order to be eligible for acceptance, shall be subjected to tests that will determine the degree of horizontal and vertical alignment.

2. Thoroughly clean and flush all sanitary sewer lines to be tested, prior to initiating test procedures.

3. Perform all tests and inspections in the presence of the Engineer, or others assigned by the engineer, to ensure accuracy and compliance.

b. Remedial Work:

1. Perform all work necessary to correct deficiencies discovered as a result of testing and or inspections.

2. Completely retest all portions of the original construction on which remedial work has been performed.

c. Alignment Tests:

1. Perform tests for the correctness of horizontal and vertical alignment on each and every length of gravity sewer pipeline between manholes.

2. Alignment tests to be conducted after all pipe has been installed and backfilled.

3. The observation test shall be conducted after all upstream work has been completed and the pipeline cleaned of debris.
4. Notify the Engineer at least 24 hours in advance of the proposed observation testing.
6. Beam a source of light, acceptable to the Engineer, through the pipeline from both ends and the Engineer will directly observe the light in the downstream, and/or upstream manhole of each test section.
7. The length of pipe between manholes, diameter of pipe and amount of light observed in the manhole at the end of each pipe section will determine acceptance of the alignment test by the Engineer.
8. The amount of vertical and horizontal deflection shall not be greater than the ASTM allowance and (manufacture's recommendations) for the pipe being tested.
9. NO STANDING WATER SHALL BE ALLOWED. The presence of standing water shall be cause for rejection of that pipe (including manhole) section.
10. Improper alignment will be corrected by re-excavation and resetting of pipe.

d. Pipe Deflection:
1. Pipe provided under this specification shall be installed so there is no more than a maximum deflection of 5.0 percent. Such deflection shall be computed by multiplying the amount of deflection (normal diameter less minimum diameter when measured) by 100 and dividing by the nominal diameter of the pipe.
2. The Contractor shall wait a minimum of 30 days after completion of a section of storm sewer, including placement and compaction of backfill, before measuring the amount of deflection by pulling a specially designed gage assembly through the completed section. The gage assembly shall be in accordance with the recommendations of the pipe manufacturer and be acceptable to the Engineer.
3. Should the installed pipe fail to meet this requirement, the Contractor shall do all work to correct the problem as the Engineer may require without additional compensation.

e. Television Inspection Tests (gravity storm and sanitary sewers)
1. Where television inspection testing is required, test procedures shall be in compliance with the requirements outlined in Specification Section.
2. No standing water shall be allowed. The presence of standing water may be cause for rejection of that pipe.
3. Any standing water, detectable leaks, improper joints or any other unacceptable feature detected by the television inspection will be corrected by re-excavation and resetting pipe at no additional cost to the owner.

603.1.14 Method of Measurement

Pipes will be measured by the linear foot in place within the limits specified below.

For measurement purposes the end of the pipe in closed structures will be considered at the inside face of the wall, and in masonry headwalls it will be considered to be at least the face of the headwall.
Reconnection of the existing services and force main connections for the Maine Mall Sanitary Sewer Replace met Project shall be incidental to the construction for the gravity sanitary lines and manholes and no separate payment will be made.

603.1.15 Basis of Payment

The accepted quantities of pipe for culverts, drains, sewers and laterals will be paid for at the contract unit price per linear foot, complete in place.

Payment for trench excavation, including pavement removal, removal of concrete road base and cobbles where present, and removal of existing storm drains and sewers to the established trench profile indicated on the plans, with the exception of structural rock excavation, shall be considered incidental to the contract and no separate payment will be made.

The installation of masonry plugs or PVC caps for pipes to be abandoned within the trench limits or in manholes is incidental to this item.

All dewatering, sheeting, shoring, or temporary bracing required for trench excavation and to support adjacent utilities or structures is incidental to this item and no separate payment will be made.

Payment for approved undercuts below the established trench profile will be paid for under Item 206.061 - Structural Earth Excavation.

Rock excavation will be paid for as Structural Rock Excavation as specified in Section 206 of the Supplemental Specifications.

Backfilling of the trench shall be incidental to this item.

Full depth trench repair including granular backfill, aggregate subbase and base course, hot bituminous pavement as shown on the trench repair details, shall be incidental to this item.

Saw cutting pavement for trench excavation shall be incidental to this item.

If any excavation including a utility trench is extended to a depth of more than fifteen (15) feet, it will be necessary to have the sideslopes or trench sheeting and shoring designed by a professional engineer registered in the State of Maine. No extra payment will be made for the engineered sheeting and shoring methods, materials or equipment used by the Contractor. All trench stabilization shall be considered incidental to the applicable pay items.

The costs for bends, retainer glands and thrust blocking shall be incidental to the appropriate pipe item.

The cost of locating/warning tape including installation shall be considered incidental to the appropriate pipe item.

The cost of maintaining flows in existing sewer lines and manholes and any maintenance and cleaning of said sewers that may be required as a result of new sewer installation shall be incidental to the related pay item and no separate payment for this work will be made.
The accepted quantity of will be paid for at the contract unit price per linear foot of pipe installed, complete in place. The amount bid per linear foot shall be full compensation for furnishing all labor, equipment, tools, adapters, reducers, and materials necessary to satisfactorily connect all new and existing service laterals.

Payment for trench excavation, with the exception of structural rock excavation, will be included in this Item.

Pipe bedding materials, backfilling and backfilling materials shall also be included in this item for payment.

Payment will be made under:

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SECTION 604

MANHOLES, INLETS, AND CATCH BASINS

The provisions of Section 604 of the Standard Specifications shall apply with the following additions and modifications:

604.01 Description

This work shall consist of the construction, alteration, repair, or placement of manholes, inlets, and catch basins including covers, frames, brick masonry, inverts and the application of waterproofing in conformance with the dimensions elevations and locations shown on the plans and specified herein.

604.02 Materials

This section shall be revised to read as follows:

Materials shall meet the requirements specified for the various subsections of the specifications and listed below:

604.021 Precast Concrete Manholes and Catch Basins: Precast Manholes and Catch basins shall meet the requirements of Standard Specifications Section 604.02 with the additions and modifications.

Polyvinyl Chloride (PVC) Surface Drainage Inlets. PVC surface drainage inlets shall be of the road and highway structure type as manufactured by Nyloplast a division of Advanced Drainage Products. The ductile iron frame, grate and hood for each structure is considered to be an integral part of the surface drainage inlet and shall be furnished by the same manufacturer.

604.0211 Quality Assurance:

A. Precast Manhole Basin Base, Barrel and Top Sections:
   2. Average strength of 4,000 psi at 28 days.
   3. Testing:
      a. Determine concrete strength by tests on 6 inch by 12 in vibrated test cylinders cured in the same manner as the bases, barrels and tops.
      b. Have tests conducted at manufacturer’s plant or at an approved testing laboratory.
      c. Have not less than 2 tests made for each 100 vertical feet of precast catch basin sections.

B. Precast Catch Basin Base, Barrel and Top Sections:
   1. Conform to ASTM C478-72 (AASHTO M199-795) except as modified herein or as directed by the Engineer.
   2. Average strength of 4,000 psi at 28 days.
   3. Testing:
a. Determine concrete strength by tests on 6 inch by 12 in vibrated test cylinders cured in the same manner as the bases, barrels and tops.
b. Have tests conducted at manufacturer’s plant or at an approved testing laboratory.
c. Have not less than 2 tests made for each 100 vertical feet of precast catch basin sections.

C. Manhole Steps:
1. Conform to ASTM C478-06 for load carrying capacity and pull out resistance.
2. Acceptable Manufacturers
   a. Reliance Steel Products, Inc.
   b. M.A. Industries, Inc.
   c. Or equal to above.

D. Drain Manhole Frames and Covers:
1. Manhole Covers: Acceptable Manufacturers:
   a. Ferguson Waterworks, General Foundries, Inc. 24”x5” Ring and Cover.
   b. No equals.
2. Dimensions and Style shall conform to the Drawings, Standard castings
   a. Covers - solid with utility name in 3-inch letters diamond pattern.
   b. Frame - 24-inch diameter clear opening, with flange bracing ribs.
   c. Minimum weight of frame and cover shall be 430 lbs
3. Made of cast iron conforming to ASTM A48-76, Class 30 minimum and shall have machined bearing surfaces to prevent rocking.
4. Castings shall be smooth with no sharp edges.
5. Constructed to support an HS-20 wheel loading.

E. Catch Basin Frames and Covers
1. Acceptable Manufacturers:
   i. Ferguson Waterworks, General Foundries, Inc. 24”x5” Ring and Grate.
   ii. Catch Basins with Granite Headstone shall include MDOT Type “D” Frame as shown on the plans.
2. Made of cast iron conforming to ASTM A48-76, Class 30 minimum and shall have machined bearing surfaces to prevent rocking.
3. Castings shall be smooth with no sharp edges.
4. Constructed to support an HS-20 wheel loading.

F. Masonry:
1. Brick: Shall comply with ASTM Standard Specifications for Sewer Brick (made from clay or shale), Designation C32, for Grade SS, hard brick.

G. Manhole Waterproofing:
1. Acceptable Manufacturers:
   a. Minwax Fibrous Brush Coat, Minwax Co., N.Y., N.Y.
   b. Tremco 121 Foundation Coating, Tremco Mfg. Co., Newark, N.J.
   c. Or equal.
H. Polyvinyl Chloride (PVC) Surface Drainage Inlets:
   1. Acceptable Manufacturers:
      a. Advanced Drainage Systems
      b. Engineer Approved Equal

      The ductile iron frame, grate and hood for each structure is considered to be an integral part of the surface drainage inlet and shall be furnished by the same manufacturer.

604.0212 Products

A. Dimensions: Dimensions, shall be as shown on the Drawings:
   1. Base & Riser Sections:
      a. Diameter: As shown on the Drawings.
      b. Length: As required.
      c. Wall Thickness: Not less than 5 inches.
      d. Joints: Bell-and-spigot or tongue-and-groove formed on machine rings to insure accurate joint surfaces.
   2. Tops:
      a. Diameter: Eccentric cone type, 24 inches I.D. at top, 48 inches I.D. at bottom unless otherwise shown on the Drawings.
      b. Length: 4 feet.
      c. Wall thickness: Not less than 5 inches at the base, tapering to not less than 8 inches at the top.
      d. Joints: Bell-and-spigot or tongue-and-groove formed on machine rings to insure accurate joint surfaces.
      e. Exterior face of cone sections shall not flare out beyond the vertical.
   3. Flat Slab Tops:
      a. Location: Where shallow installations do not permit the use of a cone-type top and where indicated on the Drawings. Exterior face of cone sections shall not flare out beyond the vertical.
      b. Slab thickness: Not less than 6 inches.
      c. Constructed to support an HS-20 wheel loading.

B. Precast Catch Basin Sections
   1. Use flat tops or eccentric cones as appropriate. Exterior face of cone sections shall not flare out beyond the vertical.
   2. Joints: Bell-and-Spigot or tongue-and-groove formed on machine rings to insure accurate joint surfaces.
   3. Constructed to support an HS-20 wheel loading.
   4. The base section shall have a 2-foot minimum and 3-foot maximum sump.

C. Precast Catch Openings:
   1. Provide openings in the risers to receive pipes entering the catch basin of the types and materials shown on the plans.
   3. Make openings at the manufacturing plant or cut openings in the field.
   4. Provide flexible boot or solidly fill annular spaces around pipes entering the catch basin with non-shrink grout or other material approved by the City engineer.
5. **Size:** To provide a uniform annular space between the outside wall of pipe and the riser.

6. **Location:** To permit setting of the entering pipes at the correct elevations.

**D. Drain Manhole Openings:**

1. Provide openings in the risers to receive pipes entering the structure.

2. Make openings at the manufacturing plant.

3. **Size:** To provide a uniform annular space between the outside wall of pipe and riser.

4. **Location:** To permit setting of the entering pipes at the correct elevations.

5. Openings shall have a flexible watertight union between pipe and the manhole base. All manhole connections are incidental to the cost of the manhole.
   a. Cast into the manhole base and sized to the type of pipe being used.
   b. Type of flexible joint being used shall be approved by the Engineer.
   
   Install materials according to the Manufacturer's instructions.
   1. Lock Joint Flexible Manhole Sleeve made by Interpace Corporation.
   2. Kor N Seal made by National Pollution Control System, Inc.
   5. Or equivalent.

**E. Joints:**

1. Joint gaskets to be flexible self seating butyl rubber joint sealant installed according to manufacturer's recommendations. Install a double row of joint sealants for every manhole joint. For cold weather applications, use adhesive with joint sealant as recommended by manufacturer. Acceptable Materials:
   a. Kent-Seal No. 2
   b. Ram-Nek
   c. Or equivalent.

2. Joints between precast sections shall conform to related standards and manufacturer's instructions.

**E. Manhole Waterproofing:**

1. The exterior surface of all manholes shall be given two coats of bituminous waterproofing material at an application rate of 75 to 100 square feet per gallon, per coat.

2. The coating shall be applied after the manholes have cured adequately and can be applied by brush or spray in accordance with the manufacturer's written instruction.

3. Sufficient time shall be allowed between coats to permit sufficient drying so that the application of the second coat has no effect on the first coat.

**G. Manhole Steps**

1. Polyethylene coated steel safety type designed with a minimum concentrated live load of 300 pounds.

2. Thoroughly clean all surfaces to be embedded with a suitable cleaning agent to ensure that the surfaces are free from all foreign matter such as dirt, oil and grease.
3. The steps shall become thoroughly dry before being placed into the concrete.
4. All steps shall be cast into walls of the precast section so as to form a continuous ladder with a distance of 12-inches between steps.

H. Masonry
1. Brick:
   a. Sound, hard, uniformly burned, regular and uniform in shape and size, compact texture, and satisfactory to the Engineer.
   b. Immediately remove rejected brick from the work.
      1. Adjust frame to grade with bricks laid flat with minimum of 2 course and a maximum of 5 courses. Contractor shall provide sufficient brick courses to allow frames to be adjusted to the future road profile grades shown on the plans.
2. Mortar:
   a. Composition (by volume):
      1. 1 part Portland cement.
      2. 1/2 part hydrated lime.
      3. 4-1/2 parts sand.
   b. The proportion of cement to lime may vary from 1:1/4 for hard brick to 1:3/4 for softer brick, but in no case shall the volume of sand exceed 3 times the sum of the volume of cement and lime.
3. Cement shall be Type II Portland cement.
4. Hydrated lime shall be Type S.
5. Sand:
   a. Shall consist of inert natural sand.
   b. Grading:

<table>
<thead>
<tr>
<th>Sieve</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8-inch</td>
<td>100</td>
</tr>
<tr>
<td>No. 4</td>
<td>95-100</td>
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<tr>
<td>No. 8</td>
<td>80-100</td>
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<tr>
<td>No. 16</td>
<td>50-85</td>
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<tr>
<td>No. 50</td>
<td>10-30</td>
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<tr>
<td>No. 100</td>
<td>2-10</td>
</tr>
<tr>
<td>Fineness Modulus</td>
<td>2.3 - 3.1</td>
</tr>
</tbody>
</table>

PVC Drainage Inlets
1. Drainage Inlets:
   a. PVC surface drainage inlets shall be of the road and highway structure type as manufactured by Nyloplast a division of Advanced Drainage Products.
   b. The ductile iron frame, grate and hood for each structure is considered to be an integral part of the surface drainage inlet and shall be furnished by the same manufacturer.
   c. The PVC Structures shall be manufactured from PVC pipe stock utilizing a thermo molding process to reform the pipe stock to the specified configuration.
d. Drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. Joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals.
e. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the main body of the drain basin or catch basin.
f. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.
g. The grates and frames furnished for all surface drainage inlets shall be ductile iron for sizes 8”, 10”, 12”, 15”, 18”, 24” and 30” and shall be made specifically for each basin so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet.
h. Grates for drain basins shall be capable of supporting H-20 wheel loading for traffic areas or H-10 loading for pedestrian areas. 12” and 15” square grates will be hinged to the frame using pins.
i. Metal used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05 for ductile iron. Grates shall be provided painted black.

604.03 Construction Requirements

This section shall be revised to read as follows:

A. Performance

1. Precast Manhole and Catch Basin Sections:
   a. Perform jointing in accordance with manufacturer’s recommendations and as specified or approved by the Engineer.
   b. Install barrels and tops level and plumb.
   c. Make all joints water tight. Apply two rows of joint gasket material per barrel joint.
   d. Cut openings (as required) carefully to prevent damage to barrel sections and tops. Damaged barrel sections and tops shall be replaced by the Contractor at no additional expense to the City.
   e. For cold weather applications, install joint sealant per manufacturer’s recommendations.
   f. Install manhole barrel sections and top so that the steps are in alignment.

2. Manhole Invert Channels
   a. Smooth and semicircular in shape.
   b. Make changes in direction of flow with smooth curves having a radius as large as permitted by the size of the manhole.
   c. Stop the pipes at the inside face of the manhole where changes of direction occur.
   d. Form invert channels and shelf with brick. Fill the void area for constructing the brick shelf with mortar. Stone, gravel, or other
material will not be permitted to fill the void area for constructing the brick shelf.
e. Shape invert to make smooth transition in vertical grade.
f. Slope brick shelf towards the flow channel.

3. Masonry:
a. Laying Brick:
   i. Use only clean bricks in brickwork for manholes and catch basins.
   ii. Moisten the brick by suitable means until they are neither so dry as to absorb water from the mortar or so wet as to be slippery when laid.
   iii. Lay each brick in a full bed and joint of mortar without requiring subsequent grouting, flushing, or filling, and thoroughly bond as directed.
   iv. Construct all joints in a neat workmanlike manner, construct the brick surfaces inside the manholes so they are smooth with no mortar extending beyond the bricks and no voids in the joints. Maximum mortar joints shall be ½ inch.

b. Curing:
   i. Protect brick masonry from drying too rapidly by using burlaps which are kept moist, or by other approved means.
   ii. Protect brick masonry from the weather and frost as required.

4. Frames and Grates:
a. Set all frames in a full bed of mortar, true to grade and concentric with the catch basin opening.
b. Completely fill all voids beneath the bottom flange to make a watertight fit.
c. Place a ring of mortar at least one inch thick around the outside of the bottom flange, extending to the outer edge of the catch basin all around its circumference.
d. Clean the frame seats before setting the covers in place.

5. Plugging and Patching
a. Fill all exterior cavities with non-shrink grout and with bituminous waterproofing once the concrete and mortar has set.
b. Touch up damaged waterproofing.

6. Bedding and Backfill:
a. Bedding material of manholes and catch basins shall be a minimum of 6 inches of crushed stone.
b. Crushed Stone: Shall be a uniform material consisting of clean, hard, and durable particles or fragments, free from vegetable or other objectionable matter, containing angular pieces, as are those which come from a mechanical crusher. Gradation requirements shall be as follows:
c. Backfill 18 inches all around manholes and catch basins with select fill.
d. Select Fill: Shall consist of well graded granular material free of organic material, loam, wood, trash, snow, ice, frozen soil and other objectionable material and having no rocks with a maximum dimension of over 4 inches and meeting the following gradation requirements:

<table>
<thead>
<tr>
<th>Sieve</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 inch</td>
<td>100</td>
</tr>
<tr>
<td>3 inch</td>
<td>90-100</td>
</tr>
<tr>
<td>No. 4</td>
<td>20-55</td>
</tr>
<tr>
<td>No. 40</td>
<td>5-40</td>
</tr>
<tr>
<td>No. 200</td>
<td>0-8</td>
</tr>
</tbody>
</table>

Concrete Blocks shall not be used in any way in the construction or alteration modifications of manholes or catch basins.

All manhole bases, barrel sections and top sections shall be marked, by the manufacturer, with the appropriate manhole station (and offset if applicable) and the street name, if more than one street is incorporated within a single contract.

Special precautions shall be taken to provide adequate ventilation and attending personnel for the safety of all workers who may be required to enter existing sewers or sewers under construction.

It is emphasized to the Contractor that sanitary sewer and drainage construction under this contract shall be coordinated with existing sewer facilities so that continuous service and handling of existing flows is accomplished.

In the existing fifth paragraph, first sentence of that Subsection delete only “Metal frames and traps”, and substitute therefore “Metal frames, steps, other appurtenances, and traps”.

Catch basins shall be constructed as shown on the contract drawings. Unless otherwise indicated, catch basins shall have A-4 inlet stones which shall be incidental to the contract unit price of the structure.

After the manhole has been assembled in place, all lifting holes and all exterior joints shall be filled and pointed with an approved non-shrinking grout or approved bituminous mastic as shown on the construction drawings.
PVC Drainage Inlet Installation

The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 2 material as defined in ASTM D2321.

Bedding and backfill for surface drainage inlets shall be placed and compacted uniformly in accordance with ASTM D2321. The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height.

For H-20 load rated installations, a concrete ring will be poured under and around the grate and frame as indicated in the details.

604.031 Drainage Structures Abandoned or Removed

The existing castings on manholes and/or catch basins to be abandoned or removed shall be carefully removed, cleaned and delivered to the City stockyard as directed. All such castings shall become the property of the City.

Inlet stones for catch basins to be abandoned or removed shall be carefully removed, cleaned and delivered to the City Stockyard as directed.

The inlets and outlets of structures to be abandoned shall be plugged with bricks and mortar. The upper portions of the masonry shall be removed to a depth of four (4’) feet below the finished grade or as required for new construction, and the structures shall be completely filled with selected excavated material placed in six (6”) inch layers and thoroughly compacted. Prior to backfilling, the sump shall be pumped and cleared of all water and foreign materials.

The existing masonry of structures to be removed shall be completely removed. The inlets and outlets shall be fully plugged with bricks and mortar. The cavity shall be completely filled with selected excavated materials placed in six (6”) inch layers and thoroughly compacted.

604.032 Remove Existing Drainage Structures and Replace with New Drainage Structures

The existing castings on manholes and/or catch basins to be removed and replaced shall be carefully removed, cleaned and delivered to a City stockyard as directed. All such castings shall become the property of the City. Existing inlet stones for catch basins to be replaced shall be carefully removed, cleaned and delivered to a City Stockyard as directed and shall be incidental to the cost of said item.

604.04 Modify Structure

Existing catch basins and manholes to be altered shall be reconstructed as indicated on the plans or as required due to field conditions. This item includes:
1. Structure alterations for new pipe connection as shown on the plans and as required due to field conditions.
2. Adjustments to manhole invert channel caused by new pipe connections.
3. Adjusting frames and grates to grade, where required.
4. Installation of pipe stubs and connections to existing storm drains to be reconnected to the structure.
5. Installing masonry plugs or caps (for PVC pipes) for abandoned pipe connections.
6. Plugging abandoned pipe openings within structures.
7. Repointing and mortar repairs to adjustment bricks within 1 foot of the frame.

Altering existing catch basins shall include the removal and replacement of inlet stone, frame, grate, adjustment to grade, connection of underdrain to basin, and reconnection of existing inlet/outlet where indicated on the plans.

604.05 Method of Measurement

Under this subsection the following sections shall be amended as follows:

1. Subsection (a) of the Standard Specifications shall be deleted and the following paragraph shall be included:
   a. Complete structures. Each catch basin and manhole will be measured per each complete.
   b. Subsections (c),(d) and (e) of the Standard Specifications shall be deleted.
   c. Each existing drainage structure to be abandoned or removed will be incidental to the installation of new drainage structures.
   d. Each existing drainage structure to be removed and replaced with a new drainage structure will be considered as one unit, including inlet stone, pipe elbows or hoods where indicated, tipdowns, frame, grate, adjustment to grade, connection of underdrain to basin and installation of new inlet/outlet.

   Note: All installation of all structures and adjustments to existing structures for the Maine Mall Road Drainage Improvements will be incidental to the installation of the treatment system. No separate payment will be made.

604.06 Basis of Payment

The following paragraphs shall be added:

The cost of excavation and backfill of all catch basins or manholes, either new, abandoned, or removed and/or replaced shall be included in the cost of the specific work for each type of structure.
The cost of resetting curb inlet stones shall be considered incidental to the cost of adjusting catch basins to grade and no separate payments will be made. The cost of delivering inlet stones and/or castings to the City or other approved sites shall be considered as incidental to the contract items involved.

Reconnection of the existing services and force main connections for the Maine Mall Sanitary Sewer Replace met Project shall be incidental to the construction for the gravity sanitary lines and manholes and no separate payment will be made.

The cost of maintaining flows in existing sewer lines and manholes and any maintenance and cleaning of said sewers that may be required as a result of new manhole installations shall be incidental to the related pay item and no separate payment for this work will be made.

The cost of removal of existing structures shall be incidental to the installation of proposed structure which will replace it.

The cost of installing a new beehive grate on existing structure shall include the frame as indicated and the work necessary to modify structure to achieve the elevation as indicated on the construction plans.

The cost of installing the concrete forebay for Gorham Road shall include the necessary preparation for construction including excavation, formwork and placing weld wire mesh, the placement and finishing of concrete, modification of adjacent curbing, pavement repair and installation of stone berm. Aggregate for the stone berm is considered incidental to the forebay construction.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>604.15</td>
<td>Install 4 Foot Diameter Sewer or Drain Manhole Each</td>
</tr>
<tr>
<td>604.168</td>
<td>Convert Inlet Top to Beehive Grate Each</td>
</tr>
<tr>
<td>604.18</td>
<td>Adjusting Catch Basin to Grade Each</td>
</tr>
<tr>
<td>604.24</td>
<td>Type F Catch Basin Each</td>
</tr>
<tr>
<td>604.2403</td>
<td>Construct Concrete Forebay Each</td>
</tr>
<tr>
<td>604.2412</td>
<td>Install 12” Nyloplast Catch Basin Each</td>
</tr>
<tr>
<td>604.2430</td>
<td>Install 30” Nyloplast Catch Basin Each</td>
</tr>
</tbody>
</table>
SECTION 604.1

MANHOLES, INLETS, AND CATCH BASINS
(Stormwater Treatment Areas)

604.1.01 Description:

This work shall consist of the construction of underdrained soil filters and bioretention areas to treat median and highway runoff using swale retention facilities with underdrained soil media (USM); gravel drainage course and perforated pipe or swale retention facilities with bioretention soil media (BSM); an HDPE geomembrane; crushed stone/pea gravel and gravel drainage course at the locations and elevations designated on the plans and as specified in the typical plan and cross sections.

604.1.02 Materials.

All materials for stormwater planters shall meet the requirements of the following Sections of the Standard Specifications except as provided below:

<table>
<thead>
<tr>
<th>Underdrain Pipe</th>
<th>706.06, 706.09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underdrain Backfill Material, Underdrain Type B</td>
<td>703.22</td>
</tr>
</tbody>
</table>

604.1.03 Underdrained soil media (USM)

The USM shall consist of a silty sand soil or soil mixture combined with 20% to 25% by volume of a moderately fine shredded bark or wood fiber mulch. The resulting mixture must have no less than 8% passing the 200 sieve and shall have a clay content of less than 2%. USM components shall be mixed thoroughly and uniformly in batches not to exceed 20 cubic yards or at the discretion of the supervising engineer. Soil filter media shall be permeable enough to insure drainage of the stormwater planter within 24 to 48 hours maximum. The sand used in the mixture shall meet the following specifications:

<table>
<thead>
<tr>
<th>Sieve Size Square Opening</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8”</td>
<td>100</td>
</tr>
<tr>
<td>No. 4</td>
<td>95-100</td>
</tr>
<tr>
<td>No. 8</td>
<td>80-100</td>
</tr>
<tr>
<td>No. 16</td>
<td>50-85</td>
</tr>
<tr>
<td>No. 30</td>
<td>25-60</td>
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<tr>
<td>No. 50</td>
<td>10-30</td>
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<tr>
<td>No. 100</td>
<td>2-10</td>
</tr>
<tr>
<td>No. 200</td>
<td>0-5</td>
</tr>
</tbody>
</table>

The material shall not have more than 45% passing any sieve and retained on the next consecutive sieve of those shown above.
604.1.04 Bioretention soil media (BSM)

The BSM shall meet the following specifications:

<table>
<thead>
<tr>
<th>Material</th>
<th>BSM Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Sand</td>
<td>50</td>
</tr>
<tr>
<td>% Double shredded Wood Chips</td>
<td>20</td>
</tr>
<tr>
<td>% Processed Water Treatment Residuals (WTR)</td>
<td>5-10</td>
</tr>
<tr>
<td>% Loamy Topsoil</td>
<td>10-15</td>
</tr>
<tr>
<td>CEC (meq/100 g)</td>
<td>≥5</td>
</tr>
<tr>
<td>Total Phosphorus (mg/kg)</td>
<td>&lt;100</td>
</tr>
<tr>
<td>pH</td>
<td>5.5-7.5</td>
</tr>
<tr>
<td>Organic Matter (% dryweight)</td>
<td>&gt;10%</td>
</tr>
<tr>
<td>Infiltration Rate (in./hr)</td>
<td>&gt;4</td>
</tr>
<tr>
<td>Oxalate Ratio (OR)</td>
<td>20-40</td>
</tr>
</tbody>
</table>

BSM components shall be mixed thoroughly and uniformly in batches not to exceed 20 cubic yards or at the discretion of the supervising engineer. Soil filter media shall be permeable enough to insure drainage of the stormwater planter within 24 to 48 hours maximum. No other materials or substances that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations can be mixed within the filter. The sand used in the mixture shall meet the following specifications:

<table>
<thead>
<tr>
<th>Sieve Size Square Opening</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8”</td>
<td>100</td>
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<tr>
<td>No. 4</td>
<td>95-100</td>
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<tr>
<td>No. 8</td>
<td>80-100</td>
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<td>2-10</td>
</tr>
<tr>
<td>No. 200</td>
<td>0-5</td>
</tr>
</tbody>
</table>

The material shall not have more than 45% passing any sieve and retained on the next consecutive sieve of those shown above.

The processed water treatment residuals shall have an extractable aluminum as measured by Mehlich 3 > 2000 mg/kg. Evaluation of WTR. Processed WTR shall have a minimum of 30% solids. WTR are typically processed and dried using a belt filter-press.

604.1.05 Crushed stone/pea gravel

The crushed stone/pea gravel shall consist of washed and screened natural sands or sands manufactured by crushing stones. The gradation shall be as follows:
### Sieve Size Square Opening

<table>
<thead>
<tr>
<th>Sieve Size Square Opening</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>3/8”</td>
<td>85-100</td>
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<td>No. 8</td>
<td>0-10</td>
</tr>
<tr>
<td>No. 16</td>
<td>0-15</td>
</tr>
</tbody>
</table>

#### 604.1.06 Submittals.

The contractor shall identify the source of each component of the soil filter media (USM and BSM). The Contractor shall submit a sample of the proposed USM and BSM mixtures to a qualified soil testing laboratory for performance of gradation testing and approval by the Design Engineer at least 10 working days prior to the delivery of the material to the site. The following protocol should be followed for the sampling and laboratory testing of the USM and BSM mixtures:

**A.** Submit samples of each type of material to be blended for the soil filter media (USM and BSM). Samples must be a composite of three grabs from the stockpile or pit face. Sample size required will be determined by the testing laboratory.

**B.** Submit samples of the underdrain bedding material. Samples must be a composite of three grabs from the stockpile or pit face. Sample size required will be determined by the testing laboratory.

**C.** Perform a sieve analysis conforming to AST C 136 (standard test method for sieve analysis of fine and coarse aggregates, 1996a) on each type of the sample material. The resulting soil filter media mixture must have 8% to 12% by weight passing the #200 sieve, a clay content of less than 2% (determined by hydrometer grain size analysis) and have 10% dry weight of organic matter.

**D.** Perform a permeability test on the soil filter media conforming to ASTM D 2434 with the mixture compacted to 90-92% of maximum dry density based on ASTM D 698.

**E.** Loamy topsoil, and processed water treatment residuals (WTR) shall be submitted for approval for the following tests: Soil Quality Analysis Package, Nutrient Management/Grid Sample Package with Mehlich-3 extraction for aluminum (Al), iron (Fe), and phosphorus (P) available at the Analytical Laboratory and Maine Soil Testing Service. Approval is based on the components usage to meet the BSM specifications detailed above.

**F.** Following approval of topsoil and WTR, the BSM shall be thoroughly blended and submitted for approval for the following tests: Soil Quality Analysis Package, Nutrient Management/Grid Sample Package with Mehlich-3 extraction for aluminum (Al), iron (Fe), and phosphorus (P) available at the Analytical Laboratory and Maine Soil Testing Service. The BSM shall have an oxalate ratio (OR) of 20-40. OR is defined as
\[ OR = \frac{(A_\text{Me} + F_{\text{Me}})}{P_{\text{Me}}} \]

G. Evaluation of the WTR and BSM can be assisted by the supervising engineer.

The Contractor shall provide samples of the underdrain backfill material and the pea gravel to a qualified soil testing laboratory for performance of gradation testing and approval by the Design Engineer at least 10 working days prior to the delivery of the material to the site.

604.1.07 Construction.

The contractor shall remove all asphalt and materials not to remain and rough areas the areas for construction of the stormwater treatment areas.

1. The area of the storm water treatment may be excavated in preparation of the installation of the underdrain and can be used for a sediment trap from the site during construction, as long as the basin is mulched and stabilized to prevent erosion.
2. The soil filter media (UCM and BCM) and vegetation must not be installed until the area that drains to the filter has been permanently stabilized with pavement or other structure, 90% vegetation cover, or other permanent stabilization. Otherwise, the runoff from the contributing area must be diverted around the filter until stabilization is completed.
3. If vegetation is not established within the first year, the contractor may install a 2-3 inch layer of sandy loam topsoil (with less than 2% clay) on the surface of the grass filter and reseed/mulch.
4. Inspection of the filter basin shall be provided for each phase of construction by the design engineer with required reporting to the MEDEP. At a minimum, the design engineer shall inspect the construction at the following phases:
   A. After preliminary construction of the filter grades and once the underdrain pipes are installed but not backfilled.
   B. After the drainage layer is constructed and prior to the installation of the filter media.
   C. After the filter media has been installed and seeded.
   D. After one year to inspect health of the vegetation and make corrections, and
   E. All material used for the construction of the underdrained soil filter basin shall be approved by the design engineer after tests by a certified laboratory show that they are passing the specifications.
4. Outlet connections shall be aligned and sealed to meet the approved drawings with modifications necessary to meet site conditions and local regulations.
5. Compaction of the soil bed material shall be avoided. If compaction occurs, rototill again prior to seeding or sodding.
6. No BSM shall be placed until after engineering approval, and inspection of subgrade.
604.1.08 **Method of Measurement.**

Each stormwater treatment area will be measured as an individual unit. Installation of stormwater treatment areas for Maine Mall Drainage Improvements will include all excavation, grading, materials, installation of treatment system, pipe and culvert installations, structures, restoration, stabilization, pavement repair, pavement marking refurbishment, curb replacement and other incidental work and labor necessary for the installation. The amount bid per each treatment area shall be full compensation for furnishing all labor, equipment and materials necessary to satisfactorily construct the treatment area.

604.1.09 **Basis of Payment.**

The stormwater treatment areas will be paid for at the contract unit price as specified complete in place. Payment shall be full compensation for furnishing and the installation of treatment area components including media, pea gravel, under drain backfill material, under drain piping, geotextile or geomembrane material, erosion control blankets, connection of under drain piping to the associated structures and testing for compliance with specifications including all equipment and labor, and all other incidentals necessary to complete the work.

Plantings will be measured and paid for separately as provided in Section 621 – Landscaping.

Excavation and backfill for stormwater treatment areas will be measured and paid for as provided in Section 206 – Structural Excavation.

Payment will be made under:

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SECTION 604.2

STORMWATER QUALITY FILTER TREATMENT DEVICE
(JELLYFISH)

604.2.01 Description:

Specifies requirements for construction and performance of an underground stormwater quality filter treatment device that removes pollutants from stormwater runoff through the unit operations of sedimentation, floatation, and membrane filtration.

604.2.02 Reference Standards

All materials for stormwater planters shall meet the requirements of the following Sections of the Standard Specifications except as provided below:

ASTM C 891: Specification for Installation of Underground Precast Concrete Utility Structures
ASTM D 4097: Contact Molded Glass Fiber Reinforced Chemical Resistant Tanks
ASTM C 478: Specification for Precast Reinforced Concrete Manhole Sections
ASTM C 443: Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
ASTM D 4101: Specification for Copolymer steps construction

604.2.03 Shop Drawings

Shop drawings for the structure and performance are to be submitted with each order to the contractor. Contractor shall forward shop drawing submittal to the consulting engineer for approval. Shop drawings are to detail the structure precast concrete and/or fiberglass (FRP) components.

604.2.04 Handling and Storage

Prevent damage to materials during storage and handling.

604.2.20 Products

A. General

1. The device shall be cylindrical or rectangular and constructed from precast concrete riser and slab components or monolithic precast structure(s), installed to conform to ASTM C 891 and to any required state highway, municipal or local specifications. Alternatively, the cylindrical device shall be constructed of fiberglass (FRP), installed to conform to applicable sections of state, provincial and municipal building codes, highway, municipal or local specifications for the construction of such devices.
2. **Cartridge Deck.** The cylindrical concrete device shall include a fiberglass insert. The rectangular concrete device shall include a coated aluminum insert. In either instance, the insert shall be bolted and sealed watertight inside the precast concrete chamber. Alternatively, the cylindrical fiberglass device shall include a fiberglass insert bolted and/or chemically welded watertight inside the fiberglass chamber. In each instance the insert shall serve as: (a) a horizontal divider between the lower treatment zone and the upper treated effluent zone; (b) a deck for attachment of filter cartridges such that the membrane filter elements of each cartridge extend into the lower treatment zone; (c) a platform for maintenance workers to service the filter cartridges; (d) a conduit for conveyance of treated water to the effluent pipe.

3. **Membrane Filter Cartridges.** Filter cartridges shall be comprised of cylindrical membrane filter elements connected to a perforated head plate. The number of membrane filter elements per cartridge shall be eleven 2.75-inch (70-mm) diameter elements. The length of each filter element shall be a minimum 15 inches (381 mm). Each cartridge shall be fitted into the cartridge deck by insertion into a cartridge receptacle that is permanently mounted into the cartridge deck. Each cartridge shall be secured by a cartridge lid that is threaded onto the receptacle. The maximum treatment flow rate of a filter cartridge shall be controlled by an orifice in the cartridge lid and based on a design flux rate (surface loading rate) determined by the maximum treatment flow rate per unit of filtration membrane surface area. The maximum flux rate shall be 0.21 gpm/ft^2 (0.142 lps/m^2).

Each lightweight membrane filter cartridge shall allow for manual installation and removal. Each filter cartridge shall have filtration membrane surface area and dry installation weight as follows:

<table>
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<tr>
<th>Filter Cartridge Length (in / mm)</th>
<th>Filtration Membrane Surface Area (ft^2 / m^2)</th>
<th>Filter Cartridge Dry Weight (lbs / kg)</th>
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<td>15</td>
<td>106 / 9.8</td>
<td>10 / 4.5</td>
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<td>282 / 26.2</td>
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<tr>
<td>54</td>
<td>381 / 35.4</td>
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4. **Backwashing Cartridges.** The filter device shall have a weir extending above the cartridge deck that encloses the high flow rate filter cartridges when placed in their respective cartridge receptacles within the cartridge deck. The weir shall collect a pool of filtered water during inflow events that subsequently automatically backwashes the high flow rate cartridges when the inflow event
subsides. All filter cartridges shall allow for use of a manual backwashing or filtration membrane rinsing procedure to restore flow capacity and sediment capacity and extend cartridge service life.

5. **Maintenance Access to Captured Pollutants.** The filter device shall contain an opening(s) that provides suitable maintenance access for removal of accumulated floatable pollutants and sediment.

6. **Bend Structure.** The device shall be able to be used as a bend structure with minimum angles between inlet and outlet pipes of 90-degrees or less in the stormwater conveyance system.

7. **Double-Wall Containment of Hydrocarbons.** The cylindrical precast concrete device shall provide double-wall containment for hydrocarbon spill capture by a combined means of an inner wall of fiberglass, to a minimum depth of 12 inches (305 mm) below the cartridge deck, and the precast vessel wall. Alternatively, a cylindrical device constructed of fiberglass (FRP) does not require double-wall containment as fiberglass is resistant to hydrocarbon penetration.

8. **Baffle.** The filter device shall provide a baffle that extends from the underside of the cartridge deck to a minimum length equal to the length of the membrane filter elements. The baffle shall serve to protect the membrane filter elements from contamination by floatables and coarse sediment. The baffle shall be a flexible continuous skirt in the cylindrical device. The baffle shall be a straight concrete or aluminum wall in the rectangular device.

9. **Sump.** The device shall include a minimum 24 inches (610 mm) of sump below the bottom of the cartridges for sediment accumulation, unless otherwise specified by the design engineer.

B. **Precast Concrete Sections.** All precast concrete components shall be manufactured to a minimum live load of HS-20 truck loading or greater based on local regulatory specifications, unless otherwise modified or specified by the design engineer.

C. **Gaskets.** All gaskets used for the concrete joints shall be manufactured using neoprene or nitrile rubber gaskets, to prevent deterioration from presence of captured petroleum hydrocarbons. Mastic sealants or butyl tape are not an acceptable alternative as they are prone to leakage of petroleum hydrocarbons.

D. **Frame and Cover.** Frame and covers must be manufactured from cast-iron and embossed with the name of the device manufacturer or the device brand name.

E. **Doors and Hatches.** If provided shall meet designated loading requirements at a minimum for incidental traffic.

F. **Concrete.** All concrete components shall be manufactured according to local specifications and shall meet the requirements of ASTM C 478.
G. **Fiberglass.** The fiberglass portion of the filter device shall be constructed in accordance with the following standard: ASTM D-4097: Contact Molded Glass Fiber Reinforced Chemical Resistant Tanks.

H. **Steps.** Steps shall be constructed according to ASTM D4101 of copolymer polypropylene, and be driven into preformed or pre-drilled holes after the concrete has cured, installed to conform to applicable sections of state, provincial and municipal building codes, highway, municipal or local specifications for the construction of such devices.

I. **Inspection.** All precast concrete sections shall be inspected to ensure that dimensions, appearance and quality of the product meet local municipal specifications and ASTM C 478.

### 604.2.30 Performance

#### A. General

1. **Function** - The stormwater quality filter treatment device shall function to remove pollutants by the following unit treatment processes; sedimentation, floatation, and membrane filtration.

2. **Pollutants** - The stormwater quality filter treatment device shall remove oil, debris, trash, coarse and fine particulates, particulate-bound pollutants, metals and nutrients from stormwater during runoff events.

3. **Bypass** - The stormwater quality filter treatment device shall typically utilize an external bypass to divert excessive flows.

4. **Treatment Flux Rate (Surface Loading Rate)** – The stormwater quality filter treatment device shall treat 100% of the required water quality treatment flow based on a maximum treatment flux rate (surface loading rate) across the membrane filter cartridges of 0.21 gpm/ft\(^2\) (0.142 lps/m\(^2\)).

#### B. Inspection And Maintenance

1. Inspection which includes trash and floatables collection, sediment depth determination, and visible determination of backwash pool depth shall be easily conducted from grade.

2. Manual rinsing or backflushing of the filter cartridges shall be possible to restore the flow capacity and sediment capacity of the filter cartridges and therefore extend cartridge service life.

3. The filter device shall have a minimum 12 inches (610 mm) of sediment storage depth.
4. Sediment removal from the filter treatment device shall be conducted using a standard maintenance truck and vacuum apparatus, and a minimum one point of entry to the sump that is unobstructed by filter cartridges.

5. Filter cartridges shall be easily maintained without the use of additional lifting equipment.

604.2.40 Execution

A. Installation

1. Precast Device Construction Sequence

   The installation of a precast concrete device should conform to ASTM C 891 and to any state highway, municipal or local specifications for the construction of manholes. Selected sections of a general specification that are applicable are summarized below.

   a. **Precast Device Construction Sequence** The precast concrete device is installed in sections in the following sequence:

      - aggregate base
      - base slab
      - treatment chamber and cartridge deck riser section(s)
      - bypass section
      - connect inlet and outlet pipes
      - riser section and/or transition slab (if required)
      - maintenance riser section(s) (if required)
      - frame and access cover

   b. The precast base should be placed level at the specified grade. The entire base should be in contact with the underlying compacted granular material. Subsequent sections, complete with joint seals, should be installed in accordance with the precast concrete manufacturer’s recommendations.

   c. Adjustment of the stormwater quality treatment device can be performed by lifting the upper sections free of the excavated area, re-leveling the base, and re-installing the sections. Damaged sections and gaskets should be repaired or replaced as necessary. Once the stormwater quality treatment device has been constructed, any lift holes must be plugged watertight with mortar or non-shrink grout.

   d. **Inlet and Outlet Pipes** Inlet and outlet pipes should be securely set into the device using approved pipe seals (flexible boot connections, where applicable) so that the structure is watertight.
e. Frame and Cover Installation Adjustment units (e.g. grade rings) should be installed to set the frame and cover at the required elevation. The adjustment units should be laid in a full bed of mortar with successive units being joined using sealant recommended by the manufacturer. Frames for the cover should be set in a full bed of mortar at the elevation specified.

B. Fiberglass (FRP) Device Construction

1. Fiberglass (FRP) Device Construction Sequence The installation of the FRP device should conform to applicable sections of state, provincial and municipal building codes, highway, municipal or local specifications for the construction of such devices. Selected sections of a general specification that are applicable are summarized below. For detailed installation instructions refer to the submitted drawing and installation details.

   a. Structural Proposed installation details shall conform with all federal, provincial, state, municipal or other local specifications as may be applicable, including all building code requirements.

   b. Water Quality Device Construction Sequence The water quality FRP device is installed in the following sequence:

   o Water quality device as delivered to site placed on prepared bedding or slab using spreader bars and the lifting lugs provided on the structure. Avoid lifting chains or cables from contacting sides of tank. Do not drop, roll or slide vessel.

   o Backfill using approved back fill material

   o Pour anti-buoyancy slab as required per the drawing

   o Connect inlet and outlet pipes

   o Riser sections and/or transitions (if required and if shipped separately)

   o Frame and access cover

   c. Frame and Cover Installation No direct structural connection shall be permitted to any FRP maintenance access surface riser pipe. No vertical structural connection shall be permitted to any FRP component under any circumstances unless approved by the manufacturer.

      A minimum 1-inch (25 mm) gap shall be left around and above any required FRP maintenance access surface risers (i.e. not a buried installation), with this gap filled with pea gravel or approved fill material against the surrounding structure that must support the frame and cover in its entirety.

C. Maintenance Access Wall

In some instances the Maintenance Access Wall, if provided, shall require an extension attachment and sealing to the precast wall and cartridge deck at the job site,
rather than at the precast facility. In this instance, installation of these components shall be performed according to instructions provided by the manufacturer.

D. Filter Cartridge Installation  Filter cartridges shall be installed in the cartridge deck after the construction site is fully stabilized, unless otherwise specified by the design engineer.

604.2.50 Quality Assurance

A. Filter Cartridge Installation  Manufacturer shall coordinate delivery of filter cartridges and other internal components with contractor. Filter cartridges shall be delivered and installed complete after site is stabilized and unit is ready to accept cartridges. Contractor shall take appropriate action to protect the filter cartridge receptacles and filter cartridges from damage during construction. For systems with cartridges installed prior to full site stabilization and prior to system commissioning, the contractor can plug inlet and outlet pipes to prevent stormwater from entering the device. Plugs must be removed after the device has been commissioned.

B. Inspection And Maintenance

1. The manufacturer shall provide an Owner’s Manual upon request.

2. After construction and installation, and during operation, the device shall be inspected and cleaned as necessary based on the manufacturer’s recommended inspection and maintenance guidelines.

C. Replacement Filter Cartridges  When replacement membrane filter elements and/or other parts are required, only membrane filter elements and parts approved by the manufacturer for use with the stormwater quality filter device shall be installed.

604.2.60 Method of Measurement.

Each stormwater quality filter treatment device will be measured as an individual unit.

604.2.70 Basis of Payment.

The stormwater quality filter treatment device will be paid for at the contract unit price each as specified complete in place. Payment shall be full compensation for furnishing and the installation of device, components and associated appurtenances including all excavation, grading, materials, installation of treatment system, pipe and culvert installations, structures, restoration, stabilization, pavement repair, pavement marking refurbishment, curb replacement equipment and labor, and all other incidentals necessary to complete the work.

Excavation and backfill for stormwater treatment areas will be measured and paid for as provided in Section 206 – Structural Excavation.
Payment will be made under:

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SECTION 604.3

ESPLANADE BOX FILTER

604.3.01 Description:

The Contractor shall furnish and install the Esplanade Box Filter (EBF), complete and operable as shown and as specified herein, in accordance with the requirements of the plans and contract documents. The EBF shall consist of an underground precast structure that houses a biofiltration component consisting biofiltration soil mixture and a plant where indicated. The Precast structure shall also consist of an internal bypass (or external if necessary) constructed in such a way as to allow bidirectional flow to be treated prior to bypass occurring. Bypass of flows shall be designed in such a way as to direct flows that exceed the capacity of the treatment components away from those components so as to prevent scour and washout of previously captured pollutants.

604.3.02 Submittals

A. Contractor to submit shop drawings for the EBF system with vault, biofiltration soil mixture, plant and accessory equipment. Drawings shall include principal dimensions, placement of internal components, location of piping and unit foundation.

B. Manufacturer shall submit the following guides and manuals:
   1. Design, Operation, and Performance Guide
   2. Installation, Activation, and Planting Guide

604.3.20 Materials

All internal components including ABS and PVC piping, manifold and under-drains, biofiltration soil mixture and sub-base and filter media (as specified on the plans by the Engineer), tree grates and hatches, internal walls and weirs and plant shall be provided by the manufacturer.

A. Vault

1. Precast Concrete Vault

   a. Concrete shall have an unconfined compressive strength at 28 days of at least 3000 psi, with ¾ - inch round rock, a 4 - inch slump maximum, and shall be placed within 90 minutes of initial mixing.

   b. Silicone Sealant shall be pure RTV silicone conforming to Federal Specification Number TT S001543A or TT S00230C or Engineer approved.
c. Grout shall be non-shrink grout meeting the requirements of Corps of Engineers CRDC588. Specimens molded, cured and tested in accordance with ASTM C - 109 shall have minimum compressive strength of 6,200 psi. Grout shall not exhibit visible bleeding.

2. Precast Concrete Vault Components
   
a. Precast concrete vault shall be provided according to ASTM C857 and C858.

   b. Vault joint sealant shall be Conseal CS - 101 or approved equal.

   c. If interior concrete baffle walls are provided, baffle walls shall be sealed to the interior vault walls and floor with a polyurethane construction sealant rated for use below the waterline, SikaFlex 1a or equal. Contractor to provide sealant material and installation unless completed prior to shipment.

   d. Grates, frames and covers shall be shall meet AASHTO H - 20 loading requirements, and shall be provided according to ASTM A48.

3. Internal Components
   
a. ABS manifold pipe and fittings shall meet ASTM F628. PVC manifold pipe and fittings shall meet ASTM D1785.

   b. Biofiltration soil mixture shall be provided by manufacturer or approved alternate source. Biofiltration soil mixture shall have the following capabilities and characteristics:

   1. Infiltration capacity of at least 100”/hr to be maintained over the filtration bed via an outlet control disc.
   2. Organic content shall be between 10% - 15% by volume and shall be provided in a stable granular format.
   3. Water retention shall be a minimum of 80 mL/L after 1 hour of gravity drainage.
   4. Minimum cation exchange capacity shall be 20 meq / 100g.
   5. Bulk density shall be 0.75 - 1.2 g/cm³.

   c. Internal bypass shall be constructed of 14 gauge carbon steel with powder coating or vacuum formed ABS.

B. Plant
   
   1. Plant: Where indicated, plant shall be Myrica Pennsylvanica (Northern Bayberry), 24” – 36”. Plant shall conform to the specifications of Section 621 – Landscaping.
2. Bedding and Backfill Material

   a. Crushed rock base material used as sub-base for vault shall be six-inch minimum layer of ¾” inch minus rock. Compact undisturbed subgrade materials to 95% of maximum density at +/- 2% of optimum moisture content. Unsuitable material below subgrade shall be replaced to engineer’s approval.

   b. Backfill material shall be ¾” minus crushed rock, or approved equal.

604.3.30 Construction

A. Precast Concrete Vault

   1. Set precast vault on crushed rock base material that has been placed in maximum 12” lifts, loose thickness, and compacted to at least 95% of the maximum dry density as determined by the standard Proctor compaction test, ASTM D698, at moisture content of +/- 2% of optimum water content.

   2. Vault floor shall slope 1/4 inch maximum across the width and slope downstream 1” per 12’ of length. Vault top finish grade shall be even with surrounding finish grade surface unless otherwise noted on plans.

   3. Outlet pipe shall be stubbed in and connected to precast concrete vault according to Engineer’s requirements and specifications.

   4. If grout is used, Contractor to grout all inlet and outlet pipes flush with or protruding up to 2” into interior of vault.

B. Ballast

   1. When required, ballast shall be placed to the dimensions specified by the engineer and noted on the data block. Ballast shall not encase the inlet and/or outlet piping. Provide 12” clearance from outside diameter of pipes.

C. Clean Up

   1. Remove all excess materials, rocks, roots, or foreign material, leaving the site in a clean, complete condition approved by the engineer. All filter and media components shall be free of any foreign materials including concrete and excess sealant.

D. Activation

   1. The biofiltration soil mixture is installed prior to the vault being delivered to the site. Pre-installed construction runoff debris barriers are used to protect these internal components from sediment and other debris during construction.
Activation of the system consists of removing these barriers and shall be performed once the site is fully stabilized. Manufacturer is responsible for activation of the system.

E. Planting

1. Selection of the plant shall comply with all specifications listed in section 604.3.20 B. Manufacturer is responsible for providing and planting the tree.

604.3.40 Performance

A. Overflow

1. Each tree box filtration system shall include an internal overflow that will convey flows in excess of the design water quality flow rate directly to the outlet chamber without passing through the biofiltration. Water shall enter an inlet bay that is separate from the biofiltration through a curb inlet. Low flows travel from the inlet bay, through a transfer opening and into the biofiltration and media cartridge bays. High flows enter the outlet bay by overtopping a weir separating the inlet and outlet bay. Flow rates exceeding the water quality design flow shall not enter the biofiltration or media cartridge bays. An internal bypass shall have a minimum capacity of 2.0 cfs with no greater than one inch depth of flow at the curb face.

B. System Configuration

1. Each tree box filtration system shall be capable of accepting flow into the curb inlet from any direction within 180 degrees of the curb face while maintaining the flow pattern described in section A.1. Specifically, the tree box filtration system shall be configured such that flow rates up to and including the water quality design flow rate are conveyed in their entirety to the biofiltration. At higher flow rates, the portion of flow entering the system inlet exceeding the water quality design flow rate will be routed directly to the outlet bay. Treated flows shall be directed initially to the biofiltration bay for treatment as described in section 4.3. When the treatment capacity of the biofiltration bay is exceeded, untreated water shall pass through a port connecting the biofiltration bay and media cartridge bay. Flow entering the media cartridge bay will pass through filter cartridge(s) as described in section 4.4. The biofiltration bay and media cartridge bays shall each have separate outlets discharging treated flow directly to the outlet bay.

C. Biofiltration Design

1. Each tree box filtration system shall include a biofiltration component comprised of a biofiltration soil mixture and vegetation as specified in section 604.3.20 B, if indicated. The design infiltration rate of the biofiltration soil mixture shall be controlled by a flow control device and not exceed 100 inches per hour with a maximum of 7 inches of pooled water over the biofiltration soil mixture.
D. Sediment Removal

1. Sediment removal shall occur within the biofiltration soil mixture such that at the design infiltration rate of 100”/hr, the total suspended solids concentration of the treated stormwater is at least 90% lower than the concentration of the untreated influent based on laboratory testing of Sil - Co - Sil 106, a silica based silt with a d50 of 25 microns. The tree box filtration system manufacturer shall furnish documentation that supports this level of performance in laboratory tests.

2. Sediment removal shall occur within the filter media cartridges such that at the design loading rate specified, the total suspended solids concentration of the treated stormwater is at least 80% lower than the concentration of the untreated influent based on laboratory testing of Sil - Co - Sil 106, a silica based silt with a d50 of 25 microns. The tree box filtration system manufacturer shall furnish documentation that supports this level of performance in full scale laboratory tests that are independently conducted or independently verified. Additionally, similar sediment removal performance of the filter media cartridges must be demonstrated in field installations with peer reviewed documentation.

604.3.50 Method of Measurement.

The esplanade box filters will be paid for at the contract unit price each as specified complete in place. Payment shall be full compensation for furnishing and the installation of device, components and associated appurtenances including all excavation, grading, materials, installation of treatment system, pipe and culvert installations, structures, restoration, stabilization, pavement repair, pavement marking refurbishment, curb replacement equipment and labor, and all other incidentals necessary to complete the work.

604.3.60 Basis of Payment.

The esplanade box filter will be paid for at the contract unit price as specified complete in place. Payment shall be full compensation for furnishing and the installation of device, components and associated appurtenances including all equipment and labor, and all other incidentals necessary to complete the work.

<table>
<thead>
<tr>
<th>Pay Item</th>
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</tr>
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<tbody>
<tr>
<td>604.4101</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>604.4102</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>604.4103</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>604.4104</td>
<td>Esplanade Box Filter, EBF-4</td>
</tr>
<tr>
<td>604.4105</td>
<td>Esplanade Box Filter, EBF-5</td>
</tr>
<tr>
<td>604.4106</td>
<td>Esplanade Box Filter, EBF-6</td>
</tr>
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<td>604.4107</td>
<td>Esplanade Box Filter, EBF-7</td>
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<td>604.4108</td>
<td>Esplanade Box Filter, EBF-8</td>
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<td>604.4109</td>
<td>Esplanade Box Filter, EBF-9</td>
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<tr>
<td>604.4110</td>
<td>Esplanade Box Filter, EBF-10</td>
</tr>
</tbody>
</table>
SECTION 608

SIDEWALKS, PAVERS, AND DETECTABLE WARNING

The provisions of Section 608 of the Standard Specifications shall apply with the following additions and modifications.

608.01 Description

This paragraph shall be revised to read as follows:

Re-construction of asphalt sidewalks.

608.02 Materials

Materials shall meet the requirements specified in the following Sections of Division 700 - Materials and the Supplemental Specifications:

Bituminous paved sidewalks shall meet the requirements of Section 403 - Hot Bituminous Pavement.

The new aggregate required to build new sidewalk shall meet the requirements of Standard Specification 703.06(a) Aggregate Base and Subbase, Type D. New aggregate for regrading an existing sidewalk shall meet the requirements of Section 703.10 - Untreated Surface Course and Leveling.

Standard compacting will be required for all areas where 6 in. or more new or disturbed aggregate is placed. Where 6 in. or less is placed, compaction will be achieved by plate compactor, hand tamp or other means approved by the Resident.

608.04 Hot Bituminous Sidewalk

A. **Excavation:** Excavation shall be to the required depth and width. The foundation shall be shaped and compacted to a firm even surface conforming to the section shown on the plan. All soft and yielding material shall be removed and replaced with acceptable material.

B. **Base Course:** Base course material shall be placed as shown on the plans and each layer thoroughly compacted.

C. **Placing Bituminous Sidewalk Material:** Bituminous sidewalk material shall be placed on the compacted base course in two courses to provide the required depth when rolled. Compaction shall be by a power roller having a minimum total weight of 900 kg [1 ton] with a minimum of 1160 kg/m [65 lb/in] of width of the drive roll or by satisfactory power vibratory compaction equipment. In areas inaccessible to other equipment, hand tamping will be permitted. In any case, the bituminous sidewalk material shall be uniformly compacted.

608.42 Construct Sidewalk
The work shall consist of excavating the existing ground, placing and compacting new aggregate as necessary to build the sidewalk in the new location as shown on the plans and typical sections. The cost of Constructing Sidewalk is incidental to the square foot price of the sidewalk items.

608.43 Regrading Sidewalk

The work shall consist of removing the existing pavement, adding and compacting new aggregate as necessary and regrading the gravel base to conform to the existing grade or as indicate din the plan details.

608.05 Method of Measurement

Bituminous sidewalks reconstructed as part of installation of stormwater treatment systems on Maine Mall Road shall be incidental to the installation and no separate pavement will be made.
SECTION 609

CURB

The provisions of Section 609 of the Standard Specifications shall apply with the following additions and modifications:

609.01 Description

This work shall include all five inch (5") straight and circular Vertical Curb Type #5 to be set. Material shall be in accordance with Section 712.04 except that drill holes through the curb will not be allowed.

609.03 Vertical Stone Curb, Terminal Section and Transition Sections

All joints of the curb shall have a four inch (4") by eight and one half inch (8-1/2") pad on the back side. The pad shall be filter fabric such as that used for underdrain or for roadway stabilization. The pad shall be placed in full contact with the curb from a half inch (1/2") below top of curb to two inches (2") below gutter grade and backfilled to hold in place.

609.082 Removing and Stacking Vertical Curbing, Terminal Curbing, Transition Sections, Curb Inlets, and Curb Corners (Type 5)

The Contractor shall be responsible for the removal without damage, cleaning and stacking a City designated location, all straight and curved curbing, terminal sections and curb corners which are designated to be removed and stacked (R & S). Removal of curbing so designated shall be in accordance with the requirements of Subsection 609.08a.

Each section of straight curbing shall have its overall length painted legibly and plainly on one end. Each section of circular curbing shall have its overall arc length and radius painted on one end.

Removing and stacking curb or edging shall include all labor, equipment, tools and materials for excavating, removing, cleaning, backfilling, handling, stacking and any incidental work necessary.

609.09 Method of Measurement

All proposed new straight and circular curb to be set and existing curb to be reset will be measured by the linear foot along the face of the curb, complete in place. The resetting of curbs for tipdowns will be considered incidental to removal and replacement of curb. Curb removed and stacked will be measured by the linear foot as stacked at the City designated location.
609.10 Basis of Payment

The accepted quantity of new curb and reset existing curb will be paid for at the contract unit price, complete in place. This price shall include the cost of excavation and all labor, materials and equipment necessary to satisfactorily complete the work. The accepted quantity of curb removed and stacked shall be paid for at the contract unit price per linear foot.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>609.11</td>
<td>Install New 5 Inch Vertical Granite Curb, Type 5 – Straight Linear Foot</td>
</tr>
<tr>
<td>609.38</td>
<td>Remove and Reset Existing Granite Curb        Linear Foot</td>
</tr>
</tbody>
</table>
SECTION 609.1

CONCRETE SLIPFORM CURB

Section 609 of the Standard Specifications shall apply with the following additions and modifications

609.1.01 Description

This work shall consist of constructing concrete curbing by slipform construction and incidental construction as shown on the plans, or as directed by the Resident. Except as otherwise specified in this Section, the work shall conform with the applicable provisions of Section 515 - Protective Coating for Concrete Surfaces.

609.1.02 Materials

Concrete shall be Class A. Concrete for slipform curbing will meet the same requirements under 502.05 with the exception that chloride permeability will be waived. This includes a minimum compressive strength of 30 MPa [4350 psi]. Entrained air will meet current requirements of 6 – 8.5%. Depending on aggregate source proposed for use, the ASR requirement will be enforced and may require a pozzolan addition to the mix.

Type 6 – Concrete Slipform Curb

a. Installation Concrete may be placed with an approved slipform machine that will produce a concrete curb substantially similar to a MDOT, Type 3, mold 1 curb to the design specified in the plans and will meet the same standards set for cast-in-place curbing. For cold weather slipforming, the outside temperature must be at least 2.2°C [36°F] and rising. The curb shall be placed on a firm uniform bearing surface, shall conform to the section profile specified in the plans and shall match the appropriate grade. Proper curing shall be ensured through the use of a spray-applied pigmented curing compound that meets the requirements of AASHTO M 148, Type 2 Liquid Membrane-Forming Compounds for Curing Concrete. Expansion joints will be provided at ends of curve radii or wherever the curb meets rigid structures such as building foundations or fire hydrants. Contraction joints will be placed at 3 m [10 ft] intervals using sawing methods. Contraction Joints shall be cut 25 to 75mm [1 to 3 in] into the concrete. Joints shall be constructed perpendicular to the pavement and match other joints in roadways, sidewalks or other structures when applicable. Construction joints will be used at the end of a day’s construction or when the placement of concrete is interrupted by more than 30 minutes. The use of an insert bar to create a plane of weakness will not be permitted, control joints will be used.

Terminal curb will be installed according to the Details.

b. Control Joints Control Joints are partial depth and are used to create a plane of weakness in the concrete to control the location of drying shrinkage cracks.
c. **Isolation Joints** Isolation Joints are full depth and are used to prevent cracking due to differential movement.

d. **Construction Joints** Construction Joints are full depth and are used at the end of a day’s construction or when the placement of concrete is interrupted by more than 30 minutes.

e. **Backfilling** Backfilling will be in accordance with Standard Specification 609.03(b).

f. **Protection** Protection will be in accordance with section 609.03 (c). In addition the following will apply:

   Slipform curbing must be adequately protected after placement. The concrete shall be allowed to cure for at least 72 hours. During cold weather conditions, when temperatures drop below the required temperature of 36°F (2.2°C) after placement, curbing shall be protected by concrete blankets or a combination of plastic sheeting and straw. After any placement of slipform curbing, regardless of weather conditions, the placed curbing shall be adequately protected by traffic control devices and flagging as necessary.

g. **Finishing** Finished surfaces of the curb and or curb/gutter shall be roughened by brooming lightly or other method acceptable to the Resident.

   Membrane curing compounds shall be a Type 2, white pigmented product selected from the Department's Qualified Products List of Concrete Curing Compounds.

   Curing compound will be applied in two applications immediately after the final finishing. The second application will be perpendicular in direction to the first application to ensure complete coverage.

   Any voids or surface irregularities shall be repaired using the concrete grout from the same concrete load and a float shall be used on the repaired areas prior to texturing.

   All edges of concrete shall be rounded with an approved edging tool while the concrete is still plastic and shall leave a true smooth surface.

   The contractor shall be responsible for the maintenance of the curb and gutter until completion and acceptance of the project.

h. **Repair and Replacement** Any curb or gutter which does not conform to the specifications shall be repaired and or replaced as directed by the City. If the repair and replacement results in the need for repairs and adjustments to the materials adjacent to the curb and gutter, the Contractor shall carry out the repairs and adjustments at his own expense and to the satisfaction of the City.
609.1.03 Submittals

Contractor shall submit curb mold design for review and approval by the engineer.

609.1.09 Method of Measurement

Note: The installation of Slipform Curbing for the JF-3 improvements of the Maine Mall Road Drainage Improvements will be incidental to the installation of the treatment system. Preparation of the existing surface and any necessary excavation prior to the placement of curb will not be paid for directly, but will be considered incidental to curb items. Backing up concrete curb is incidental to the curb items. No separate payment will be made.
SECTION 610

RIP RAP

610.01 Description: This work shall include the following:

a. Furnish all materials, labor and equipment necessary to install the rip rap outfalls/stilling basins and aprons shown on the plans for the Sunset Avenue Gravel Wetland Pond item.

b. The work shall include all excavation, granular bedding, and plain rip rap as detailed on design plans

610.02 Method of Measurement

The accepted rip rap quantity will be measured as a lump sum included in installation of the stormwater treatment areas, stormwater quality filter treatment devices or esplanade box filters; no separate measurement will be made.

610.02 Basis of Payment

The accepted payment for rip rap is incidental as indicated above; no separate payment will be made.
SECTION 615
LOAM, SEED AND MULCH

The provisions of Section 615 of the Standard Specifications shall apply with the following additions and modifications:

615.01 Description

This work will consist of the installation of loam below areas of bark mulch that will not be seeded.

This work shall consist of loaming and seeding areas as shown on the plans or as required.

Loam and its applications shall conform to the requirements of Section 615 of the Standard Specifications. Loam shall have a finished depth of four (4") inches, unless noted otherwise, and shall be screened through a one (1") inch square mesh screen.

Seeding shall be Method Number 1 and shall conform to the requirements of Section 618 of the Standard Specifications. The Contractor shall be required to continually seed area of loam and seed until a satisfactory growth of grass is established.

If so required, all areas to be loamed and seeded shall be mulched with an approved wood cellulose fiber compatible with recommended hydro seeding practices. This mulch shall be applied simultaneously with the seed and shall be of sufficient quantity to protect the seed and hold moisture in to insure a satisfactory growth of grass.

The specifications for the wood cellulose fiber proposed to be used shall be presented to the Engineer for acceptance at least ten (10) days (working days) prior to the application thereof.

The Contractor shall also be responsible for mowing any and all areas loamed and seeded. The mowings will be required if deemed necessary to insure and maintain a satisfactory growth of grass and shall not exceed two mowings.

615.01 Materials

Detention basin (RTP-12) shall be seeded with a wet meadow/wildflower mix that contains seeds of the following grasses and plants:

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elymus virginicus</td>
<td>Virginia Wild Rye</td>
</tr>
<tr>
<td>Schizachyrium scoparium</td>
<td>Little Bluestem</td>
</tr>
<tr>
<td>Carex vulpinoidea</td>
<td>Fox Sedge</td>
</tr>
<tr>
<td>Andropogon gerardii</td>
<td>Big Bluestem</td>
</tr>
<tr>
<td>Panicum virgatum</td>
<td>Switch Grass</td>
</tr>
<tr>
<td>Plant Name</td>
<td>Common Name</td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Agrostis scabra</td>
<td>Rough Bentgrass/Ticklegrass</td>
</tr>
<tr>
<td>Aster novae-angliae</td>
<td>New England Aster</td>
</tr>
<tr>
<td>Eupatorium perfoliatum</td>
<td>Boneset</td>
</tr>
<tr>
<td>Euthamia graminifolia</td>
<td>Grass Leaved Goldenrod</td>
</tr>
<tr>
<td>Verbena hastata</td>
<td>Blue Vervain</td>
</tr>
<tr>
<td>Scirpus atrovirens</td>
<td>Green Bulrush</td>
</tr>
<tr>
<td>Juncus effusus</td>
<td>Soft Rush</td>
</tr>
<tr>
<td>Scirpus cyperinus</td>
<td>Wool Grass</td>
</tr>
</tbody>
</table>

Mix shall be applied on clean weed free bare soil. Seed shall be applied at a rate of 35lbs/acre in the Spring or late Summer. Seed may be placed by hydro seeding. Seeding shall be lightly raked to ensure proper seed to soil contact. Seeding shall include a light mulching of clean weed-free straw. Contractor shall install weed-free hay bales down slope of the rip-rap slope to protect seeding.

615.05 Method of Measurement

The first paragraph of this subsection will be modified as follows: Delete “per cubic yard” and replace with “per square foot.”

Note: The seeding of RTP-12 and seed and mulch for the Maine Mall Road Drainage Improvements will be incidental to the installation of the treatment system. No separate payment will be made.

Note: Seed and mulch for the stabilization of the disturbed areas for Maine Mall Road Sanitary Sewer Improvements and Drainage Improvements projects will be incidental to the installation of the sanitary lines and treatment systems. No separate payment will be made.

615.06 Basis of Payment

The accepted quantity of loam for Gorham Road will be paid for at the contract cubic foot price.

The accepted quantity of loam, seed and mulch for Gorham Road will be paid for at the contract square foot price. This price shall include the cost of excavation and all labor, materials, and equipment necessary to satisfactorily complete the work. All costs for watering, furnishing labor and equipment for mowing will not be paid for separately, but shall be considered as incidental to this pay item.
Payment will be made under:

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<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Pay Unit</th>
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<tbody>
<tr>
<td>615.07</td>
<td>Loam</td>
<td>Cubic Yard</td>
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<tr>
<td>615.071</td>
<td>Loam, Seed &amp; Mulch</td>
<td>Square Foot</td>
</tr>
<tr>
<td>615.143</td>
<td>Special Seeding Mix</td>
<td>Incidental</td>
</tr>
</tbody>
</table>
SECTION 619

MULCH

619.01 Description

This work shall consist of furnishing and applying bark much covering areas with mulch as shown on the plans or authorized.

619.07 Basis of Payment

Note: mulch for the planting and tree areas for the Maine Mall Road Drainage Improvements Project will be incidental to the installation of the treatment systems. No separate payment will be made.

The accepted quantity of bark mulch for Gorham Road will be paid for at the contract square foot price. This price shall include the cost of excavation and all labor, materials, and equipment necessary to satisfactorily complete the work. All costs for watering, furnishing labor and equipment for mowing will not be paid for separately, but shall be considered as incidental to this pay item.

Payment will be made under:

<table>
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<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>619.1301</td>
<td>Bark Mulch</td>
</tr>
<tr>
<td></td>
<td>Cubic Yard</td>
</tr>
</tbody>
</table>
SECTION 620

GEOTEXTILES

The provisions of Section 620 of the Standard Specifications shall apply with the following additions and modifications:

620.01 Description

This work shall consist of the furnishing and installation of woven geotextiles or non-woven geotechnical fabric, hereinafter called fabric as shown on the drawings or as otherwise directed. This section is intended for use in conjunction with Section 722 - Geotextiles.

620.02 Materials

Geotextiles shall meet the requirements in the following Sections of Division 700 - Materials:

- Stabilization/Reinforcement Geotextile  722.01
- Drainage Geotextile  722.02
- Erosion Control Geotextile  722.03
- Separation Geotextile  722.04

620.08 Method of Measurement

The installation of geotextiles for pipe installation, manhole and catch basin installation shall be as shown on the drawings and is incidental to the pipe or structure installation in Sections 603 and 604 and shall require no measurement or payment.

The installation of geotextile for riprap or armor layers shall be as shown on the drawings and is incidental to these items and shall require no measurement or payment.

614.05 Basis of Payment

The installation of geotextile is incidental to other items including pipe installation, manholes and catch basins, riprap outfall protection and other locations shown on the Contract Drawing and no separate payment will be made.
SECTION 621

LANDSCAPING

621.0001 Description

This work shall consist of the Contractor furnishing and planting trees, shrubs, vines, and other plants and shall include all planting operations and material as well as the care and replacement of the plants during the establishment period, all in accordance with the specifications, planting plans and schedules and the directions of the Engineer.

621.0036 Establishment Period

Contractor shall adhere to all provisions of 621.0036. In addition, the Contractor is responsible for all plantings through the 2nd growing season. Rate of establishment for trees shall be 100% and 95% for other plants unless plants have obvious damage or severe environmental conditions beyond the control of the Contractor. Contractor shall provide a two year warranty bond in a value of 50% of the contract value for the plantings for the project. Any plantings that are replanted during the second growing season less than the rate of establishment for trees and plants shall be bonded for an additional year at 200% of their value.

621.0038 Basis of Payment

Note: mulch for the planting and tree areas for the Maine Mall Road Drainage Improvements project will be incidental to the installation of the treatment systems. No separate payment will be made.

The accepted quantity for plants will be per each unit. This price shall include the cost of excavation and all labor, materials, and equipment necessary to satisfactorily complete the work. All costs for watering, furnishing labor and initial fertilization will not be paid for separately, but shall be considered as incidental to this pay item.

Payment will be made under:

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<tr>
<td>621.201</td>
<td>Medium Deciduous Tree (2 1/2&quot; cal.), Group A Each</td>
</tr>
<tr>
<td></td>
<td>Prunus X 'Accolade' (Accolade Cherry)</td>
</tr>
<tr>
<td></td>
<td>Pyrus Calleryana 'Cleveland' (Cleveland Pear)</td>
</tr>
<tr>
<td></td>
<td>Syringa Reticulata 'Ivory Silk' (Ivory Silk Tree Lilac)</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>621.273</td>
<td>Large Deciduous Tree (2 1/2&quot; cal.), Group A</td>
</tr>
<tr>
<td></td>
<td>Ginkgo Biloba 'Saratoga' (Saratoga Ginkgo)</td>
</tr>
<tr>
<td></td>
<td>Zelkova Serrata 'Green Vase' ('Green Vase Zelkova)</td>
</tr>
<tr>
<td>621.559</td>
<td>Deciduous Shrub (24&quot; - 30&quot;) Group A</td>
</tr>
<tr>
<td></td>
<td>Forsythia Courtasol (Gold Tide Forsythia)</td>
</tr>
<tr>
<td></td>
<td>Spirea X Japonica 'Magic Carpet' (Magic Carpet Spirea)</td>
</tr>
<tr>
<td>621.560</td>
<td>Deciduous Shrub (No. 2 Cont.) Group B</td>
</tr>
<tr>
<td></td>
<td>Rhus Aromatica 'Gro-Low' (Fragrant Sumac)</td>
</tr>
<tr>
<td>621.712</td>
<td>Herbaceous Perennial (No. 1 Cont.) Group A</td>
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<tr>
<td></td>
<td>Calamagrostis Acutiflora 'Karl Forester' (Karl Forester Feather Reed Grass)</td>
</tr>
<tr>
<td></td>
<td>Hemerocallis, mix varieties (Daylilies)</td>
</tr>
<tr>
<td></td>
<td>Iris Sibirica (Caesar's Brother)</td>
</tr>
<tr>
<td></td>
<td>Miscanthus Sinensis 'Gracillimus' (Maiden Grass)</td>
</tr>
<tr>
<td></td>
<td>Miscanthus Sinensis 'Purpureascens' (Flame Grass)</td>
</tr>
<tr>
<td></td>
<td>Nepeta Faassenii 'Walker's Low' (Walker's Low Catmint)</td>
</tr>
<tr>
<td></td>
<td>Rudbeckia Fulgida 'Goldsturm' (Goldsturm Black-eyed Susan)</td>
</tr>
<tr>
<td>621.713</td>
<td>Herbaceous Perennial (4&quot; Cell) Group B</td>
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<tr>
<td></td>
<td>Callirhoe Involucrata (Poppy Mallow)</td>
</tr>
<tr>
<td>621.80</td>
<td>Establishment Period</td>
</tr>
</tbody>
</table>
SECTION 627

PAVEMENT MARKINGS

The provisions of Section 627 of the Standard Specifications shall apply with the following additions and modifications:

627.01 Description

This work shall consist of providing pavement lines and markings in all areas of roadway reconstruction and where existing pavement markings are damaged or removed by Contractor's operations and as shown on the plans. See notes contained on the plans. This work shall also include the removal of existing markings where they conflict with new.

627.09 Method of Measurement:

The quantity of pavement marking lines shall be a lump sum for plan quantity.

Note: The refurbishment of all pavement markings for the Maine Mall Road Drainage Improvements will be incidental to the installation of the treatment system. No separate payment will be made.

627.10 Basis of Payment

The accepted quantity of pavement marking lines will be paid for at the contract unit per lump sum.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>627.7</td>
<td>Pavement Marking (Plan Quantity)</td>
</tr>
</tbody>
</table>
SECTION 652

MAINTENANCE OF TRAFFIC

The provisions of Section 652 of the Standard Specifications shall apply with the following additions and modifications:

652.3.6 Traffic Control

Contractor shall maintain access to all drives during construction. Two-way traffic shall be maintained whenever possible on all streets. Alternating one-way flow will be permitted during certain construction operations. Additional requirements are identified on the plans and in the Special Provisions of the Contract.

652.7 Method of Payment

The method of payment shall be a lump sum amount in the Contractor’s bid.

652.8 Basis of Payment

Preparation of traffic control plans, construction signage, barrels, cones, jersey barriers, maintenance of traffic control devices, and other necessary incidentals to maintain traffic in accordance with the specifications and the MUTCD shall be paid for Lump Sum. The flagger time shall be paid for per lump sum.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
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<tbody>
<tr>
<td>652.38 Flaggers</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>652.39 Work Zone Traffic Control</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>
SECTION 654

SOIL BACKFILL COMPACTION TESTING

654.01 Description

This work shall consist of furnishing an approved certified soil testing laboratory, when required, to conduct in-place density tests of backfill materials in the field and all related laboratory tests.

654.02 General

Field tests shall be performed at the minimum frequency of 1 test per 50 linear feet of pipe trench, and no less than 1 test per trench at the top of the base course.

Upon completion of the field test, the results shall be made available to the City Inspector on site. Copies of all test results shall be transmitted to the Engineer of the City of South Portland.

The minimum in-place densities shall meet or exceed the laboratory maximum density as determined by ASTM D 1557 - 78 as follows:

<table>
<thead>
<tr>
<th></th>
<th>Ninety percent</th>
<th>Ninety-five percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embankment</td>
<td>90%</td>
<td>95%</td>
</tr>
<tr>
<td>Trench Backfill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggregate Base Course</td>
<td></td>
<td>95%</td>
</tr>
<tr>
<td>Aggregate Subbase Course</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

654.03 Method of Measurement

Density tests for the Maine Mall Road Sanitary Sewer Replacement Project will be measured by each conducted. If the initial tests do not meet the specifications, the areas shall be retested at no additional cost to the City.

All Testing for the Gorham Road and Maine Mall Road Drainage Improvement Projects will be the responsibility of the Contractor and no separate payment will be made.

654.04 Basis of Payment

The Owner is responsible for testing for the Maine Mall Road Sanitary Sewer Replacement Project. No payment will be made.

The Contractor is responsible for the cost of retesting areas that do not meet specifications for the Maine Mall Road Sanitary Sewer Replacement Project.
SECTION 656

TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL

The provisions of Section 656 of the Standard Specifications shall apply with no additions or modifications:

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>656.75</td>
<td>Temporary Soil Erosion and Water Pollution Control Lump Sum</td>
</tr>
</tbody>
</table>
SECTION 659

MOBILIZATION AND GENERAL CONDITIONS

The provisions of Section 659 of the Standard Specifications shall apply with the following additions and modifications:

659.01 Description

Mobilization shall consist of preparatory work and operations including, but not limited to those necessary to the movement of personnel, equipment, supplies and incidentals to the project site; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various items on the project site.

Mobilization includes the mobilization and demobilization of all resources as many times as necessary during the Work. Mobilization includes all costs associated with the General Conditions of the Contract including the cost of all bonds and insurance and pre-construction submittals.

659.02 Method of Measurement

Mobilization and General Conditions will be measured as a Lump Sum. The maximum amount that the City will pay for Mobilization is 10% of the Bid less the amount bid for Mobilization. This item shall be allocated as a maximum of 2% shall be allowed for bonds and insurance; a maximum of 2% shall be allowed for mobilization and demobilization; a maximum of 6% shall be allowed for general conditions.

659.03 Basis of Payment

Upon approval of all pre-construction submittals required for approval by this Contract, the Contractor will receive payment of 50% of the Lump Sum price for Mobilization, not to exceed 5% of the Bid less the amount bid for Mobilization. After the City determines that the Work is 50% complete, the Contractor will receive the other 50% of the Lump Sum price for Mobilization, not to exceed 6% of the Bid less the amount bid for Mobilization.

The total sum of payments under this item shall not exceed the original Contract amount bid regardless of the fact that the Contractor may shut down their work on the Project or move equipment away from the Project and then back again.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>659.10</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>
SECTION 703

AGGREGATES

The provisions of Section 703 of the Standard Specifications shall apply with the following additions and modifications:

703.02 Coarse Aggregate for Concrete

<table>
<thead>
<tr>
<th>Designated Aggregate Size</th>
<th>Per Cent Passing Sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 in.</td>
</tr>
<tr>
<td>2 in.</td>
<td>95-100</td>
</tr>
<tr>
<td>1-1/2 in.</td>
<td>-</td>
</tr>
<tr>
<td>1 in.</td>
<td>50-70</td>
</tr>
<tr>
<td>3/4 in.</td>
<td>-</td>
</tr>
<tr>
<td>1/2 in.</td>
<td>15-30</td>
</tr>
<tr>
<td>3/8 in.</td>
<td>-</td>
</tr>
<tr>
<td>No. 4</td>
<td>0-5</td>
</tr>
<tr>
<td>F.M. (+0.20)</td>
<td>7.45</td>
</tr>
</tbody>
</table>

Aggregate used in concrete shall not exceed the following maximum designated sizes:

a. 2 inches for mass concrete.
b. 1-1/2 inch for piles, pile caps, footings, foundation mats, and walls 8 inches or more thick.
c. 3/4 inch for slabs, beams, and girders.
d. 1/2 inch for fireproofing on steel columns and beams; 1 inch for all other concrete.

703.06 (a) Aggregate Base

Aggregate base - crushed, type "B" shall not contain particles of rock which will not pass the two inch (2") square mesh sieve, and shall conform to the type "B" aggregate, as listed in the subsection of the Standard Specifications.

"Crushed" shall be defined as consisting of rock particles with at least 50 per cent of the portion retained on the 1/4 inch square mesh sieve, having a minimum of 2 fracture faces.

703.06 (b) Aggregate Subbase

Gravel subbase shall not contain particles of rock which will not pass the three inch (3") square mesh sieve, and shall conform to type "D" Aggregate, as listed in this subsection of the Standard Specifications.
703.18 Common Borrow

Common borrow shall not contain any particle of bituminous material.

703.209 Gravel Borrow

Gravel borrow shall not contain particles of rock which will not pass three inch ("3") square mesh sieve.

703.30 Crushed Stone for Pipe Bedding

Crushed Stone for Pipe Bedding Shall be a uniform material consisting of clean, hard, and durable particles or fragments, free from vegetable or other objectionable matter, containing angular pieces, as are those which come from a mechanical crusher. Gradation requirements shall be as follows:

<table>
<thead>
<tr>
<th>Sieve Designation</th>
<th>Percent by Weight Passing Square Mesh Sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/2 inch</td>
<td>100</td>
</tr>
<tr>
<td>1 inch</td>
<td>95-100</td>
</tr>
<tr>
<td>1/2 inch</td>
<td>25-60</td>
</tr>
<tr>
<td>No. 4</td>
<td>0-10</td>
</tr>
</tbody>
</table>

703.32 Sand

Shall be well graded durable material free of organic matter and conform to the following gradation requirements:

<table>
<thead>
<tr>
<th>Sieve Designation</th>
<th>Percent by Weight Passing Square Mesh Sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8 inch</td>
<td>100</td>
</tr>
<tr>
<td>No. 4</td>
<td>95-100</td>
</tr>
<tr>
<td>No. 16</td>
<td>50-85</td>
</tr>
<tr>
<td>No. 50</td>
<td>10-30</td>
</tr>
<tr>
<td>No.100</td>
<td>2-10</td>
</tr>
<tr>
<td>No.200</td>
<td>0-5</td>
</tr>
</tbody>
</table>

Sand conforming to the requirement for fine aggregate in ASTM Standard Specifications for Concrete Aggregate, Designation C-33, will meet the above requirement.

703.33 No. 8 Stone Bedding Course

Stone Bedding Course: Used as joint filler and bedding course for permeable paver installation shall be washed with less than 1% passing the No. 200 sieve and conform to ASTM C 33 No. 8 crushed stone, per the following gradation requirements
<table>
<thead>
<tr>
<th>Sieve Designation</th>
<th>Percent by Weight Passing Square Mesh Sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 inch</td>
<td>100</td>
</tr>
<tr>
<td>3/8 inch</td>
<td>85-100</td>
</tr>
<tr>
<td>No. 4</td>
<td>10-30</td>
</tr>
<tr>
<td>No. 8</td>
<td>0-10</td>
</tr>
<tr>
<td>No.16</td>
<td>0-5</td>
</tr>
</tbody>
</table>

703.34 No. 57 Base

No. 57 Base Used as setting base course for permeable paver installation shall be washed with less than 1% passing the No. 200 sieve and conform to ASTM No. 57 Base per the following gradation requirements

<table>
<thead>
<tr>
<th>Sieve Designation</th>
<th>Percent by Weight Passing Square Mesh Sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/2 inch</td>
<td>100</td>
</tr>
<tr>
<td>1 inch</td>
<td>95-100</td>
</tr>
<tr>
<td>1/2 inch</td>
<td>25-60</td>
</tr>
<tr>
<td>No. 4</td>
<td>0-10</td>
</tr>
<tr>
<td>No.8</td>
<td>0-5</td>
</tr>
</tbody>
</table>

703.34 No. 2 Subbase

No. 2 Subbase used as setting base course for permeable paver installation shall be washed with less than 1% passing the No. 200 sieve and conform to ASTM No. 57 Subbase per the following gradation requirements

<table>
<thead>
<tr>
<th>Sieve Designation</th>
<th>Percent by Weight Passing Square Mesh Sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 inch</td>
<td>100</td>
</tr>
<tr>
<td>2-1/2” inch</td>
<td>90-100</td>
</tr>
<tr>
<td>2” inch</td>
<td>35-70</td>
</tr>
<tr>
<td>1-1/2” inch</td>
<td>0-15</td>
</tr>
<tr>
<td>3/4 inch</td>
<td>0-5</td>
</tr>
</tbody>
</table>
SECTION 801

TEST PITS

801.01 Description

This work shall consist of excavating and back filling test holes to locate existing utilities at locations shown on the plans or as directed by the Resident.

801.02 Construction Requirements

The work shall be done in a manner that provides safe passage of the traveling public at all times. Coordination with the utilities is required prior and during the test pit activities. An authorized representative from the utility shall be present during the test pit activity. Test pits shall be completed in a manner that does not damage any utilities. Any damage to utilities or other roadway features by the test pit operations shall be repaired by the Contractor at no additional cost and shall be to the Resident’s satisfaction.

The Contractor shall coordinate with the City’s surveyor on locating the utilities once exposed.

Once the location work is complete, the Contractor shall backfill the hole, place gravel and pavement over the test pits in a manner consistent with the existing conditions and in accordance with the standard specifications for backfilling.

801.03 Method of Measurement

Test Pits will be measured for payment by the vertical foot.

801.04 Basis of Payment

The accepted quantity of Test Pits for the Maine Mall Road Sanitary Sewer Replacement Project will be paid for at the contract unit price per vertical foot of excavation, which shall be full compensation for all labor, materials, tools, equipment, and incidentals necessary to the complete the work including excavation, backfilling, pavement replacement, disposal of materials and the protection of the utilities. Associated traffic control will not be paid for separately and is considered incidental to the test pit item.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>801.03</td>
<td>Test Pits</td>
</tr>
<tr>
<td></td>
<td>Vertical Foot</td>
</tr>
</tbody>
</table>
Appendix 1

Participating Landowners
## Appendix 1
### List of Additional Insured

<table>
<thead>
<tr>
<th>Owner Name</th>
<th>Contact</th>
<th>Phone</th>
<th>Parcel Physical Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>ecomaine</td>
<td>Tom Raymond, PE</td>
<td>207-523-3146</td>
<td>85 Scott Drive</td>
</tr>
<tr>
<td>City of Portland</td>
<td>Douglas A. Roncarati, Jr.</td>
<td>207-874-8848</td>
<td>2378 Congress Street</td>
</tr>
<tr>
<td>Transport Leasing Corp</td>
<td></td>
<td></td>
<td>94 Johnson Road</td>
</tr>
<tr>
<td>Sable Oaks Office Park Association</td>
<td>Ed Palmer</td>
<td>207-347-6851</td>
<td>Sable Oaks &amp; Country Club Drive</td>
</tr>
<tr>
<td>First States Investors 5200, LLC</td>
<td>Michael Maher</td>
<td>215-887-2280</td>
<td>65 Gannett Dr</td>
</tr>
<tr>
<td>119 Gannet Drive Associates, LLC</td>
<td>Dr. Jeffrey Rosenblatt</td>
<td>207-777-4262</td>
<td>119 Gannett Dr</td>
</tr>
<tr>
<td>Fort Fairfield BP, LLC</td>
<td>Robert Clark</td>
<td>208-284-6967</td>
<td>155 Gannett Drive</td>
</tr>
<tr>
<td>North Avenue Realty Trust</td>
<td>Andy Morrill</td>
<td>207-839-2771</td>
<td>207 Gannett Dr</td>
</tr>
<tr>
<td>Maine Today Media, Inc</td>
<td>Michael Ivancic</td>
<td>207-791-6837</td>
<td>295 Gannett Dr</td>
</tr>
<tr>
<td>Spectrum Realty LLC</td>
<td>William Ferenz</td>
<td>207-482-7838</td>
<td>324 Gannett Drive</td>
</tr>
<tr>
<td>Jordan Family Holdings</td>
<td>Mark Jordan</td>
<td>207-883-9051</td>
<td>202 Gannett Drive</td>
</tr>
<tr>
<td>Saunders Properties, LLC</td>
<td>Matt Porter</td>
<td>207-228-1888 x211</td>
<td>192 Gannett Dr</td>
</tr>
<tr>
<td>INS Realty, LLC</td>
<td>Kathi Nickerson (Dirigo Management)</td>
<td>207-871-1080</td>
<td>176 Gannett Dr</td>
</tr>
<tr>
<td>Jefferson Realty, LLC</td>
<td>Jim Van Valkenburgh</td>
<td>207-775-6561</td>
<td>100 Gannett Dr</td>
</tr>
<tr>
<td>Anthem Health Plans of Maine, Inc</td>
<td>William Pakulis</td>
<td><a href="mailto:bill.pakulis@wellpoint.com">bill.pakulis@wellpoint.com</a></td>
<td>2 Gannett Dr</td>
</tr>
<tr>
<td>TARGET CORPORATION T-1338A</td>
<td>Cindi Robb</td>
<td><a href="mailto:cindy.robb@target.com">cindy.robb@target.com</a></td>
<td>240 Running Hill RD</td>
</tr>
<tr>
<td>Blues Brothers, LLC</td>
<td>Boulos: Paul Urenek</td>
<td>207-871-1290</td>
<td>41 Donald B. Dean Dr</td>
</tr>
<tr>
<td>Roberts Road Associates</td>
<td>Boulos: Amy Booth</td>
<td><a href="mailto:abooth@boulos.com">abooth@boulos.com</a></td>
<td>171 Philbrook AVE</td>
</tr>
<tr>
<td>Macy's Retail Holdings Inc.</td>
<td>Cindy Abel</td>
<td>978-531-3800 x2330</td>
<td>290 Maine Mall RD</td>
</tr>
<tr>
<td>GGP - Maine Mall, LLC</td>
<td>Keith Stone</td>
<td>207-828-2063 x222</td>
<td>364 Maine Mall RD</td>
</tr>
<tr>
<td>Sears, Roebuck and Company</td>
<td>Bruce Towers</td>
<td>207-828-9314</td>
<td>400 Maine Mall Rd</td>
</tr>
<tr>
<td>TRU 2005 REI, LLC</td>
<td>Jennifer Sofia</td>
<td>973-617-4107</td>
<td>303 Maine Mall RD</td>
</tr>
<tr>
<td>NewGen Hospitality, LLC</td>
<td>Suman Rungsun</td>
<td>207-772-3450</td>
<td>461 Maine Mall RD</td>
</tr>
<tr>
<td>Dead River 82 Running Hill Road LLC</td>
<td>Deborah Lush</td>
<td>207-773-5868</td>
<td>82 Running Hill RD</td>
</tr>
<tr>
<td>Dead River 175 Running Hill, LLC</td>
<td>Deborah Lush</td>
<td>207-773-5868</td>
<td>175 Running Hill RD</td>
</tr>
<tr>
<td>Running Hill Shopping Plaza, LLC</td>
<td>Kathi Nickerson (Dirigo Management)</td>
<td>207-871-1080</td>
<td>200 Running Hill RD</td>
</tr>
<tr>
<td>Central Maine Power Company</td>
<td>Same as Running Hill Shopping Plaza LLC</td>
<td></td>
<td>0 Running Hill Road, South Portland, ME</td>
</tr>
<tr>
<td>R A CUMMINGS, INC</td>
<td>Joel Cummings</td>
<td>207-777-7100</td>
<td>93 Scott Drive</td>
</tr>
<tr>
<td>Brookwood Sable Oaks Drive, LLC</td>
<td>Carl Trottier, Boulos</td>
<td>207-553-1771</td>
<td>600 Sable Oaks DR</td>
</tr>
<tr>
<td>OpRock Portland 303 FEE LLC</td>
<td>Ed Palmer</td>
<td>207-347-6851</td>
<td>303 Sable Oaks DR</td>
</tr>
<tr>
<td>Second Portland Limited Partnership</td>
<td>Carl Trottier, Boulos</td>
<td>207-553-1771</td>
<td>707 Sable Oaks DR</td>
</tr>
<tr>
<td>Sablegolf, LLC</td>
<td>Ed Palmer</td>
<td>207-347-6851</td>
<td>505 Country Club Drive</td>
</tr>
<tr>
<td>OpRock Portland 200 Fee LLC</td>
<td>Ed Palmer</td>
<td>207-347-6851</td>
<td>200 Sable Oaks DR</td>
</tr>
<tr>
<td>Marvin, Colby Elizabeth, Saco TR</td>
<td>Ellen Fontaine</td>
<td>207-761-2131</td>
<td>220 Maine Mall Road</td>
</tr>
<tr>
<td>Kimco Mallside Plaza 1381, Inc</td>
<td>Mark Wagner</td>
<td><a href="mailto:mwagner@kimcorealty.com">mwagner@kimcorealty.com</a></td>
<td>198 Maine Mall RD</td>
</tr>
</tbody>
</table>
# Appendix 1
## List of Additional Insured

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Contact Person</th>
<th>Phone Number</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGP - Maine Mall, LLC</td>
<td>Keith Stone</td>
<td>207-828-2063 x222</td>
<td>269 Maine Mall RD</td>
</tr>
<tr>
<td>Storage Realty Corporation</td>
<td>David Elowitch</td>
<td>207-865-9100 x101</td>
<td>195 Maine Mall RD</td>
</tr>
<tr>
<td>Capital Automotive LLC</td>
<td>Maine Mall Motors c/o Toyota of Portland, 191 Riverside St</td>
<td>(send them a letter)</td>
<td>227 Maine Mall RD</td>
</tr>
<tr>
<td>GMG Family Limited Partnership</td>
<td>Ellen Fontaine</td>
<td>207-761-2131</td>
<td>220 Maine Mall RD</td>
</tr>
<tr>
<td>244 Western AV Associates LLC</td>
<td>Susie Juul</td>
<td>207-761-0509 X204</td>
<td>244 Western AVE</td>
</tr>
<tr>
<td>S &amp; J Properties, LLC</td>
<td>Brian Goldberg</td>
<td>207-871-1812</td>
<td>0 Foden RD</td>
</tr>
<tr>
<td>Berman, LLC</td>
<td>Todd Dominiski</td>
<td>207-775-2252</td>
<td>100 Foden RD</td>
</tr>
<tr>
<td>Dead River Atlantic Place, LLC</td>
<td>Deborah Lusth</td>
<td>207-773-5868</td>
<td>311 Darling AVE</td>
</tr>
<tr>
<td>Longcreek Properties, LLC</td>
<td>Brian Goldberg</td>
<td>207-871-1812</td>
<td>225 Gorham RD</td>
</tr>
<tr>
<td>Hannaford Bros. Co.</td>
<td>Bill McKenney</td>
<td>207-885-2092</td>
<td>415 Philbrook AVE</td>
</tr>
<tr>
<td>Philbrook Avenue Associates, LLC</td>
<td>Lou Masiello</td>
<td>617-646-3264</td>
<td>415 Philbrook AVE</td>
</tr>
<tr>
<td>Bugaboo Creek Holdings, Inc</td>
<td>Mike Sullivan</td>
<td>207-773-5400</td>
<td>264 Gorham RD</td>
</tr>
<tr>
<td>Terra Firma Realty Trust</td>
<td>Douglass Abrams</td>
<td>603-235-2572</td>
<td>245 Western AVE</td>
</tr>
<tr>
<td>ABR Realty Trust (Terra Firma)</td>
<td>Douglass Abrams</td>
<td>603-235-2572</td>
<td>125 Western Ave</td>
</tr>
<tr>
<td>REJ I, LLC</td>
<td>Jerry Ade</td>
<td>207-774-1009</td>
<td>209 Western Ave</td>
</tr>
<tr>
<td>S &amp; J Properties, LLC</td>
<td>Brian Goldberg</td>
<td>207-871-1812</td>
<td>50 Foden RD</td>
</tr>
<tr>
<td>Foden Corner, LLC</td>
<td>Vinnie Maietta</td>
<td>207-749-9000</td>
<td>265 Western AVE</td>
</tr>
<tr>
<td>Texas Instruments</td>
<td>Les Gardner</td>
<td>207-541-8417</td>
<td>133 Pope RD</td>
</tr>
<tr>
<td>90 Maine Mall Road LLC/Portland CI LLC</td>
<td>Donna Mitchell</td>
<td>207-664-1641 x105</td>
<td>90 Maine Mall Road</td>
</tr>
<tr>
<td>53 Darling LLC</td>
<td>Rufus M.G. Williams, Jr.</td>
<td>207-775-2252</td>
<td>53 Darling AVE</td>
</tr>
<tr>
<td>Cook Management Trust</td>
<td>Elaine Sylvester</td>
<td>603-749-2504</td>
<td>75 Darling AVE</td>
</tr>
<tr>
<td>My Darling, LLC</td>
<td>Tim Soley</td>
<td>207-775-2252</td>
<td>95 Darling AVE</td>
</tr>
<tr>
<td>Central Maine Power Company</td>
<td>Same as UNUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNUM Life Insurance Co.</td>
<td>Robert Adams</td>
<td>207-575-5155</td>
<td>123 Darling AVE</td>
</tr>
<tr>
<td>50 Maine Mall Road LLC</td>
<td>Frank Langlois</td>
<td>207-781-4888</td>
<td>50 Maine Mall RD</td>
</tr>
<tr>
<td>Fairchild Semiconductor Corp</td>
<td>Joel Rouillard</td>
<td>207-775-8984</td>
<td>333 Western AVE</td>
</tr>
<tr>
<td>Jetport Plaza, LLC</td>
<td>Will Williams</td>
<td>207-878-6971</td>
<td>443 Western AVE</td>
</tr>
<tr>
<td>Cabot House of Portland Real Estate Trust</td>
<td>Norris Bendetson</td>
<td></td>
<td>371 Western AVE</td>
</tr>
<tr>
<td>Coca Cola Bottling Co. of Northern New England</td>
<td>Peter Roberts</td>
<td><a href="mailto:proberts@ccnne.com">proberts@ccnne.com</a></td>
<td>316 Western AVE</td>
</tr>
<tr>
<td>Transport Leasing Corp</td>
<td></td>
<td></td>
<td>118 Johnson RD</td>
</tr>
<tr>
<td>Colonel Westbrook Associates</td>
<td>Paul Urenek-Boulos</td>
<td>207-871-1290</td>
<td>1 Thomas Drive</td>
</tr>
</tbody>
</table>
### Appendix 1

#### List of Additional Insured

<table>
<thead>
<tr>
<th>Company/Individual</th>
<th>Contact Person</th>
<th>Phone Number</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sysco Food SVCS Of No New England, Inc.</td>
<td>Adam Pitcher</td>
<td>207-253-7055</td>
<td>33 Thomas DR</td>
</tr>
<tr>
<td>LZ Associates</td>
<td>Barry Zimmerman</td>
<td><a href="mailto:bzimmerman@krz.com">bzimmerman@krz.com</a></td>
<td>39 Thomas DR</td>
</tr>
<tr>
<td>Silvex, Inc.</td>
<td>Phil Ridley</td>
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<td>Lanco Properties, LLC</td>
<td>Russ Young</td>
<td><a href="mailto:r.young@lanco.net">r.young@lanco.net</a></td>
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<td>Paul Urenek-Boulos</td>
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<td>Grant Zoldowski</td>
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<td>Alan Levenson</td>
<td><a href="mailto:levenson@maine.rr.com">levenson@maine.rr.com</a></td>
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<td>J. B. Brown &amp; Sons</td>
<td>Jonathon Cohen</td>
<td>207-776-0304</td>
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<td>465 Main Street LLC</td>
<td>Darsi Simond</td>
<td>207-777-3103</td>
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<td>Daniel Flaherty</td>
<td>207-653-9995</td>
<td>171 Philbrook Ave.</td>
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<td>Katherine Bryant</td>
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<td>Port Resources</td>
<td>Karen McDonald</td>
<td>207-557-3471</td>
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<td>Maine Department of Transportation</td>
<td>Stephen Tibbets, PE</td>
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<td>Fred Dillon</td>
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<td>Eric Dudley</td>
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<td>CPSP, LLC</td>
<td>Daniel Soley</td>
<td></td>
<td>Main Mall Road, South Portland</td>
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</table>
Appendix 2

Treatment Area Construction
APPENDIX 2

MAINE MALL ROAD TREATMENT SYSTEMS

Note: the following is an overview of the proposed treatment system installations for Maine Mall Road. The District wishes to construct all treatment systems; however, the intention of bidding treatment areas as a complete installation is to allow the District to chose those treatment systems that provide the best valve and treatment for the watershed. This summary is not intended to be a sequence of construction. Cost for treatment area construction to include all materials, work and labor to install a completed treatment system; Contractor is responsible for insuring that all construction components are included in their bid, whether or not the work is in the following overview.

Bio-retention Treatment Area, RTP-9, Sta. 50+50L
Note: Treatment area construction includes construction on private property. Work and schedule to be coordinated with the landowner through the District Engineer.

- Installation of silt barrier and inlet protection.
- Clear & Grubbing.
- Excavation and dewatering, if necessary
- Installation of bio-retention area including liners, stone reservoir course (3/4” crushed stone), pea rock and filter media.
- Construction of overflow structure with bleeder and outfall pipe.
- Connection to existing structure.
- Construction of forebay including curb modifications and stone berm.
- Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
- Grading of adjacent areas to match grade of bio retention area.
- Installation of plantings and mulch.
- Seed and mulch disturbed areas.
- Convert existing inlet top to manhole top.
- After stabilization, remove construction BMP’s

6’ x 6’ Esplanade Box Filter, EBF-1, Sta. 54+75L

- Installation of inlet protection.
- Clear & Grubbing.
- Remove existing curb.
- Excavation and dewatering, if necessary
- Installation of esplanade box filter
- Construction of overflow pipe including inspection port/cleanout and concrete collar.
- Connection to existing structure.
- Backfill of structure including compaction to specifications
- Installation of esplanade box filter media and planting.
- Replacement of curbing.
- Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
- Removal of temporary diversions and activate device
• Re-grade, seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

6’ x 6’ Esplanade Box Filter, EBF-2, Sta. 57+75L

• Installation of inlet protection.
• Clear & Grubbing.
• Remove existing curb.
• Excavation and dewatering, if necessary
• Installation of esplanade box filter
• Construction of overflow pipe including inspection port/cleanout and concrete collar.
• Connection to existing structure.
• Backfill of structure including compaction to specifications
• Installation of esplanade box filter media and planting.
• Replacement of curbing.
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Removal of temporary diversions and activate device
• Re-grade, seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

Stormwater Quality Filter Treatment Device (Jellyfish), JF-1, Sta. 60+25R

• Installation of inlet protection.
• Clear & Grubbing.
• Sawcut and remove existing pavement.
• Remove existing curb.
• Excavation and dewatering, if necessary
• Cut and remove existing drainage pipe.
• Installation of treatment device.
• Reconnection of inlet and outlet pipes to structure.
• Installation of riser rings/brick and mortar, inlet frame and grate and manhole frame and grate
• Backfill of structure including compaction to specifications
• Replacement of curbing.
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Removal of temporary diversions and activate device
• Re-grade, seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

Under Drained Soil Filter, RTP-10, Sta. 61+00L
Note: Treatment area construction includes construction on private property. Work and schedule to be coordinated with the landowner through the District Engineer.

• Installation of inlet protection including structure at sta. 64+00L.
• Clear & Grubbing.
• Excavation and dewatering, if necessary.
• Note: requires installation of insulation above new gravity sanitary sewer below geotextile for under drained stone course.
• Installation of under drained soil filter bio-retention area including liners, under drained stone course (3/4” crushed stone), under drain and filter media.
• Connection of under drain to existing structure.
• Adjust inlet grate elevation.
• Construction of forebay including curb modifications and stone berm.
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Grading of adjacent areas to match grade of bio retention area.
• Installation of plantings and mulch.
• Re-grade, seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

6’ x 12’ Inline Esplanade Box Filter, EBF-3, Sta. 63+75R

• Installation of inlet protection.
• Clear & Grubbing.
• Remove existing curb.
• Excavation and dewatering, if necessary
• Cut and remove existing drainage pipe.
• Installation of new manhole.
• Reconnection of inlet and outlet pipes to new manhole.
• Installation of esplanade box filter
• Construction of overflow pipe including inspection port/cleanout and concrete collar.
• Connection to existing structure.
• Backfill of structures including compaction to specifications
• Installation of esplanade box filter media and plantings.
• Replacement of curbing.
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Convert existing inlet top to manhole top.
• Removal of temporary diversions and activate device
• Re-grade, seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

Bio-retention Treatment Area, RTP-11, Sta. 66+25R
Note: Treatment area construction includes construction on private property. Work and schedule to be coordinated with the landowner through the District Engineer.

• Installation of silt barrier and inlet protection.
• Clear & Grubbing.
• Excavation and dewatering, if necessary
• Installation of bio-retention area including liners, stone reservoir course (3/4” crushed stone), pea rock and filter media.
• Construction of overflow structure with bleeder and outfall pipe.
• Connection to existing structure.
• Construction of forebay including stone berm.
• Sawcut and remove existing sidewalk and curbing.
• Construct sidewalk culvert.
• Reinstall sidewalk including base material and asphalt
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Grading of adjacent areas to match grade of bio retention area.
• Installation of plantings and mulch.
• Installation of trees.
• Re-grade, seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

**Stormwater Quality Filter Treatment Device (Jellyfish), JF-2, Sta. 67+00L**

• Installation of inlet protection.
• Clear & Grubbing.
• Sawcut and remove existing pavement.
• Remove existing curb.
• Excavation and dewatering, if necessary
• Remove existing structure and drainage pipe.
• Installation of treatment device.
• Reconnection of inlet and outlet pipes to structure.
• Installation of riser rings/brick and mortar, inlet frame and grate and manhole frame and grate
• Backfill of structure including compaction to specifications
• Replacement of curbing.
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Removal of temporary diversions and activate device
• Re-grade, seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

**Stormwater Quality Filter Treatment Device (Jellyfish), JF-3, Sta. 68+25R**

Note: Treatment device construction includes construction on private property. Work and schedule to be coordinated with the landowner through the District Engineer.

• Installation of silt barrier and inlet protection.
• Clear & Grubbing.
• Sawcut and remove existing pavement.
• Remove existing drainage culvert and install plugs.
• Excavation and dewatering, if necessary
• Installation of under drain.
• Installation of area drain and drainage pipe
• Temporary removal of guy wire, if necessary, and holding of existing pole.
• Installation of treatment device.
• Construction of outlet pipe and rip-rap.
• Installation of riser rings/brick and mortar, inlet frame and grate and riser with hatch cover.
• Backfill of structure including compaction to specifications
• Installation of dumpster pad.
• Installation of curbing.
• Sawcut, repave adjacent to rest curb, repave other pavement areas.
• Removal of temporary diversions and activate device
• Re-grade, seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

6’ x 6’ Esplanade Box Filter, EBF-4, Sta. 68+60R

• Installation of inlet protection.
• Clear & Grubbing.
• Remove existing curb.
• Sawcut and remove existing sidewalk.
• Excavation and dewatering, if necessary
• Installation of esplanade box filter
• Construction of overflow pipe including inspection port/cleanout and concrete collar.
• Backfill of structure including compaction to specifications
• Installation of esplanade box filter media.
• Replacement of curbing.
• Reinstall sidewalk including base material and asphalt
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Removal of temporary diversions and activate device
• Re-grade adjacent areas.
• Installation of erosion control blanket on slope.
• Seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

6’ x 6’ Esplanade Box Filter, EBF-5, Sta. 69+25L

• Installation of inlet protection.
• Removal of guardrail and guard rail post
• Clear & Grubbing.
• Remove existing curb.
• Excavation and dewatering, if necessary
• Installation of esplanade box filter
• Construction of overflow pipe including inspection port/cleanout and concrete collar.
• Connection to existing structure.
• Backfill of structure including compaction to specifications
• Installation of Type 3, Single Rail Bridge Mounted Guard Rail Post to top of esplanade box and replace guardrail
• Installation of esplanade box filter media and planting.
• Replacement of curbing.
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Removal of temporary diversions and activate device
• Re-grade adjacent areas.
• Installation of erosion control blanket on slope.
• Seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

6’ x 6’ Esplanade Box Filter, EBF-6, Sta. 70+40L

• Installation of inlet protection.
• Removal of guardrail and guard rail post
• Clear & Grubbing.
• Remove existing curb.
• Excavation and dewatering, if necessary
• Installation of esplanade box filter
• Construction of overflow pipe including inspection port/cleanout and concrete collar.
• Connection to existing structure.
• Backfill of structure including compaction to specifications
• Installation of Type 3, Single Rail Bridge Mounted Guard Rail Post to top of esplanade box and replace guardrail
• Installation of esplanade box filter media and planting.
• Replacement of curbing.
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Removal of temporary diversions and activate device
• Re-grade adjacent areas.
• Installation of erosion control blanket on slope.
• Seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

Bio-retention Treatment Area, RTP-12, Sta. 70+40R
Note: Treatment area construction includes construction on private property. Work and schedule to be coordinated with the landowner through the District Engineer.

• Installation of inlet protection.
• Clear & Grubbing.
• Removal of existing structure and drainage pipes.
• Installation of new drainage structure.
• Excavation and dewatering, if necessary.
• Installation of bio-retention area including liners, diversion berm, stone reservoir course (3/4” crushed stone), pea rock and filter media.
- Construction of overflow structure with bleeder and outfall pipe.
- Connection to existing structure.
- Sawcut and remove existing sidewalk and curbing.
- Construct sidewalk culvert.
- Construction of rip-rap slope
- Reinstall sidewalk including base material and asphalt
- Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
- Re-grading of adjacent area to match elevation and installation of erosion control blanket as shown on plans.
- Installation of retention area seed and mulch.
- Installation of trees.
- Re-grade, seed and & mulch other disturbed areas.
- After stabilization, remove construction BMP’s

6’ x 6’ Esplanade Box Filter, EBF-7, Sta. 73+60R

- Installation of inlet protection.
- Clear & Grubbing.
- Remove existing curb.
- Sawcut and remove existing sidewalk.
- Excavation and dewatering, if necessary
- Installation of esplanade box filter
- Construction of overflow pipe including inspection port/cleanout and concrete collar.
- Connection to existing structure.
- Backfill of structure including compaction to specifications
- Installation of esplanade box filter media.
- Replacement of curbing.
- Reinstall sidewalk including base material and asphalt
- Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
- Removal of temporary diversions and activate device
- Re-grade adjacent areas.
- Re-grade, seed and & mulch disturbed areas.
- After stabilization, remove construction BMP’s

6’ x 6’ Esplanade Box Filter, EBF-8, Sta. 73+60L

- Installation of inlet protection.
- Clear & Grubbing.
- Remove existing curb.
- Excavation and dewatering, if necessary
- Installation of esplanade box filter
- Construction of overflow pipe including inspection port/cleanout and concrete collar.
- Connection to existing structure.
- Backfill of structure including compaction to specifications
• Installation of esplanade box filter media and planting.
• Replacement of curbing.
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Removal of temporary diversions and activate device
• Re-grade, seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

6’ x 6’ Esplanade Box Filter, EBF-9, Sta. 79+50L

• Installation of inlet protection.
• Clear & Grubbing.
• Remove existing curb.
• Excavation and dewatering, if necessary
• Installation of esplanade box filter
• Construction of overflow pipe including inspection port/cleanout and concrete collar.
• Connection to existing structure.
• Backfill of structure including compaction to specifications
• Installation of esplanade box filter media and planting.
• Replacement of curbing.
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Removal of temporary diversions and activate device
• Re-grade, seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s

12’ x 6’ Esplanade Box Filter, EBF-10, Sta. 79+50R

• Installation of inlet protection.
• Clear & Grubbing.
• Remove existing curb.
• Sawcut and remove existing sidewalk.
• Excavation and dewatering, if necessary
• Installation of esplanade box filter
• Construction of overflow pipe including inspection port/cleanout and concrete collar.
• Connection to existing structure.
• Backfill of structure including compaction to specifications
• Installation of esplanade box filter media and plantings.
• Replacement of curbing.
• Reinstall sidewalk including base material and asphalt
• Sawcut, repave adjacent to rest curb and refurbish striping if necessary.
• Removal of temporary diversions and activate device
• Re-grade adjacent areas.
• Re-grade, seed and & mulch disturbed areas.
• After stabilization, remove construction BMP’s
Appendix 3

Maine DOT Special Provision
SECTION 401 - HOT MIX ASPHALT PAVEMENT

401.01 Description  The Contractor shall furnish and place one or more courses of Hot Mix Asphalt Pavement (HMA) on an approved base in accordance with the contract documents and in reasonably close conformity with the lines, grades, thickness, and typical cross sections shown on the plans or established by the Resident. The Department will accept this work under Quality Assurance provisions, in accordance with these specifications and the requirements of Section 106 – Quality, the provisions of AASHTO M 323 except where otherwise noted in sections 401 and 703 of these specifications, and the Maine DOT Policies and Procedures for HMA Sampling and Testing.

401.02 Materials  Materials shall meet the requirements specified in Section 700 - Materials:

<table>
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<th>Material</th>
<th>Section</th>
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<td>Asphalt Cement</td>
<td>702.01</td>
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<tr>
<td>Aggregates for HMA Pavement</td>
<td>703.07</td>
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<tr>
<td>HMA Mixture Composition</td>
<td>703.09</td>
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401.021 Recycled Asphalt Materials  Recycled Asphalt Pavement (RAP) may be introduced into the mixture at percentages approved by the Department according to the Maine DOT Policies and Procedures for HMA Sampling and Testing. If approved by the Department, the Contractor shall provide documentation stating the source, test results for average residual asphalt content, and stockpile gradations showing RAP materials have been sized to meet the maximum aggregate size requirements of each mix designation. The Department will obtain samples for verification and approval prior to its use.

For specification purposes, RAP will be categorized as follows:

Class III – The Contractor may use a maximum of 10 percent Class III RAP in any base, binder, surface, or shim course. Class III RAP will be allowed in hand-placed mixes for item 403.209 at a rate of up to 20 percent.

Class II – The Contractor may use a maximum of 20 percent Class II RAP in any base, binder, surface, or shim course.

Class I – The Contractor may use a maximum of 30 percent Class I RAP in any base, binder, surface, or shim course provided that PG 58-34 asphalt binder is used in the mixture. A PG 52-34 may be used when approved by the Department.

In the event that RAP source or properties change, the Contractor shall notify the Department of the change and submit new documentation stating the new source or properties a minimum of 72 hours prior to the change to allow for obtaining new samples and approval.

401.03 Composition of Mixtures  The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), and mineral filler if required. HMA shall be designed and tested according to AASHTO R35 and the volumetric criteria in Table 1. The Contractor shall size, uniformly grade, and combine the aggregate fractions in proportions that provide a mixture meeting the grading requirements of the Job Mix Formula (JMF).
The Contractor shall submit for Department approval a JMF to the Central Laboratory in Bangor for each mixture to be supplied. The Department may approve 1 active design per nominal maximum size, per traffic level, per plant, plus a 9.5mm “fine” mix for shimming and where required, a non-RAP design for bridge decks. The Department shall then have 15 calendar days in which to process a new design before approval. The JMF shall establish a single percentage of aggregate passing each sieve size within the limits shown in section 703.09. The mixture shall be designed and produced, including all production tolerances, to comply with the allowable control points for the particular type of mixture as outlined in 703.09. The JMF shall state the original source, gradation, and percentage to be used of each portion of the aggregate including RAP when utilized, and mineral filler if required. It shall also state the proposed PGAB content, the name and location of the refiner, the supplier, the source of PGAB submitted for approval, the type of PGAB modification if applicable, and the location of the terminal if applicable.

In addition, the Contractor shall provide the following information with the proposed JMF:
- Properly completed JMF indicating all mix properties (Gmm, VMA, VFB, etc.)
- Stockpile Gradation Summary
- Design Aggregate Structure Consensus Property Summary
- Design Aggregate Structure Trial Blend Gradation Plots (0.45 power chart)
- Trial Blend Test Results for at least three different asphalt contents
- Design Aggregate Structure for at least three trial blends
- Test results for the selected aggregate blend at a minimum of three binder contents
- Specific Gravity and temperature/viscosity charts for the PGAB to be used
- Recommended mixing and compaction temperatures from the PGAB supplier
- Material Safety Data Sheets (MSDS) For PGAB
- Asphalt Content vs. Air Voids trial blend curve
- Test report for Contractor’s Verification sample
- Summary of RAP test results (if used), including count, average and standard deviation of binder content and gradation

At the time of JMF submittal, the Contractor shall identify and make available the stockpiles of all proposed aggregates at the plant site. There must be a minimum of 150 Mg [150 ton] for stone stockpiles, 75 Mg [75 ton] for sand stockpiles, and 50 Mg [50 ton] of blend sand before the Department will sample. The Department shall obtain samples for laboratory testing. The Contractor shall also make available to the Department the PGAB proposed for use in the mix in sufficient quantity to test the properties of the asphalt and to produce samples for testing of the mixture. Before the start of paving, the Contractor and the Department shall split a production sample for evaluation. The Contractor shall test its split of the sample and determine if the results meet the requirements of the Department’s written policy for mix design verification (See Maine DOT Policies and Procedures for HMA Sampling and Testing available at the Central Laboratory in Bangor). If the results are found to be acceptable, the Contractor will forward their results to the Department’s Lab, which will test the Department’s split of the sample. The results of the two split samples will be compared and shared between the Department and the Contractor. If the Department finds the mixture acceptable, an approved JMF will be forwarded to the Contractor and paving may commence. The first day’s production shall be monitored, and the approval may be withdrawn if the mixture exhibits undesirable characteristics such as checking, shoving or displacement.

The Contractor shall be allowed to submit aim changes within 24 hours of receipt of the first Acceptance test result. Should all of the Acceptance samples of a Lot be obtained prior to the receipt of the first Acceptance result, the Department will not allow the aim changes to be applied to that Lot. Adjustments will be allowed of up to 2% on the percent passing the 2.36 mm sieve through the 0.075 mm and 3% on the percent passing the
4.75 mm or larger sieves. Adjustments will be allowed on the %PGAB of up to 0.2%. Adjustments will be allowed on GMM of up to 0.010.

The Contractor shall submit a new JMF for approval each time a change in material source or materials properties is proposed. The same approval process shall be followed. The cold feed percentage of any aggregate may be adjusted up to 10 percentage points from the amount listed on the JMF, however no aggregate listed on the JMF shall be eliminated. The cold feed percentage for RAP may be reduced up to 10 percentage points from the amount listed on the JMF and shall not exceed the percentage of RAP approved in the JMF or for the specific application under any circumstances.

### TABLE 1: VOLUMETRIC DESIGN CRITERIA

<table>
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<tr>
<th>Design ESAL’s (Millions)</th>
<th>Required Density (% of Gmm)</th>
<th>Voids in the Mineral Aggregate (VMA)(Minimum Percent)</th>
<th>Voids Filled with Binder (VFB) (Minimum %)</th>
<th>Fines/Eff. Binder Ratio</th>
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<tr>
<td>N&lt;sub&gt;initial&lt;/sub&gt; N&lt;sub&gt;design&lt;/sub&gt; N&lt;sub&gt;max&lt;/sub&gt;</td>
<td>N&lt;sub&gt;initial&lt;/sub&gt; N&lt;sub&gt;design&lt;/sub&gt; N&lt;sub&gt;max&lt;/sub&gt;</td>
<td>25 19 12.5 9.5 4.75</td>
<td>70-80</td>
<td>0.6-1.2</td>
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<tr>
<td>&lt;0.3 0.3 to &lt;3 3 to &lt;10 10 to &lt;30</td>
<td>&lt;91.5 &lt;90.5 &lt;90.5 &lt;89.0</td>
<td>96.0 &lt;98.0 13.0 14.0 15.0 16.0 16.0</td>
<td>65-80</td>
<td>65-80*</td>
</tr>
</tbody>
</table>

*For 9.5 mm nominal maximum aggregate size mixtures, the maximum VFB is 82.
*For 4.75 mm nominal maximum aggregate size mixtures, the maximum VFB is 84.

**401.04 Temperature Requirements** After the JMF is established, the temperatures of the mixture shall conform to the following tolerances:

- In the truck at the mixing plant – allowable range 135° to 163°C [275 to 325°F]
- At the Paver – allowable range 135° to 163°C [275 to 325°F]

The JMF and the mix subsequently produced shall meet the requirements of Tables 1 and Section 703.07.

**401.05 Performance Graded Asphalt Binder** Unless otherwise noted in Special Provision 403 - Hot Mix Asphalt Pavement, the Contractor may utilize either a 64-28 or 58-28 PGAB. The Contractor must stipulate which PGAB grading will be used to construct the entire HMA pavement structure prior to starting work. For mixtures containing greater than 20 percent but no more than 30 percent RAP the PGAB shall be PG 58-34 (or PG 52-34 when approved by the Department). The PGAB shall meet the applicable requirements of AASHTO M320 - Standard Specification for PGAB. The Contractor shall provide the Department with an approved copy of the Quality Control Plan for PGAB in accordance with AASHTO R 26 Certifying Suppliers of PGAB. The Contractor shall request approval from the Department for a change in PGAB supplier or source by submitting documentation stating the new supplier or source a minimum of 24 hours prior to the change. In the event that the PGAB supplier or source is changed, the Contractor shall make efforts to minimize the occurrence of PGAB co-mingling.

**401.06 Weather and Seasonal Limitations** The State is divided into two paving zones as follows:

- **a. Zone 1** Areas north of US Route 2 from Gilead to Bangor and north of Route 9 from Bangor to Calais.
- **b. Zone 2** Areas south of Zone 1 including the US Route 2 and Route 9 boundaries.
The Contractor may place Hot Mix Asphalt Pavement for use other than a traveled way wearing course in either Zone between the dates of April 15th and November 15th, provided that the air temperature as determined by an approved thermometer (placed in the shade at the paving location) is 4°C [40°F] or higher.

The Contractor may place Hot Mix Asphalt Pavement produced with an accepted WMA technology for any base, intermediate base, or shim course in either Zone between the dates of April 15th and November 15th, provided that the air temperature as determined by an approved thermometer (placed in the shade at the paving location) is 2°C [35°F] or higher, and the area to be paved is not frozen. The Hot Mix Asphalt Pavement produced with an approved WMA technology shall meet the requirements of section 401.04 - Temperature Requirements, unless otherwise approved by the Department.

The Contractor may place Hot Mix Asphalt Pavement as traveled way wearing course in Zone 1 between the dates of May 1st and the Saturday following October 1st and in Zone 2 between the dates of April 15th and the Saturday following October 15th, provided the air temperature determined as above is 10°C [50°F] or higher.

For the purposes of this Section, the traveled way includes truck lanes, ramps, approach roads and auxiliary lanes. The atmospheric temperature for all courses on bridge decks shall be 10°C [50°F] or higher.

Hot Mix Asphalt Pavement used for curb, driveways, sidewalks, islands, or other incidentals is not subject to seasonal limitations, except that conditions shall be satisfactory for proper handling and finishing of the mixture. All mixtures used for curb, driveways, sidewalks, islands, or other incidentals shall conform to section 401.04 - Temperature Requirements. Unless otherwise specified, the Contractor shall not place Hot Mix Asphalt Pavement on a wet or frozen surface and the air temperature shall be 4°C [40°F] or higher.

On all sections of overlay with wearing courses less than 25 mm [1 in] thick, the wearing course for the travelway and adjacent shoulders shall be placed between the dates of May 15th and the Saturday following September 15th.

On all sections of overlay with wearing courses less than 1 inch thick, the wearing course for the travelway and adjacent shoulders shall be placed between the dates of June 1st and the Saturday following September 1st if the work is to be performed, either by contract requirement, or Contractor option, during conditions defined as “night work”.

401.07 Hot Mix Asphalt Plant

401.071 General Requirements HMA plants shall conform to AASHTO M156.

a. Truck Scales When the hot mix asphalt is to be weighed on scales meeting the requirements of Section 108 - Payment, the scales shall be inspected and sealed by the State Sealer as often as the Department deems necessary to verify their accuracy.

Plant scales shall be checked prior to the start of the paving season, and each time a plant is moved to a new location. Subsequent checks will be made as determined by the Resident. The Contractor will have at least ten 20 Kg [50 pound] masses for scale testing.

401.072 Automation of Batching Batch plants shall be automated for weighing, recycling, and monitoring the system. In the case of a malfunction of the printing system, the requirements of Section 401.074 c. of this specification will apply.

The batch plant shall accurately proportion the various materials in the proper order by weight. The entire batching and mixing cycle shall be continuous and shall not require any manual operations. The batch plant
shall use auxiliary interlock circuits to trigger an audible alarm whenever an error exceeding the acceptable
tolerance occurs. Along with the alarm, the printer shall print an asterisk on the delivery slip in the same row
containing the out-of-tolerance weight. The automatic proportioning system shall be capable of consistently
delivering material within the full range of batch sizes. When RAP is being used, the plant must be capable of
automatically compensating for the moisture content of the RAP.

All plants shall be equipped with an approved digital recording device. The delivery slip load ticket shall
contain information required under Section 108.1.3 - Provisions Relating to Certain Measurements, Mass and
paragraphs a, b, and c of Section 401.073

401.073 Automatic Ticket Printer System on Automatic HMA Plant  An approved automatic ticket printer
system shall be used with all approved automatic HMA plants. The requirements for delivery slips for
payment of materials measured by weight, as given in the following Sections, shall be waived: 108.1.3 a.,
108.1.3 b., 108.1.3 c., and 108.1.3 d. The automatic printed ticket will be considered as the Weight Certificate.

The requirements of Section 108.1.3 f. - Delivery Slips, shall be met by the weigh slip or ticket, printed by the
automatic system, which accompanies each truckload, except for the following changes:

- a. The quantity information required shall be individual weights of each batch or total net weight of
each truckload.
- b. Signatures (legible initials acceptable) of Weighmaster (required only in the event of a malfunction
as described in 401.074 c.).
- c. The MDOT designation for the JMF.

401.074 Weight Checks on Automatic HMA Plant  At least twice during each 5 days of production either of
the following checks will be performed:

- a. A loaded truck may be intercepted and weighed on a platform scale that has been sealed by the State
Sealer of Weights and Measures within the past 12 months. The inspector will notify the producer to
take corrective action on any discrepancy over 1.0%. The producer may continue to operate for 48
hours under the following conditions.
  1. If the discrepancy does not exceed 1.5%; payment will still be governed by the printed
ticket.
  2. If the discrepancy exceeds 1.5%, the plant will be allowed to operate as long as payment is
determined by truck platform scale net weight.

If, after 48 hours the discrepancy has not been addressed and reduced below 1.0%, than plant operations
will cease. Plant operation may resume after the discrepancy has been brought within 1.0%.

- b. Where platform scales are not readily available, a check will be made to verify the accuracy and
sensitivity of each scale within the normal weighing range and to assure that the interlocking devices
and automatic printer system are functioning properly.

- c. In the event of a malfunction of the automatic printer system, production may be continued without
the use of platform truck scales for a period not to exceed the next two working days, providing total
weights of each batch are recorded on weight tickets and certified by a Licensed Public Weighmaster.

401.08 Hauling Equipment  Trucks for hauling Hot Mix Asphalt Pavement shall have tight, clean, and smooth
metal dump bodies, which have been thinly coated with a small amount of approved release agent to prevent
the mixture from adhering to the bodies. Solvent based agents developed to strip asphalts from aggregates will not be allowed as release agents.

All truck dump bodies shall have a cover of canvas or other water repellent material capable of heat retention, which completely covers the mixture. The cover shall be securely fastened on the truck, unless unloading.

All truck bodies shall have an opening on both sides, which will accommodate a thermometer stem. The opening shall be located near the midpoint of the body, at least 300 mm [12 in] above the bed.

401.09 Pavers

Pavers shall be self-contained, self-propelled units with an activated screed (heated if necessary) capable of placing courses of Hot Mix Asphalt Pavement in full lane widths specified in the contract on the main line, shoulder, or similar construction.

On projects with no price adjustment for smoothness, pavers shall be of sufficient class and size to place Hot Mix Asphalt Pavement over the full width of the mainline travel way with a 3 m [10 ft] minimum main screed with activated extensions.

The Contractor shall place Hot Mix Asphalt Pavement on the main line with a paver using an automatic grade and slope controlled screed, unless otherwise authorized by the Department. The controls shall automatically adjust the screed and increase or decrease the layer thickness to compensate for irregularities in the preceding course. The controls shall maintain the proper transverse slope and be readily adjustable so that transitions and superelevated curves can be properly paved. The controls shall operate from a fixed or moving reference such as a grade wire or ski type device (floating beam) with a minimum length of 10 m [30 ft], a non-contact grade control with a minimum span of 7.3 m [24 ft], except that a 12 m [40 ft] reference shall be used on Expressway projects.

The Contractor shall operate the paver in such a manner as to produce a visually uniform surface texture and a thickness within the requirements of Section 401.101 - Surface Tolerances. The paver shall have a receiving hopper with sufficient capacity for a uniform spreading operation and a distribution system to place the mixture uniformly, without segregation in front of the screed. The screed assembly shall produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture. Pavers with extendible screeds shall have auger extensions and tunnel extenders as per the manufacturer’s recommendations, a copy of which shall be available if requested.

The Contractor shall have the paver at the project site sufficiently before the start of paving operations to be inspected and approved by the Department. The Contractor shall repair or replace any paver found worn or defective, either before or during placement, to the satisfaction of the Department. Pavers that produce an unevenly textured or non-uniform mat will be repaired or replaced before continuing to place HMA on MaineDOT projects.

On a daily basis, the Contractor shall perform nuclear density testing across the mat being placed, prior to being compacted by equipment, at 300 mm [12 in] intervals. If the density values vary by more than 2.0% from the mean, the Contractor shall make adjustments to the screed until the inconsistencies are remedied.

Failure to replace or repair defective placement equipment may result in a letter of suspension of work and notification of a quality control violation resulting in possible monetary penalties as governed by Section 106 - Quality.

401.10 Rollers

Rollers shall be static steel, pneumatic tire, oscillatory, or approved vibrator type. Rollers shall be in good mechanical condition, capable of starting and stopping smoothly, and be free from backlash when
reversing direction. Rollers shall be equipped and operated in such a way as to prevent the picking up of hot mixed material by the roller surface. The use of rollers, which result in crushing of the aggregate or in displacement of the HMA will not be permitted. Any Hot Mix Asphalt Pavement that becomes loose, broken, contaminated, shows an excess or deficiency of Performance Graded Asphalt Binder, or is in any other way defective shall be removed and replaced at no additional cost with fresh Hot Mix Asphalt Pavement, which shall be immediately compacted to conform to the adjacent area.

The Contractor shall repair or replace any roller found to be worn or defective, either before or during placement, to the satisfaction of the Department. Rollers that produce grooved, unevenly textured or non-uniform mat will be repaired or replaced before continuing to place HMA on MaineDOT projects.

The type of rollers to be used and their relative position in the compaction sequence shall generally be the Contractor’s option, provided specification densities are attained and with the following requirements:

- a. On variable-depth courses, the first lift of pavement over gravel, reclaimed pavement, on irregular or milled surfaces, or on bridges, at least one roller shall be 14.5 Mg [16 ton] pneumatic-tired. Unless otherwise allowed by the Resident, pneumatic-tired rollers shall be equipped with skirting to minimize the pickup of HMA materials from the paved surface. When required by the Resident, the roller shall be ballasted to 18.1 Mg [20 ton].

- b. Compaction with a vibratory or steel wheel roller shall precede pneumatic-tired rolling, unless otherwise authorized by the Department.

- c. Vibratory rollers shall not be operated in the vibratory mode when checking or cracking of the mat occurs, or on bridge decks.

- d. Any method, which results in cracking or checking of the mat, will be discontinued and corrective action taken.

The maximum operating speed for a steel wheel or pneumatic roller shall not exceed the manufacturer’s recommendations, a copy of which shall be available if requested.

401.101 Surface Tolerances The Department will check surface tolerance utilizing the following methods:

- a.) A 5 m [16 ft] straightedge or string line placed directly on the surface, parallel to the centerline of pavement.

- b.) A 3 m [10 ft] straightedge or string line placed directly on the surface, transverse to the centerline of pavement.

The Contractor shall correct variations exceeding 6 mm [¼ in] by removing defective work and replacing it with new material as directed by the Department. The Contractor shall furnish a 10 foot straightedge for the Department's use.

401.11 Preparation of Existing Surface The Contractor shall thoroughly clean the surface upon which Hot Mix Asphalt Pavement is to be placed of all objectionable material. When the surface of the existing base or pavement is irregular, the Contractor shall bring it to uniform grade and cross section. All surfaces shall have a tack coat applied prior to placing any HMA course. Tack coat shall conform to the requirements of Section 409 – Bituminous Tack Coat, Section 702 – Bituminous Material, and all applicable sections of the contract.
401.12 Hot Mix Asphalt Documentation  The Contractor and the Department shall agree on the amount of Hot Mix Asphalt Pavement that has been placed each day.

401.13 Preparation of Aggregates  The Contractor shall dry and heat the aggregates for the HMA to the required temperature. The Contractor shall properly adjust flames to avoid physical damage to the aggregate and to avoid depositing soot on the aggregate.

401.14 Mixing  The Contractor shall combine the dried aggregate in the mixer in the amount of each fraction of aggregate required to meet the JMF. The Contractor shall measure the amount of PGAB and introduce it into the mixer in the amount specified by the JMF.

The Contractor shall produce the HMA at the temperature established by the JMF.

The Contractor shall dry the aggregate sufficiently so that the HMA will not flush, foam excessively, or displace excessively under the action of the rollers. The Contractor shall introduce the aggregate into the mixer at a temperature of not more than 14°C [25°F] above the temperature at which the viscosity of the PGAB being used is 0.150 Pa\textsuperscript{s}.

The Contractor shall store and introduce into the mixer the Performance Graded Asphalt Binder at a uniformly maintained temperature at which the viscosity of the PGAB is between 0.150 Pa\textsuperscript{s} and 0.300 Pa\textsuperscript{s}. The aggregate shall be coated completely and uniformly with a thorough distribution of the PGAB. The Contractor shall determine the wet mixing time for each plant and for each type of aggregate used.

401.15 Spreading and Finishing  On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, the Contractor shall spread, rake, and lute the HMA with hand tools to provide the required compacted thickness. Solvent based agents developed to strip asphalts from aggregates will not be allowed as release agents.

On roadways with adjoining lanes carrying traffic, the Contractor shall place each course over the full width of the traveled way section being paved that day, unless otherwise noted by the Department in Section 403 - Hot Bituminous Pavement.

401.16 Compaction  Immediately after the Hot Mix Asphalt Pavement has been spread, struck off, and any surface irregularities adjusted, the Contractor shall thoroughly and uniformly compact the HMA by rolling.

The Contractor shall roll the surface when the mixture is in the proper condition and when the rolling does not cause undue displacement, cracking, or shoving. The Contractor shall prevent adhesion of the HMA to the rollers or vibrating compactors without the use of fuel oil or other petroleum based release agents. Solvents designed to strip asphalt binders from aggregates will not be permitted as release agents on equipment, tools, or pavement surfaces.

The Contractor shall immediately correct any displacement occurring as a result of the reversing of the direction of a roller or from other causes to the satisfaction of the Department. Any operation other than placement of variable depth shim course that results in breakdown of the aggregate shall be discontinued. Any new pavement that shows obvious cracking, checking, or displacement shall be removed and replaced for the full lane width as directed by the Resident at no cost to the Department.

Along forms, curbs, headers, walls, and other places not accessible to the rollers, the Contractor shall thoroughly compact the HMA with mechanical vibrating compactors. The Contractor shall only use hand
tamping in areas inaccessible to all other compaction equipment. On depressed areas, the Contractor may use a trench roller or cleated compression strips under a roller to transmit compression to the depressed area.

Any HMA that becomes unacceptable due to cooling, cracking, checking, segregation or deformation as a result of an interruption in mix delivery shall be removed and replaced, with material that meets contract specifications at no cost to the Department.

401.17 Joints  The Contractor shall construct wearing course transverse joints in such a manner that minimum tolerances shown in Section 401.101 - Surface Tolerances are met when measured with a straightedge.

The paver shall maintain a uniform head of HMA during transverse and longitudinal joint construction.

The HMA shall be free of segregation and meet temperature requirements outlined in section 401.04. Transverse joints of the wearing course shall be straight and neatly trimmed. The Contractor may form a vertical face exposing the full depth of the course by inserting a header, by breaking the bond with the underlying course, or by cutting back with hand tools. The Department may allow feathered or "lap" joints on lower base courses or when matching existing base type pavements.

Longitudinal joints shall be generally straight to the line of travel, and constructed in a manner that best ensure joint integrity. Methods or activities that prove detrimental to the construction of straight, sound longitudinal joints will be discontinued.

The Contractor shall apply a coating of emulsified asphalt immediately before paving all joints to the vertical face and 75 mm [3 in] of the adjacent portion of any pavement being overlaid except those formed by pavers operating in echelon. The Contractor shall use an approved spray apparatus designed for covering a narrow surface. The Department may approve application by a brush for small surfaces, or in the event of a malfunction of the spray apparatus, but for a period of not more than one working day.

Where pavement under this contract joins an existing pavement, or when the Department directs, the Contractor shall cut the existing pavement along a smooth line, producing a neat, even, vertical joint. The Department will not permit broken or raveled edges. The cost of all work necessary for the preparation of joints is incidental to related contract pay items.

401.18 Quality Control Method A, B & C  The Contractor shall operate in accordance with the approved Quality Control Plan (QCP) to assure a product meeting the contract requirements. The QCP shall meet the requirements of Section 106.6 - Acceptance and this Section. The Contractor shall not begin paving operations until the Department approves the QCP in writing.

Prior to placing any mix, the Department and the Contractor shall hold a Pre-paving conference to discuss the paving schedule, source of mix, type and amount of equipment to be used, sequence of paving pattern, rate of mix supply, random sampling, project lots and sublots and traffic control. A copy of the QC random numbers to be used on the project shall be provided to The Resident. The Departments’ random numbers for Acceptance testing shall be generated and on file with the Resident and the Project Manager. All field and plant supervisors including the responsible onsite paving supervisor shall attend this meeting.
The QCP shall address any items that affect the quality of the Hot Mix Asphalt Pavement including, but not limited to, the following:

a. JMF(s)
b. Hot mix asphalt plant details
c. Stockpile Management (to include provisions for a minimum 2 day stockpile)
d. Make and type of paver(s)
e. Make and type of rollers including weight, weight per inch of steel wheels, and average contact pressure for pneumatic tired rollers
f. Name of QCP Administrator, and certification number
g. Name of Process Control Technician(s) and certification number(s)
h. Name of Quality Control Technicians(s) and certification number(s)
i. Mixing & transportation including process for ensuring that truck bodies are clean and free of debris or contamination that could adversely affect the finished pavement
j. Testing Plan
k. Laydown operations including longitudinal joint construction, procedures for avoiding paving in inclement weather, type of release agent to be used on trucks tools and rollers, compaction of shoulders, tacking of all joints, methods to ensure that segregation is minimized, procedures to determine the maximum rolling and paving speeds based on best engineering practices as well as past experience in achieving the best possible smoothness of the pavement. Solvent based agents developed to strip asphalts from aggregates will not be allowed as release agents.
l. Examples of Quality Control forms including a daily plant report and a daily paving report
m. Silo management and details (can show storage for use on project of up to 36 hours)
n. Provisions for varying mix temperature due to extraordinary conditions.
o. Name and responsibilities of the Responsible onsite Paving Supervisor.
p. Method for calibration/verification of Density Gauge
q. A note that all testing will be done in accordance with AASHTO and the Maine DOT Policies and Procedures for HMA Sampling and Testing.
r. A detailed description of RAP processing, stockpiling and introduction into the plant as well as a note detailing conditions under which the percent of RAP will vary from that specified on the JMF.
s. A detailed procedure outlining when production will be halted due to QC or Acceptance testing results.
t. A plan to address the change in PGAB source or supplier and the potential co-mingling of differing PGAB’s.
u. A procedure to take immediate possession of acceptance samples once released by MaineDOT and deliver said samples to the designated acceptance laboratory.
v. Provisions for how the QCP will be communicated to the Contractor’s field personnel

The QCP shall include the following technicians together with following minimum requirements:

a. QCP Administrator - A qualified individual shall administer the QCP. The QCP Administrator must be a full-time employee of or a consultant engaged by the Contractor or paving subcontractor. The QCP Administrator shall have full authority to institute any and all actions necessary for the successful operation of the QCP. The QCP Administrator (or its designee in the QCP Administrator’s absence) shall be available to communicate with the Department at all times. The QCP Administrator shall be certified as a Quality Assurance Technologist certified by the New England Transportation Technician Certification Program (NETTCP).
b. Process Control Technician(s) (PCT) shall utilize test results and other quality control practices to assure the quality of aggregates and other mix components and control proportioning to meet the JMF(s). The PCT shall inspect all equipment used in mixing to assure it is operating properly and that mixing conforms to the mix design(s) and other Contract requirements. The QCP shall detail how these duties and responsibilities are to be accomplished and documented, and whether more than one PCT is required. The Plan shall include the criteria to be utilized by the PCT to correct or reject unsatisfactory materials. The PCT shall be certified as a Plant Technician by the NETTCP.

c. Quality Control Technician(s) (QCT) shall perform and utilize quality control tests at the job site to assure that delivered materials meet the requirements of the JMF(s). The QCT shall inspect all equipment utilized in transporting, laydown, and compacting to assure it is operating properly and that all laydown and compaction conform to the Contract requirements. The QCP shall detail how these duties and responsibilities are to be accomplished and documented, and whether more than one QCT is required. The QCP shall include the criteria utilized by the QCT to correct or reject unsatisfactory materials. The QCT shall be certified as a Paving Inspector by the NETTCP.

The QCP shall detail the coordination of the activities of the Plan Administrator, the PCT and the QCT. The Project Superintendent shall be named in the QCP, and the responsibilities for successful implementation of the QCP shall be outlined.

The Contractor shall sample, test, and evaluate Hot Mix Asphalt Pavement in accordance with the following minimum frequencies:

<table>
<thead>
<tr>
<th>Test or Action</th>
<th>Frequency</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature of mix</td>
<td>6 per day at street and plant</td>
<td>-</td>
</tr>
<tr>
<td>Temperature of mat</td>
<td>4 per day</td>
<td>-</td>
</tr>
<tr>
<td>%TMD (Surface)</td>
<td>1 per 125 Mg [125 ton] (As noted in QC Plan)</td>
<td>ASTM D2950</td>
</tr>
<tr>
<td>%TMD (Base)</td>
<td>1 per 250 Mg [250 ton] (As noted in QC Plan)</td>
<td>AASHTO T269</td>
</tr>
<tr>
<td>Fines / Effective Binder</td>
<td>1 per 500 Mg [500 ton]</td>
<td>AASHTO T 312*</td>
</tr>
<tr>
<td>Gradation</td>
<td>1 per 500 Mg [500 ton]</td>
<td>AASHTO T30</td>
</tr>
<tr>
<td>PGAB content</td>
<td>1 per 500 Mg [500 ton]</td>
<td>AASHTO T164 or T308</td>
</tr>
<tr>
<td>Voids at N&lt;sub&gt;design&lt;/sub&gt;</td>
<td>1 per 500 Mg [500 ton]</td>
<td>AASHTO T 312*</td>
</tr>
<tr>
<td>Voids in Mineral Aggregate at N&lt;sub&gt;design&lt;/sub&gt;</td>
<td>1 per 500 Mg [500 ton]</td>
<td>AASHTO T 312*</td>
</tr>
<tr>
<td>Rice Specific Gravity</td>
<td>1 per 500 Mg [500 ton]</td>
<td>AASHTO T209</td>
</tr>
<tr>
<td>Coarse Aggregate Angularity</td>
<td>1 per 5000 Mg [5000 ton]</td>
<td>ASTM D5821</td>
</tr>
<tr>
<td>Flat and Elongated Particles</td>
<td>1 per 5000 Mg [5000 ton]</td>
<td>ASTM D4791</td>
</tr>
<tr>
<td>Fine Aggregate Angularity</td>
<td>1 Per 5000 Mg [5000 ton]</td>
<td>AASHTO T304</td>
</tr>
</tbody>
</table>

*Method A and B only

The Contractor may utilize innovative equipment or techniques not addressed by the Contract documents to produce or monitor the production of the mix, subject to approval by the Department.

The Contractor shall submit all Hot Mix Asphalt Pavement plant test reports, inspection reports and updated pay factors in writing, signed by the appropriate technician and present them to the Department by 1:00 P.M. on the next working day, except when otherwise noted in the QCP due to local restrictions. The Contractor shall also
retain splits of the previous 5 QC tests, with QC results enclosed for random selection and testing by The Department during QA inspections of the HMA production facility. Test results of splits that do not meet the Dispute Resolution Variance Limits in Table 10 shall trigger an investigation by the MDOT Independent Assurance Unit, and may result in that lab losing NETTCP certification and the ability to request a dispute [Section 401.223 - Process for Dispute Resolution (Methods A, B and C only)].

The Contractor shall make density test results, including randomly sampled densities, available to the Department onsite. Summaries of each day's results, including a daily paving report, shall be recorded and signed by the QCT and presented to the Department by 1:00 p.m. the next working day.

The Contractor shall have a testing lab at the plant site, equipped with all testing equipment necessary to complete the tests in Table 2. The Contractor shall locate an approved Gyratory Compactor at the plant testing lab or within 30 minutes of the plant site.

The Contractor shall fill all holes in the pavement resulting from cutting cores by the Contractor or the Department with a properly compacted, acceptable mixture no later than the following working day. Before filling, the Contractor shall carefully clean the holes and apply a coating of emulsified asphalt. On surface courses, cores shall not be cut except for Verification of the Nuclear Density Gauge, at a rate not to exceed 3 per day or 2 per 1000 Mg [1000 ton] placed.

The Contractor shall monitor plant production using running average of three control charts as specified in Section 106 - Quality. Control limits shall be as noted in Table 3 below. The UCL and LCL, shall not exceed the allowable gradation control points for the particular type of mixture as outlined in Table 1 of section 703.09

<table>
<thead>
<tr>
<th>Property</th>
<th>UCL and LCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passing 4.75 mm and larger sieves</td>
<td>Target +/-4.0</td>
</tr>
<tr>
<td>Passing 2.36 mm sieve</td>
<td>Target +/-2.5</td>
</tr>
<tr>
<td>Passing .075 mm sieve</td>
<td>Target +/-1.2</td>
</tr>
<tr>
<td>PGAB Content*</td>
<td>Target +/-0.3</td>
</tr>
<tr>
<td>Voids in the Mineral Aggregate</td>
<td>LCL = LSL + 0.2</td>
</tr>
<tr>
<td>% Voids at (N_{\text{design}})</td>
<td>JMF Target +/-1.3</td>
</tr>
</tbody>
</table>

*Based on AASHTO T 308

The Contractor shall cease paving operations whenever one of the following occurs on a lot in progress:

a. Method A: The Pay Factor for VMA, Voids @ \(N_d\), Percent PGAB, composite gradation, VFB, fines to effective binder or density using all Acceptance or all Quality Control tests for the current lot is less than 0.85.

b. Method B: The Pay Factor for VMA, Voids @ \(N_d\), Percent PGAB, composite gradation, VFB, fines to effective binder or density using all Acceptance or all Quality Control tests for the current lot is less than 0.90.

c. Method C: The Pay Factor for VMA, Voids @ \(N_d\), Percent PGAB, percent passing the nominal maximum sieve, percent passing 2.36 mm sieve, percent passing 0.300 mm sieve, percent passing 0.075 mm sieve or density using all Acceptance or all available Quality Control tests for the current lot is less than 0.85.

d. The Coarse Aggregate Angularity or Fine Aggregate Angularity value falls below the requirements of Table 3: Aggregate Consensus Properties Criteria in Section 703.07 for the design traffic level.

e. Each of the first 2 control tests for a Method A or B lot fall outside the upper or lower limits for VMA, Voids @ \(N_d\), or Percent PGAB; or under Method C, each of the first 2 control tests for the lot fall
outside the upper or lower limits for the nominal maximum, 2.36 mm, 0.300 mm or 0.075 mm sieves, or percent PGAB.

f. The Flat and Elongated Particles value exceeds 10% by ASTM D4791.

g. There is any visible damage to the aggregate due to over-densification other than on variable depth shim courses.

h. The Contractor fails to follow the approved QCP.

The Contractor shall notify the Resident in writing as to the reason for shutdown, as well as the proposed corrective action, by the end of the work day. Failure to do so will be treated as a second incident under 106.4.6 QCP Non-compliance. The Department will consider corrective action acceptable if the pay factor for the failing property increases, based on samples already in transit, or a verification sample is tested and the property falls within the specification limits.

In cases where the corrective action can be accomplished immediately, such as batch weight or cold feed changes, the Contractor may elect to resume production once the corrective action is completed. Additional QC testing shall be performed to verify the effectiveness of the corrective action. Subsequent occurrences of shutdown for the same property in a Lot in progress will require paving operations to cease. Paving operations shall not resume until the Contractor and the Department determines that material meeting the Contract requirements will be produced. The Department may allow the Contractor to resume production based upon a passing QC sample, with a split of the sample being sent to the Department for verification testing. If the submitted verification sample test results fall outside the specification limits, the Contractor shall cease production until a verification sample is submitted to the Department has been tested by the Department and found to be within specification limits.

If the Contractor’s control chart shows the process to be out of control (defined as a single point outside of the control limits on the running average of three chart) on any property listed in Table 3: Control Limits, the Contractor shall notify the Resident in writing of any proposed corrective action by 1:00 PM the next working day.

The Department retains the exclusive right, with the exception of the first day’s production of a new JMF, to determine whether the resumption of production involves a significant change to the production process. If the Department so determines, then the current lot will be terminated, a pay factor established, and a new lot will begin.

401.19 Quality Control Method D For Items covered under Method D, the Contractor shall submit a modified QC Plan detailing, how the mix is to be placed, what equipment is to be used, and what HMA plant is to be used. All mix designs (JMF) shall be approved and verified by MDOT prior to use. Certified QC personnel shall not be required. The Contractor shall certify the mix and the test results for each item by a Certificate of Compliance.

401.20 Acceptance Method A, B & C These methods utilizes Quality Level Analysis and pay factor specifications. For Hot Mix Asphalt Pavement designated for acceptance under Quality Assurance provisions, the Department will sample once per sublot on a statistically random basis, test, and evaluate in accordance with the following Acceptance Criteria:
### TABLE 4: ACCEPTANCE CRITERIA

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>POINT OF SAMPLING</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradation</td>
<td>Paver Hopper</td>
<td>AASHTO T30</td>
</tr>
<tr>
<td>PGAB Content</td>
<td>Paver Hopper</td>
<td>AASHTO T308</td>
</tr>
<tr>
<td>%TMD (Surface)</td>
<td>Mat behind all Rollers</td>
<td>AASHTO T269</td>
</tr>
<tr>
<td>%TMD (Base or Binder)</td>
<td>Mat behind all Rollers</td>
<td>AASHTO T269</td>
</tr>
<tr>
<td>Air Voids at N&lt;sub&gt;d&lt;/sub&gt;</td>
<td>Paver Hopper</td>
<td>AASHTO T312</td>
</tr>
<tr>
<td>%VMA at N&lt;sub&gt;d&lt;/sub&gt;</td>
<td>Paver Hopper</td>
<td>AASHTO T312</td>
</tr>
<tr>
<td>Fines to Effective Binder</td>
<td>Paver Hopper</td>
<td>AASHTO T312</td>
</tr>
<tr>
<td>%VFB</td>
<td>Paver Hopper</td>
<td>AASHTO T312</td>
</tr>
</tbody>
</table>

In the event the Department terminates a Lot prematurely but fails to obtain the required number of acceptance samples to calculate the volumetric property pay factor under the test method specified in the contract, the pay factor shall be calculated using the number of samples actually obtained from the contract. Should the number of acceptance samples taken total less than three, the resulting pay factor shall be 1.0 for volumetric properties. A minimum of three cores will be used for a density pay factor, if applicable, for quantities placed to date.

Should the Contractor request a termination of the Lot in progress prior to three acceptance samples being obtained, and the Department agrees to terminate the Lot, then the pay factor for mixture properties shall be 0.80. A minimum of three cores will be used to determine a density pay factor, if applicable, for quantities placed to date.

**Lot Size**  For purposes of evaluating all acceptance test properties, a lot shall consist of the total quantity represented by each item listed under the lot size heading.

**Sublot size**  - Refer to section 401.201, 401.202, and 401.203 for minimum size and number of sublots. The quantity represented by each sample will constitute a sublot.

If there is less than one-half of a sublot remaining at the end, then it shall be combined with the previous sublot. If there is more than one-half sublot remaining at the end, then it shall constitute the last sublot and shall be represented by test results. If it becomes apparent partway through a Lot that, due to an underrun, there will be insufficient mix quantity to obtain the minimum number of sublots needed, the Resident may adjust the size of the remaining sublots and select new sample locations based on the estimated quantity of material remaining in the Lot.

**Acceptance Testing**  The Department will obtain samples of Hot Mix Asphalt Pavement in conformance with AASHTO T168 Sampling Bituminous Paving Mixtures, and the Maine DOT Policies and Procedures for HMA Sampling and Testing, which will then be transported by the Contractor to the designated MDOT Laboratory within 48 hours (except when otherwise noted in the project specific QCP due to local restrictions), as directed by MDOT in approved transport containers to be provided by the Department, unless otherwise directed by the Resident. Failure to deliver an acceptance sample to the designated acceptance laboratory will be considered the second incident under 106.4.6–QCP Non-Compliance.
The Department will take the sample randomly within each sublot. Target values shall be as specified in the JMF. The Department will use Table 5 for calculating pay factors for gradation, PGAB Content, Air Voids at N\textsubscript{design}, VMA, Fines to Effective Binder and VFB. The Department will withhold reporting of the test results for the Acceptance sample until \textit{7:00 AM, on the second working day} of receipt of the sample, or after receipt of the Contractors results of the Acceptance sample split. Upon conclusion of each lot, where there is a minimum of four sublots, results shall be examined for statistical outliers, as stated in Section 106.7.2 - Statistical Outliers.

\textbf{Isolated Areas} During the course of inspection, should it appear that there is an isolated area that is not representative of the lot based on a lack of observed compactive effort, excessive segregation or any other questionable practice, that area may be isolated and tested separately. An area so isolated that has a calculated pay factor below 0.80, based on three random tests shall be removed and replaced at the expense of the Contractor for the full lane width and a length not to be less than 50 m [150 ft].

\textbf{Pavement Density} The Department will measure pavement density using core samples tested according to AASHTO T-166. The Department will randomly determine core locations. The Contractor shall cut 6 inch diameter cores at no additional cost to the Department by the end of the working day following the day the pavement is placed, and immediately give them to the Department. Cores for Acceptance testing shall be cut such that the nearest edge is never within 0.225 m (9 inches) of any joint. The cores will be placed in a transport container provided by the Department and transported by the Contractor to the designated MDOT Lab as directed by the Department. Pre-testing of the cores will not be allowed. At the time of sampling, the Contractor and the Department shall mutually determine if a core is damaged. If it is determined that the core(s) is damaged, the Contractor shall cut new core(s) at the same offset and within 1 m [3 ft] of the initial sample. At the time the core is cut, the Contractor and the Department will mutually determine if saw cutting of the core is needed, and will mark the core at the point where sawing is needed. The core may be saw cut by the Contractor in the Department's presence onsite, or in an MDOT Lab by The Department, without disturbing the layer being tested to remove lower layers of Hot Mix Asphalt Pavement, gravel, or RAP. No recuts are allowed at a test location after the core has been tested. Upon conclusion of each lot, density results shall be examined for statistical outliers as stated in Section 106.7.2.

On all sections of overlay with wearing courses designed to be 19 mm [3/4 in] or less in thickness, there shall be no pay adjustment for density otherwise noted in Section 403 - Hot Bituminous Pavement. For overlays designed to be 19 mm [3/4 in] or less in thickness, density shall be obtained by the same rolling train and methods as used on mainline travelway surface courses with a pay adjustments for density, unless otherwise directed by the Department.

There shall be no pay adjustment for density on shoulders unless otherwise noted in Section 403 - Hot Bituminous Pavement. Density for shoulders shall be obtained by the same rolling train and methods as used on mainline travelway, unless otherwise directed by the Department. Efforts to obtain optimum compaction will not be waived by the Department unless it is apparent during construction that local conditions make densification to this point detrimental to the finished pavement surface course.

\textbf{401.201 Method A Lot Size} will be the entire production per JMF for the project, or if so agreed at the Pre-paving Conference, equal lots of up to 4500 Mg [4500 tons], with unanticipated over-runs of up to 1500 Mg [1500 ton] rolled into the last lot. Sublot sizes shall be 750 Mg [750 ton] for mixture properties, 500 Mg [500 ton] for base or binder densities and 250 Mg [250 ton] for surface densities. The minimum number of sublots for mixture properties shall be 4, and the minimum number of sublots for density shall be five.
**TABLE 5: METHOD A ACCEPTANCE LIMITS**

<table>
<thead>
<tr>
<th>Property</th>
<th>USL and LSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passing 4.75 mm and larger sieves</td>
<td>Target +/-7%</td>
</tr>
<tr>
<td>Passing 2.36 mm to 1.18 mm sieves</td>
<td>Target +/-4%</td>
</tr>
<tr>
<td>Passing 0.60 mm</td>
<td>Target +/-3%</td>
</tr>
<tr>
<td>Passing 0.30 mm to 0.075 mm sieve</td>
<td>Target +/-2%</td>
</tr>
<tr>
<td>PGAB Content</td>
<td>Target +/-0.4%</td>
</tr>
<tr>
<td>Air Voids</td>
<td>4.0% +/-1.5%</td>
</tr>
<tr>
<td>Fines to Effective Binder</td>
<td>0.9 +/-0.3</td>
</tr>
<tr>
<td>Voids in the Mineral Aggregate</td>
<td>LSL Only from Table 1</td>
</tr>
<tr>
<td>Voids Filled with Binder</td>
<td>Table 1 values plus a 4% production tolerance for USL only</td>
</tr>
<tr>
<td>% TMD (In place density)</td>
<td>95.0% +/- 2.5%</td>
</tr>
</tbody>
</table>

401.202 Method B  Lot Size will be the entire production per JMF for the project and shall be divided into 3 equal sublots for Mixture Properties and 3 equal sublots for density.

**TABLE 6: METHOD B ACCEPTANCE LIMITS**

<table>
<thead>
<tr>
<th>Property</th>
<th>USL and LSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Passing 4.75 mm and larger sieves</td>
<td>Target +/-7</td>
</tr>
<tr>
<td>Percent Passing 2.36 mm to 1.18 mm sieves</td>
<td>Target +/-5</td>
</tr>
<tr>
<td>Percent Passing 0.60 mm</td>
<td>Target +/-4</td>
</tr>
<tr>
<td>Percent Passing 0.30 mm to 0.075 mm sieve</td>
<td>Target +/-3</td>
</tr>
<tr>
<td>PGAB Content</td>
<td>Target +/-0.5</td>
</tr>
<tr>
<td>Air Voids</td>
<td>4.0% +/-2.0</td>
</tr>
<tr>
<td>Fines to Effective Binder</td>
<td>0.9 +/-0.3</td>
</tr>
<tr>
<td>Voids in the Mineral Aggregate</td>
<td>LSL from Table 1</td>
</tr>
<tr>
<td>Voids Filled with Binder</td>
<td>Table 1 plus a 4% production tolerance for USL.</td>
</tr>
<tr>
<td>% TMD (In-place Density)</td>
<td>95.0% +/- 2.5%</td>
</tr>
</tbody>
</table>

401.203 Testing Method C  Lot Size will be the entire production per JMF for the project, or if so agreed at the Pre-paving Conference, equal lots of up to 4500 Mg [4500 tons], with unanticipated over-runs of up to 1500 Mg [1500 ton] rolled into the last lot. Sublot sizes shall be 750 Mg [750 ton] for mixture properties, 500 Mg [500 ton] for base or binder densities and 250 Mg [250 ton] for surface densities. The minimum number of sublots for mixture properties shall be 4, and the minimum number of sublots for density shall be five.
### TABLE 7: METHOD C ACCEPTANCE LIMITS

<table>
<thead>
<tr>
<th>Property</th>
<th>USL and LSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passing 4.75 mm and larger sieves</td>
<td>Target +/-7%</td>
</tr>
<tr>
<td>Passing 2.36 mm to 1.18 mm sieves</td>
<td>Target +/-5%</td>
</tr>
<tr>
<td>Passing 0.60 mm</td>
<td>Target +/-4%</td>
</tr>
<tr>
<td>Passing 0.30 mm to 0.075 mm sieve</td>
<td>Target +/-2%</td>
</tr>
<tr>
<td>PGAB Content</td>
<td>Target +/-0.4%</td>
</tr>
<tr>
<td>Air Voids</td>
<td>4.0% +/-1.5%</td>
</tr>
<tr>
<td>Fines to Effective Binder</td>
<td>0.9 +/-0.3</td>
</tr>
<tr>
<td>Voids in the Mineral Aggregate</td>
<td>LSL Only from Table 1</td>
</tr>
<tr>
<td>Voids Filled with Binder</td>
<td>Table 1 values plus a 4% production tolerance for USL only</td>
</tr>
<tr>
<td>% TMD (In place density)</td>
<td>95.0% +/- 2.5%</td>
</tr>
</tbody>
</table>

### TABLE 8: METHOD D ACCEPTANCE LIMITS

<table>
<thead>
<tr>
<th>Property</th>
<th>USL and LSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Passing 4.75 mm and larger sieves</td>
<td>Target +/-7</td>
</tr>
<tr>
<td>Percent Passing 2.36 mm to 1.18 mm sieves</td>
<td>Target +/-5</td>
</tr>
<tr>
<td>Percent Passing 0.60 mm</td>
<td>Target +/-4</td>
</tr>
<tr>
<td>Percent Passing 0.30 mm to 0.075 mm sieve</td>
<td>Target +/-3</td>
</tr>
<tr>
<td>PGAB Content</td>
<td>Target +/-0.5</td>
</tr>
<tr>
<td>% TMD (In-place Density)</td>
<td>95.0% +/- 2.5</td>
</tr>
</tbody>
</table>

#### TABLE 8b Method “D” Price Adjustments

<table>
<thead>
<tr>
<th>Property</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGAB Content</td>
<td>-5%</td>
</tr>
<tr>
<td>2.36 mm sieve</td>
<td>-2%</td>
</tr>
<tr>
<td>0.30 mm sieve</td>
<td>-1%</td>
</tr>
<tr>
<td>0.075 mm sieve</td>
<td>-2%</td>
</tr>
<tr>
<td>Density</td>
<td>-10%</td>
</tr>
</tbody>
</table>

401.204 Testing Method D  For hot mix asphalt items designated as Method D in Section 403 - Hot Bituminous Pavement, one sample will be taken from the paver hopper or the truck body per 250 Mg [250 ton] per pay item. The mix will be tested for gradation and PGAB content. Disputes will not be allowed. If the mix is within the tolerances listed in Table 8: Method D Acceptance Limits, the Department will pay the contract unit price. Contractor shall cut two 150 mm [6 in] cores, which shall be tested for percent TMD per AASHTO T-269 unless otherwise noted in Section 403 - Hot Bituminous Pavement. If the average for the two tests falls below 92.5% the disincentive shall apply. If the test results for each 250 Mg [250 ton] increment are outside these limits, the following deductions (Table 8b) shall apply to the HMA quantity represented by the test.

401.21 Method of Measurement The Department will measure Hot Mix Asphalt Pavement by the Mg [ton] in accordance with Section 108.1 - Measurement of Quantities for Payment.

401.22 Basis of Payment The Department will pay for the work, in place and accepted, in accordance with the applicable sections of this Section, for each type of HMA specified.
The Department will pay for the work specified in Section 401.11, for the HMA used, except that cleaning objectionable material from the pavement and furnishing and applying bituminous material to joints and contact surfaces is incidental.

Payment for this work under the appropriate pay items shall be full compensation for all labor, equipment, materials, and incidentals necessary to meet all related contract requirements, including design of the JMF, implementation of the QCP, obtaining core samples, transporting cores and samples, filling core holes, applying emulsified asphalt to joints, and providing testing facilities and equipment. The Department will make a pay adjustment for quality as specified below.

401.221 Pay Adjustment The Department will sample, test, and evaluate Hot Mix Asphalt Pavement in accordance with Section 106 - Quality and Section 401.20 - Acceptance, of this Specification.

401.222 Pay Factor (PF) The Department will use the following criteria for pay adjustment using the pay adjustment factors under Section 106.7 - Quality Level Analysis:

**Density** If the pay factor for Density falls below 0.80 for Method A or C or 0.86 for Method B, all of the cores will be randomly re-cut by Sublot. A new pay factor will be calculated that combines all initial and retest results. If the resulting pay factor is below 0.80 for Method A or C or below 0.86 for Method B, the entire Lot shall be removed and replaced with material meeting the specifications at no additional cost to the Department, except that the Department may, when it appears that there is a distinct pattern of defective material, isolate any defective material by investigating each mix sample subplot and require removal of defective mix sample sublots only, leaving any acceptable material in place if it is found to be free of defective material. Pay factors equal to or greater than the reject level will be paid accordingly.

**Gradation** For HMA evaluated under Acceptance Method A or B, the Department will determine a composite pay factor (CPF) using applicable price adjustment factors “f” from Table 9: Table of Gradation Composite “f” Factors, and Acceptance limits from Table 5: Method A Acceptance Limits, for Method A or Table 6: Method B Acceptance Limits, for Method B. The Department will not make price adjustments for gradation on Methods A and B, but will monitor them as shutdown criteria.

**TABLE 9: TABLE OF GRADATION COMPOSITE "f" FACTORS (Methods A and B)**

<table>
<thead>
<tr>
<th>Constituent</th>
<th>19 mm</th>
<th>12.5 mm</th>
<th>9.5 mm</th>
<th>4.75 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradation</td>
<td>25 mm</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>19 mm</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>12.5 mm</td>
<td>4</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>9.50 mm</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>2.36 mm</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1.18 mm</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>0.60 mm</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>0.30 mm</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>0.075 mm</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

For HMA evaluated under Acceptance Method C, the Department will determine a pay factor using acceptance limits from Table 7: Method C Acceptance Limits.
VMA, Air Voids, VFB and Fines to Effective Binder The Department will determine a pay factor (PF) using the applicable Acceptance Limits.

The following variables will be used for pay adjustment:

\[
\begin{align*}
PA & = \text{Pay Adjustment} \\
Q & = \text{Quantity represented by PF in Mg [ton]} \\
P & = \text{Contract price per Mg [ton]} \\
PF & = \text{Pay Factor}
\end{align*}
\]

Pay Adjustment Method A

The Department will use the following criteria for pay adjustment: density, Performance Graded Asphalt Binder content, voids \(N_d\), VMA, VFB, F/\(B_{eff}\), and the screen sizes listed in Table 9 for the type of HMA represented in the JMF. If any single pay factor for PGAB Content, VMA, or Air Voids falls below 0.80, then the composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.55.

Density: For mixes having a density requirement, the Department will determine a pay factor using Table 5: Method A Acceptance Limits:

\[
PA = (\text{density PF-1.0})(Q)(P)x0.50
\]

PGAB Content, VMA and Air Voids: The Department will determine a pay adjustment using Table 5: Method A Acceptance Limits as follows:

\[
PA = (\text{voids @ } N_d \text{ PF-1.0})(Q)(P)x0.20 + (\text{VMA @ } N_d \text{ PF-1.0})(Q)(P)x0.20 + (\text{PGAB PF-1.0})(Q)(P)x0.10
\]

Pay Adjustment Method B

The Department will use the following criteria for pay adjustment: density, Performance Graded Asphalt Binder content, voids \(N_d\), VMA, VFB, F/\(B_{eff}\), and the screen sizes listed in Table 9 for the type of HMA represented in the JMF. If any single pay factor for PGAB Content, VMA, or Air Voids falls below 0.86, then the composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.70.

Density: For mixes having a density requirement, the Department will determine a pay factor using Table 6: Method B Acceptance Limits:

\[
PA = (\text{density PF-1.0})(Q)(P)x0.50
\]

PGAB Content, VMA and Air Voids: The Department will determine a pay adjustment using Table 6: Method B Acceptance Limits as follows:

\[
PA = (\text{voids @ } N_d \text{ PF-1.0})(Q)(P)x0.20 + (\text{VMA @ } N_d \text{ PF-1.0})(Q)(P)x0.20 + (\text{PGAB PF-1.0})(Q)(P)x0.10
\]
**VFB and Fines to Effective Binder**  The Department will determine a pay factor (PF) using Table 6: Method B Acceptance Limits. The Department will not make price adjustments for VFB or Fines to Effective Binder, but will monitor them as shutdown criteria.

**Pay Adjustment Method C**

The Department will use density, Performance Graded Asphalt Binder content, and the percent passing the nominal maximum, 2.36 mm, 0.300 mm and 0.075 mm sieves for the type of HMA represented in the JMF. If the PGAB content falls below 0.80, then the PGAB pay factor shall be 0.55.

**Density:** For mixes having a density requirement, the Department will determine a pay factor using Table 7: Method C Acceptance Limits:

\[
PA = (\text{density PF - 1.0})(Q)(P)\times0.50
\]

**PGAB Content and Gradation** The Department will determine a pay factor using Table 7: Method C Acceptance Limits. The Department will calculate the price adjustment for Mixture Properties as follows:

\[
PA = (% \text{ Passing Nom. Max PF - 1.0})(Q)(P)X0.05+ (% \text{ passing 2.36 mm PF - 1.0})(Q)(P)X0.05+ (% \text{ passing 0.30 mm PF - 1.0})(Q)(P)X0.05+ (% \text{ passing 0.075 mm PF - 1.0})(Q)(P)X0.10+ (\text{PGAB PF - 1.0})(Q)(P)X0.25
\]

**VMA, Air Voids, VFB and Fines to Effective Binder** The Department will determine a pay factor (PF) using Table 7: Method C Acceptance Limits. The Department will not make price adjustments for VMA, Air Voids, VFB or Fines to Effective Binder, but will monitor them as shutdown criteria.

**Pay Adjustment Method D**

The Department will use density, Performance Graded Asphalt Binder content, and the screen sizes listed in Table 8b for the type of HMA represented in the JMF. If test results do not meet the Table 8 requirements, deducts as shown in Table 8b shall be applied to the quantity of mix represented by the test.

**401.223 Process for Dispute Resolution (Methods A B & C only)**

**a. Dispute Resolution sampling** At the time of Hot-Mix Asphalt sampling, the Department will obtain a split sample of each Acceptance test random sample for possible dispute resolution testing. The Contractor shall also obtain a split sample of the HMA at this same time. If the Contractor wishes to retain the option of requesting dispute testing of the initial Acceptance sample, the Contractor will test their split of the Acceptance sample and shall report their results to the Resident, with a copy to the QA Engineer at the Central Laboratory in Bangor by 7:00 AM, on the second working day from time of QA sampling, otherwise dispute resolution will not be initiated. The Department’s dispute resolution split sample will be properly labeled and stored for a period of at least two weeks, or until the sample is tested.

**b. Disputing Acceptance results** The Contractor may dispute the Department’s Acceptance results and request (Methods A, B, & C) that the dispute resolution split sample be tested by notifying the Department’s Resident and the QA Engineer at the Central Laboratory in Bangor in writing within two
working days after receiving the results of the Acceptance test. The following shall be provided in the request:

- Acceptance sample reference number
- The specific test result(s) or property(ies) being disputed, and
- The complete, signed report of the Contractor’s testing (In a lab certified by the NETTCP and MDOT) of their split of the Acceptance sample indicating that the variances in Table10: Dispute Resolution Variance Limits, for the specific test result(s) or property(ies) were exceeded.

c. Disputable items  The Contractor may dispute any or all of the following Method A or B test results when the difference between the Department’s value and the Contractor’s value for that test equals or exceeds the corresponding allowable variation in Table 10: Dispute Resolution Variance Limits, PGAB content, $G_{mb}$, and $G_{mm}$. In addition, if the allowable variation for these tests is not met or exceeded, the Contractor may dispute either or both of the following material properties provided the difference between results for them equals or exceeds the corresponding allowable variation in Table 10: Voids at $N_{design}$, and VMA.
For Method C only: The results for PGAB content and the screen sizes used for pay adjustment may be disputed.

d. Outcome  The value of any disputed result or property reported for the initial Acceptance sample shall stand if the value reported for the dispute resolution sample is not closer to the value the Contractor reported for their split sample than to the value reported for the initial Acceptance sample. If the value reported for the dispute resolution falls precisely half-way between the other two values the value reported for the dispute resolution will replace the original acceptance value. Otherwise, the value reported for the dispute resolution sample will replace the value reported for the initial Acceptance sample, and will be used to re-calculate any other affected results or properties.

<table>
<thead>
<tr>
<th>TABLE 10: DISPUTE RESOLUTION VARIANCE LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGAB Content</td>
</tr>
<tr>
<td>$G_{mb}$</td>
</tr>
<tr>
<td>$G_{mm}$</td>
</tr>
<tr>
<td>Voids @ $N_d$</td>
</tr>
<tr>
<td>VMA</td>
</tr>
<tr>
<td>Passing 4.75 mm and larger sieves</td>
</tr>
<tr>
<td>Passing 2.36 mm to 0.60 mm sieves</td>
</tr>
<tr>
<td>Passing 0.30 mm to 0.15</td>
</tr>
<tr>
<td>0.075 mm sieve</td>
</tr>
</tbody>
</table>

SECTION 402 - PAVEMENT SMOOTHNESS

402.00 Smoothness Projects  Projects to have their pavement smoothness analyzed in accordance with this Specification will be so noted in Special Provision 403 - Bituminous Box

402.01 Pavement Smoothness  The final pavement surface shall be evaluated for smoothness using a Class I or Class II profiler as defined by ASTM E950 (94). Smoothness measurements will be expressed in terms of the International Roughness Index (IRI) as defined by the World Bank, in units of inches/mile.
402.02 Lot Size  Lot size for smoothness will be 1000 lane-meters [3000 lane-feet]. A sublot will consist of 20 lane-meters [50 lane-feet]. Partial lots will be included in the previous lot if less than one-half the size of a normal lot. If equal to or greater than one-half the normal lot size, it will be tested as a separate lot.

402.03 Acceptance Testing  The Department will conduct Acceptance testing following completion of the surface course. Sections to be excluded from testing include the following:

- Bridge decks and joints (no smoothness measurements will be taken within 30 m [100 ft] of bridge joints)
- Acceleration and deceleration lanes
- Shoulders and ramps
- Side streets and roads
- Within 30 m [100 ft] of transverse joints at the beginning and end of the project
- Within 30 m [100 ft] of railroad crossings
- Urban areas with speed limits of 50 kph [30 mph] or lower

Each lot shall have 2 measurements made in each wheel path. The average of the 4 measurements will determine the smoothness for that lot.

The smoothness measurements will be statistically evaluated for pay factors as described in Subsection 106.7 - Quality Level Analysis, using the specification limits shown below.

<table>
<thead>
<tr>
<th>ACCEPTANCE LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
</tr>
<tr>
<td>I</td>
</tr>
<tr>
<td>II</td>
</tr>
<tr>
<td>III</td>
</tr>
</tbody>
</table>

Computation of Smoothness Pay Adjustment:

\[ PA = (PF-1.0)(Q)(P) \]

where:

- \( Q \) = Quantity of surface course in the Lot (excluding shoulders, side streets, bridge decks, ramps, acceleration and deceleration lanes)
- \( PF \) = smoothness pay factor for the Lot
- \( P \) = Contract unit price for surface pavement
- \( PA \) = pay adjustment

402.04 Unacceptable Work  In the event that any Lot is found to have a pay factor less than 0.80, the Contractor shall take whatever remedial action is required to correct the pavement surface in that Lot at no additional expense to the Department. Such remedial action may include but is not limited to removal and replacement of the unacceptable pavement. In the event remedial action is necessary, the Contractor shall submit a written plan to the Resident outlining the scope of the remedial work. The Resident must approve this plan before the remedial work can begin. Following remedial work, the Lot shall be retested, and will be subject to the specification limits listed above. The resulting pay factor, if within the acceptable range, will be used in the final pay adjustment. The Contractor shall pay the cost of retesting the pavement following corrective action.

Localized surface tolerance defects will be subject to the provisions outlined in Section 401.101 Surface Tolerances.
Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>402.10 Incentive/Disincentive - Pavement Smoothness</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>

SECTION 403 - HOT BITUMINOUS PAVEMENT

403.01 Description   This work shall consist of constructing one or more courses of bituminous pavement on an approved base in accordance with these specifications, and in reasonably close conformity with the lines, grades, thickness and typical cross sections shown on the plans or established.

The bituminous pavement shall be composed of a mixture of aggregate, filler if required, and bituminous material.

403.02 General      The materials and their use shall conform to the requirements of Section 401 - Hot Mix Asphalt Pavement.

403.03 Construction The construction requirements shall be as specified in Section 401 - Hot Mix Asphalt Pavement. In addition, hot bituminous pavement placed on bridges shall also conform to the following requirements.

   a. The mixture shall be composed of aggregate, PGAB and mineral filler but no recycled asphalt pavement and placed in courses as specified in the Special Provisions.

   b. The bottom course shall be placed with an approved rubber mounted bituminous paver of such type and operated in such a manner that the membrane waterproofing will not be damaged in any way.

   c. The top course shall not be placed until the bottom course has cooled sufficiently to provide stability.

   d. The Contractor will not be required to cut sample cores from the compacted pavement on the bridge deck.

   e. After the top course has been placed, the shoulder areas shall be sealed 1 meter [3 ft] wide with two applications of an emulsified bituminous sealer meeting the requirements of Section 702.12 - Emulsified Bituminous Sealing Compound. The first application shall be pre-mixed with fine, sharp sand, similar to mortar sand, as needed to fill all voids in the mix in the area being sealed. The second application may be applied without sand. The sealer shall be carried to the curb at the gutter line in sufficient quantity to leave a bead or fillet of material at the face of the curb. The area to be sealed shall be clean, dry and the surface shall be at ambient temperature.

   f. The furnishing and applying of the required quantity of sealer for the bridge shoulder areas shall be incidental to placing the hot bituminous pavement.

   g. The atmospheric temperature for all courses on bridge decks shall be 10°C [50°F] or higher.

   h. The use of an oscillating steel roller shall be required to compact all mixtures pavements placed on bridge decks.
403.04 Method of Measurement  Hot bituminous pavement will be measured as specified in Section 401.21-
Method of Measurement.

403.05 Basis of Payment  The accepted quantities of hot bituminous pavement will be paid for at the contract
unit price per Megagram [ton] for the bituminous mixtures, including bituminous material complete in place.

Method A, Method B, Method C and Method D shall be used for acceptance as specified in Section 401 - Hot
Mix Asphalt Pavements. (See Complementary Notes, Section 403 - Hot Bituminous Pavement, for Method
location).

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>403.102 Hot Mix Asphalt Pavement for Special Areas</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>403.206 Hot Mix Asphalt, 25 mm Nominal Maximum Size</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>403.207 Hot Mix Asphalt, 19.0 mm Nominal Maximum Size</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>403.2071 Hot Mix Asphalt, 19.0 mm Nominal Maximum Size</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>403.2072 Asphalt Rich Hot Mix Asphalt, 19.0 mm Nominal Maximum Size</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>(Asphalt Rich Base and Intermediate course)</td>
<td></td>
</tr>
<tr>
<td>403.208 Hot Mix Asphalt, 12.5 mm Nominal Maximum Size</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>403.2081 Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (PG 70-28)</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>403.209 Hot Mix Asphalt, 9.5 mm Nominal Maximum Size</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>(sidewalks, drives, islands &amp; incidentals)</td>
<td></td>
</tr>
<tr>
<td>403.210 Hot Mix Asphalt, 9.5 mm Nominal Maximum Size</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>403.2101 Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (PG 70-28)</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>403.2102 Asphalt Rich Hot Mix Asphalt, 9.5 mm Nominal Maximum Size</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>(Asphalt Rich Intermediate course)</td>
<td></td>
</tr>
<tr>
<td>403.211 Hot Mix Asphalt (shimming)</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>403.212 Hot Mix Asphalt, 4.75 mm Nominal Maximum Size</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>403.2131 Hot Mix Asphalt, 12.5 mm Nominal Maximum Size, (PG 70-28)</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>(Base and Intermediate Base course)</td>
<td></td>
</tr>
<tr>
<td>403.2132 Asphalt Rich Hot Mix Asphalt, 12.5 mm Nominal Maximum Size</td>
<td>MG [Ton]</td>
</tr>
<tr>
<td>(Base and Intermediate Base course)</td>
<td></td>
</tr>
</tbody>
</table>
The Standard Specifications, Revision of 2002 Section 700 - Materials, Subsection 703.09 HMA Mixture Composition has been revised as follows:

**703.09 HMA Mixture Composition** The coarse and fine aggregate shall meet the requirements of Section 703.07. The several aggregate fractions for mixtures shall be sized, graded, and combined in such proportions that the resulting composite blends will meet the grading requirements of the following tables or as otherwise specified.

### TABLE 1: COMPOSITION OF MIXTURES - CONTROL POINTS

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>TYPE 19 mm</th>
<th>TYPE 12.5 mm</th>
<th>TYPE 9.5 mm</th>
<th>TYPE 4.75 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PERCENT BY WEIGHT PASSING - COMBINED AGGREGATE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37.5 mm</td>
<td>100</td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>25 mm</td>
<td>90-100</td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>19 mm</td>
<td>-90</td>
<td>90-100</td>
<td>100</td>
<td>95-100</td>
</tr>
<tr>
<td>12.5 mm</td>
<td>-</td>
<td>-90</td>
<td>90-100</td>
<td>80-100</td>
</tr>
<tr>
<td>9.5 mm</td>
<td>-</td>
<td>-</td>
<td>-90</td>
<td>-</td>
</tr>
<tr>
<td>4.75 mm</td>
<td>-</td>
<td></td>
<td>-100</td>
<td>-</td>
</tr>
<tr>
<td>2.36 mm</td>
<td>23-49</td>
<td>28-58</td>
<td>32-67</td>
<td>40-80</td>
</tr>
<tr>
<td>1.18 mm</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>600 µm</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>300 µm</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>75 µm</td>
<td>2.0-7.0</td>
<td>2.0-7.0</td>
<td>2.0-7.0</td>
<td>2.0-7.0</td>
</tr>
</tbody>
</table>

### RESTRICTED ZONES

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>TYPE 19 mm [¼ in]</th>
<th>TYPE 12.5 mm [½ in]</th>
<th>*TYPE 9.5 mm [⅜ in]</th>
<th>TYPE 4.75 mm [#40]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PERCENT BY WEIGHT PASSING - COMBINED AGGREGATE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37.5 mm [1½ in]</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>25 mm [1 in]</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>19 mm [¾ in]</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>12.5 mm [½ in]</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9.5 mm [⅜ in]</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.75 mm [No. 4]</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.36 mm [No. 8]</td>
<td>34.6</td>
<td>39.1</td>
<td>47.2</td>
<td>-</td>
</tr>
<tr>
<td>1.18 mm [No. 16]</td>
<td>22.3-28.3</td>
<td>25.6-31.6</td>
<td>31.6-37.6</td>
<td>-</td>
</tr>
<tr>
<td>600 µm [No. 30]</td>
<td>16.7-20.7</td>
<td>19.1-23.1</td>
<td>23.5-27.5</td>
<td>-</td>
</tr>
<tr>
<td>300 µm [No. 50]</td>
<td>13.7</td>
<td>15.5</td>
<td>18.7</td>
<td>-</td>
</tr>
<tr>
<td>75 µm [No. 200]</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* The restricted zone is presented for information and definition of “Fine” 9.5mm mixes only.