



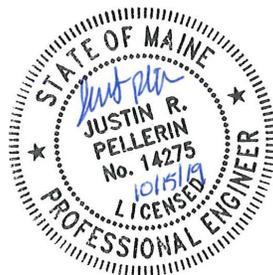
CITY OF PORTLAND, MAINE

DEPARTMENT OF PUBLIC WORKS

**MOTLEY STREET STORM DRAIN
AND SEWER REPLACEMENT PROJECT**

Bid # 20019

Dated: October 15, 2019



**CITY OF PORTLAND, MAINE
DEPARTMENT OF PUBLIC WORKS**

**BIDDING AND CONTRACT REQUIREMENTS
AND SPECIFICATIONS**

FOR

**Motley Street Storm Drain and Sewer Replacement Project
(Bid 20019)**

October 15, 2019

Prepared By:

**City of Portland
Public Works Department
212 Canco Road, Suite B,
Portland, Maine 04103**

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SECTION 00020 - INVITATION TO BID**City of Portland, Maine, Maine
Motley Street Storm Drain and Sewer Replacement Project
Bid 20019**

Sealed bids for construction of the Motley Street Storm Drain and Sewer Replacement Project (Bid 20019) will be received by the City of Portland, Maine Purchasing Manager at the Purchasing Office, Room 103 City Hall, 389 Congress Street, Portland Maine 04101 until **Thursday November 7, 2019 at 3:00 p.m.** local time and then at said office publicly opened and read aloud. Late, unsigned bids or bids submitted electronically shall not be accepted. Bids shall remain open to acceptance for ninety (60) days from their opening. Each bidder must submit a single sealed envelope, the outside of which must be clearly marked "Bid for Motley Street Storm Drain and Sewer Replacement (Bid 20019)" along with one (1) PDF copy on a thumb drive or DVD. Please also include a copy of your company's most recent W-9 form.

Location

The Motley Street Storm Drain and Sewer Replacement Project is located along Motley Street, which is a residential street off of Brighton Avenue, in Portland, Maine.

Outline of Work

The work includes the installation of sewer and storm drain pipe, under-drain, catch basin structures and sewer manhole structures, paving, earthwork, ledge removal, dewatering, pedestrian and vehicular traffic control and associated work as shown on contract drawings and documents.

The work includes, but is not limited to:

1. The installation of approximately 1,224 linear feet (lf) of new gravity storm drain and sanitary sewer pipe, underdrain pipe, installation of precast catch basins and manholes, sewer laterals, Portland Water District water services and associated construction.
2. Street Improvements including areas of full width pavement removal and repaving and the reconstruction of bituminous driveway aprons, loaming and seeding the City Right of way within the project zone and the reconstruction of two pedestrian ramps per federal ADA requirements.

Basis of Award

The basis of the award will be the lowest responsive bid for the project including the sum of the Bids for the City of Portland work, this total is listed as TOTAL BID on the project bid form.

The contractor shall be responsible for any and all work requirements including any specialized work requirements necessary for project construction which shall be considered incidental to the construction cost.

Other Information

The contractor shall make note of the schedule and sequence requirements presented in the contract documents. The project must be substantially completed by September 1, 2020 and the entire project ready for owner acceptance by June 1, 2021.

The Contract Documents may be examined at the City of Portland Engineering Office, Department of Public Works, 212 Canco Road, Portland, Maine, e-mail Justin Pellerin at jrp@portlandmaine.gov

Plans and proposal books are available electronically by contacting the City of Portland Purchasing Office by telephone at (207) 874-8654 or email JRL@portlandmaine.gov. Each prospective bidder will be required to obtain from the City each copy of the proposal form and plan set. Partial sets will not be issued.

Bids from vendors not registered with the Purchasing Office may be rejected; receipt of this document directly from the City of Portland indicates registration. Should a vendor receive this Invitation from a source other than the City, please contact 207-874-8654 to ensure that your firm is listed as a vendor for this bid.

CONTRACTOR shall procure and maintain occurrence-based Automobile Liability Insurance and Commercial General Liability Insurance coverage (including completed operations coverage for at least 12 months after completion of the Work) in amounts of not less than One Million Dollars (\$1,000,000.00) per occurrence for bodily injury, death and property damage, and occurrence based Pollution Liability Insurance coverage in amounts of not less than One Million Dollars (\$1,000,000.00) naming the CITY as an additional insured thereon. CONTRACTOR shall maintain Workers' Compensation Insurance coverage to the extent required by law. With respect to the Automobile, Commercial General, and Pollution Liability Insurance, the CONTRACTOR shall name the CITY as an additional insured for coverage only in those areas where government immunity has been expressly waived by 14 M.R.S. A. § 8104-A, as limited by § 8104-B, and § 8111. This provision shall not be deemed a waiver of any defenses, immunities or limitations of liability or damages available to the CITY under the Maine Tort Claims Act, other Maine statutory law, judicial precedent, common law, or any other defenses, immunities or limitations of liability available to the CITY. CONTRACTOR shall maintain certificates evidencing all such coverages, which certificates shall guarantee thirty (30) days' notice to the CITY of termination of insurance from the insurance provider or agent. CONTRACTOR shall also provide a copy of any endorsement naming the CITY as additional insured. A certificate that merely has a box checked under "Addl Insr," or the like, or that merely states the City of Portland is named as an Additional Insured, will not be acceptable. The Workers' Compensation insurance shall include an endorsement waiving all rights of subrogation against the City of Portland, its officers or employees. Upon CITY'S request, CONTRACTOR shall provide CITY with a complete copy of any of the above-referenced policies. CONTRACTOR shall be responsible for any and all deductibles and/or self-insured retentions.

All questions shall be directed in writing ONLY to the Purchasing Office at the above address and be received at least five business days prior to the bid opening date (FAX 207-874-8652, or E-mail JRL@portlandmaine.gov). Questions received after this time will not be addressed. Responses from the City that substantially alter this bid will be issued in the form of a written addendum to all bid holders registered in the Purchasing Office. Oral explanations or interpretations given before the award of the contract will not be binding

The City of Portland has conducted soil investigations at the project site. The soil investigation included borings. A copy of the boring logs is included in the Appendices of the specifications.

A bid must be accompanied by Bid security made payable to the City of Portland in an amount of 5% of Bidder's maximum bid price and in the form of a certified check or Bid bond issued by surety meeting the

requirements of the General Conditions. No bid may be withdrawn for at least 60 days after receipt of bids unless released by the Owner.

Within five days after the receipt of bids, the apparent low responsive bidder shall deliver to the Engineer and Owner for review and acceptance the listing of subcontractors, suppliers or entities for the work listed in Supplementary Condition SC-7.06.

The successful bidder must furnish within **10 calendar days** after the Notice of Award the required number of copies of the **signed Agreement, 100% Performance Bond, 100% Payment Bond, Insurance Policy** and begin execution of this contract within 10 calendar days following the Notice to Proceed. **The General Contractor shall be responsible for the full amount the 100% Performance Bond and the 100% Payment Bonds. Combining bonds of subcontractors is not acceptable.**

EQUAL EMPLOYMENT OPPORTUNITIES Any award recipient agrees to adhere to a policy of non-discrimination in all employment actions, practices, policies, procedures, phases, and conditions of employment. This shall include compliance with the Workforce Investment Act of 1998, as amended (WIA, 29 CFR part 37); the Nontraditional Employment for Women Act of 1991; title VI of the Civil Rights Act of 1964, as amended; section 504 of the Rehabilitation Act of 1973, as amended; the Age Discrimination Act of 1975, as amended; title IX of the Education Amendments of 1972, as amended; and with all applicable requirements imposed by or pursuant to regulations implementing those laws, including but not limited to 29 CFR part 37 and all other applicable laws, including the Maine Human Rights Act, ordinances and regulations regarding equal opportunity and equal treatment. Contractor specifically agrees that all employment-related decisions (including but not limited to hiring, discharge, transfers, promotions, discipline, training, job opportunities, and wage and salary levels) will be made without discrimination based on an individual's race or color, religion, age, sex (including pregnancy), sexual orientation, gender identity or expression, ancestry or national origin, physical or mental disability, veteran status, genetic information, previous assertion of a claim or right under Maine's Workers' Compensation Act, previous actions taken protected under Maine's Whistleblowers' Protection Act, or any other protected group status as defined by applicable law. Provisions in applicable laws providing for bona fide occupational qualifications, business necessity, or age limitations will be adhered to by the developer and its contractors where appropriate.

Pursuant to City procurement policy and ordinance, the City is unable to contract with businesses or individuals who are delinquent in their financial obligations to the City. These obligations may include but are not limited to real estate and personal property taxes and sewer user fees. Bidders who are delinquent in their financial obligations to the City must do one of the following: bring the obligation current, negotiate a payment plan with the City's Treasury office, or agree to an offset which shall be established by the contract which shall be issued to the successful bidder.

It is the custom of the City of Portland, Maine to pay its bills 30 days following equipment delivery and acceptance, and following the receipt of correct invoices for all items covered by the purchase order. If your organization prefers to receive payment via electronic transfer rather than by check, please see the web link below* and include that EFT form with your bid submission. In submitting bids under these specifications, bidders should take into account all discounts; both trade and time allowed in accordance with this payment policy and quote a net price. The City is exempt from the State's sales and use tax as well as all Federal excise taxes.

* <http://www.portlandmaine.gov/DocumentCenter/Home/View/817>

October 15, 2019

Matthew Fitzgerald
Purchasing Manager

**SECTION 00100 - INSTRUCTIONS TO BIDDERS
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ARTICLE 1 – DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Bidder* – The individual or entity who submits a Bid directly to the Owner.
 - B. *Issuing Office* – The office from which the Bidding Documents are to be issued.
 - C. *Successful Bidder* – The lowest responsible Bidder submitting a responsive Bid to whom Owner (on the basis of Owner’s evaluation as hereinafter provided) makes an award.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.
- 2.02 Complete sets of Bidding Documents shall 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.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.01 Bids from vendors not registered with the Purchasing Office may be rejected; receipt of this document directly from the City of Portland indicates registration. Should a vendor receive this Invitation from a source other than the City, please contact 207-874-8654 to ensure that your firm is listed as a vendor for this bid.
- 3.02 To demonstrate Bidder’s qualifications to perform the Work, after submitting its Bid and within 10 days of Owner’s request, Bidder shall submit (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:
- A. Evidence of Bidder’s authority to do business in the state where the Project is located.
 - B. Bidder’s state or other contractor license number, if applicable.
 - C. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, “Subcontractors, Suppliers, and Others.”
 - D. Other required information regarding qualifications
- 3.03 A Bidder’s failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.04 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder’s qualifications.
- 3.05 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder’s representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER’S SAFETY PROGRAM; OTHER WORK AT THE SITE

4.01 *Site and Other Areas*

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

4.02 *Existing Site Conditions*

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify:
 - a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
 - b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
 - c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
 - d. Technical Data contained in such reports and drawings.
2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
4. Geotechnical Baseline Report: The Bidding Documents do not contain a Geotechnical Baseline Report (GBR). The City has conducted borings in the project area, boring logs are provided in the appendices of the specifications. The borings describe certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations (“Baseline Conditions”).

The Baseline Conditions are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the Baseline Conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the borings, all other Contract Documents, Technical Data, other available information, and observable surface conditions. Not all potential subsurface conditions are baselined.

Nothing in the borings are intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.

- B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site are set forth in the Contract Documents

and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

- C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.
- B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.05 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 5 – BIDDER'S REPRESENTATIONS

5.01 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;

- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;
- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- H. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- I. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- J. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- K. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – PRE-BID CONFERENCE

6.01 There will be no pre-bid meeting for this project.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Jim Loble, jrl@portlandmaine.gov of the City's purchasing office in writing via mail or email. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than 5

business days prior to the date for opening of Bids will not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

- 7.02 All questions shall be directed in writing ONLY to the Purchasing Office at the above address and be received at least five business days prior to the bid opening date (FAX 207-874-8652, or E-mail jrl@portlandmaine.gov). Questions received after this time will not be addressed. Responses from the City that substantially alter this bid will be issued in the form of a written addendum to all bid holders registered in the Purchasing Office. Oral explanations or interpretations given before the award of the contract will not be binding.
- 7.03 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5% percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid Bond on the form attached, issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions. Cash, checks, and certified checks will not be allowed or accepted. Failure to provide a Bid Bond by a surety will be grounds for rejecting the bid. The Bidder also acknowledges that the Owner's determination to reject the bid shall be final and without appeal to any other authority including courts of competent jurisdiction.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 10 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

- 9.01 The dates by which the Work is to be substantially completed and ready for final payment are set forth in the Agreement.
- 9.02 The Work will be substantially completed on or before **September 1, 2020** and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **June 1, 2021**.

ARTICLE 10 – LIQUIDATED DAMAGES

- 10.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 11 – SUBSTITUTE AND “OR-EQUAL” ITEMS

- 11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible

substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract. The procedure for submission of any such application by Contractor and consideration by Engineer is set forth in the General Conditions and may be supplemented in the General Requirements.

- 11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 12.02 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.
- 12.03 The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for the project.

If requested by Owner, 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, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, 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.

- 12.04 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, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 13 – PREPARATION OF BID

- 13.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
- B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”
- 13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of

incorporation shall be shown. The corporate seal shall be affixed and attested by the secretary or an assistant secretary.

- 13.03 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 13.04 A Bid by an individual shall show the Bidder's name and official address.
- 13.05 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.
- 13.06 A Bid by a joint venture shall be executed by an authorized representative of each joint venture in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 13.07 All names shall be printed in ink below the signatures.
- 13.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.10 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 – BASIS OF BID

14.01 *Unit Price*

- A. Bidders shall submit a Bid on a lump sum basis for each lump sum item of work and on a unit price basis for each unit price item of Work listed in the Bid Form.
- B. The "Bid Price" for each Bid item will be the product of the "Estimated Quantity" for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between 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.

14.02 *Allowances*

- A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.
- 14.03 The Contractor will note in the Supplemental Specifications that the value of the Mobilization bid item is limited.

ARTICLE 15 – SUBMITTAL OF BID

- 15.01 With each copy of the Bidding Documents, a Bidder is furnished one copy of the Bid Form, and the Bid Bond Form. The Bid Form is to be completed and submitted with the following:

- A. The Bid Form in its Entirety.
 - B. Required Bid Security
 - C. Experience and Qualification Statement (Section 00405) with supporting data, including verification of bonding capacity.
 - D. Other documents required to be submitted under the terms of Article 7 of the Bid Form.
- 15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED – Motley Street Storm Drain and Sewer Replacement Project (Bid 20019)." A mailed Bid shall be addressed as indicated on the bid form.
- 15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03 If within 24 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, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 – OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud 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 Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities and curable defects not involving price,

time, or changes in the Work. Owner may also 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.

19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.

19.03 Evaluation of Bids

- A. In evaluating Bids, Owner will consider 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 or prior to the Notice of Award.
- B. For the determination of the apparent low Bidder, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.

The basis of the award will be the lowest responsive bid for the entire project based on:

1. The sum listed as TOTAL BID on the bid form.

19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents. The Owner reserve the right to disqualify the Bidder if during the review they determine that any of the additional investigations are not satisfactory. The Bidder also acknowledges that the Owner's determination is final and without appeal to any other authority including courts of competent jurisdiction.

ARTICLE 20 – BONDS AND INSURANCE

20.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

20.02 The successful bidder must submit Performance and Payment Bonds to the Owner prior to contract award. Detailed information can be found in the General Conditions.

20.03 The successful bidder must submit Liability and Property Insurance certificates to the Owner prior to contract award. Detailed information can be found in the General Conditions and the Supplementary Conditions.

ARTICLE 21 – SIGNING OF AGREEMENT

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 22 – SALES AND USE TAXES

22.01 Owner is exempt from Maine state sales and use taxes on materials and equipment to be incorporated in the Work. (Exemption No. E80493). Said taxes shall not be included in the Bid. Detailed information can be found in the General Conditions

ARTICLE 23 – CONTRACTS TO BE ASSIGNED

NOT USED

ARTICLE 24 – RETAINAGE

24.01 Provisions concerning retainage are set forth in the Agreement.

ARTICLE 25 – PARTNERING

NOT USED

ARTICLE 26 – DELETION OF ITEMS

NOT USED

ARTICLE 27 – SPECIAL LEGAL REQUIREMENTS

NOT USED

SECTION 00310 BID FORM

Project Name

Bid 20019

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

PROJECT IDENTIFICATION: Motley Street Storm Drain and Sewer Replacement Project

Bid 20019

THIS BID IS SUBMITTED TO: City of Portland, Maine

Purchasing Office

389 Congress Street, Room 103

Portland, ME 04101

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

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum, Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

B. Bidder acknowledges that his Bid will be rejected unless the Issuing Office has a record that the Bidder has purchased as least one sect of paper Bidding Documents from the Issuing Office

C. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

D. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

E. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at

the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- F. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- G. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- H. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- K. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.
- L. Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- M. Bidder understands that the Owner reserves the right to reject any or all bids.
- N. Bidder understands that, if the contract is to be awarded, it will be awarded to the lowest responsive, responsible bidder whose evaluation by Owner indicates to Owner that the award will be in the best interests of the Project.
- O. The bid security attached in the amount of five percent of the Total Bid is to become the property of the Owner in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the e execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Motley Street Storm Drain and Sewer Replacement Project Bid # 20019						
City of Portland, Maine						
Project Bid Forms			Unit Price		Total Price	
			Dollars	Cents	Dollars	Cents
202.20	SY	Removing Bituminous Concrete Pavement				
		@				
	1531	Per Square Yard				
203.20	CY	Common Excavation				
		@				
	123	Per Cubic Yard				
203.25	CY	Granular Borrow				
		@				
	125	Per Cubic Yard				
203.28	VF	Test Pit				
		@				
	20	Vertical Foot				
203.35	CY	Crushed Stone (703.11 Type "A")(Overdepth)				
		@				
	50	Per Cubic Yard				
206.061	CY	Earth Excavation, below grade (Overdepth)				
		@				
	50	Per Cubic Yard				
206.070	CY	Structural Rock Excavation				
		@				
	270	Per Cubic Yard				
304.09	CY	Aggregate Base Course-Gravel, Type "B"				
		@				
	125	Per Cubic Yard				
304.10	CY	Aggregate Subbase Course- Gravel, Type "D"				
		@				
	272	Per Cubic Yard				
403.207	TON	Hot Mix Asphalt-19.00 mm				
		@				
	184	Per Ton				

403.208	TON	Hot Mix Asphalt-12.5 mm		
	6	@ Per Ton		
403.210	TON	Hot Mix Asphalt-9.5 mm		
	127	@ Per Ton		
603.131	LF	4 and 6" Diameter Sewer Service Lines		
	235	@ Per Linear Foot		
603.132	LF	8 Inch Diameter SDR35 PVC Sewer Pipe		
	423	@ Per Linear Foot		
603.159	LF	12 Inch Diameter Storm Drain Pipe		
	27	@ Per Linear Foot		
603.179	LF	18 Inch Diameter Storm Drain Pipe		
	30	@ Per Linear Foot		
604.13	EA	Install 4' Diameter Catch Basin		
	4	@ Per Each		
604.15	EA	Install 4' Diameter manhole		
	2	@ Per Each		
604.161	EA	Modify Structure		
	3	@ Per Each		
604.18	EA	Install Type F Basin		
	1	@ Per Each		
605.08	LF	6" Diameter PVC Underdrain		
	389	@ Per Linear Foot		
605.10	LF	12" Diameter PVC Underdrain		
	193	@ Per Linear Foot		

605.11	LF	15"Diameter PVC Underdrain		
	200	@ Per Linear Foot		
608.08	SY	Reinforced Concrete Sidewalk		
	18	@ Per Square Yard		
608.12	SY	Hot Bituminous Concrete Driveway		
	128	@ Per Square Yard		
608.27	SF	Curb Ramp Detecable Warning Field		
	20	@ Per Square Foot		
609.10	LF	Install New 5 Inch Vertical Curb, Type 1 - Straight		
	15	@ Per Linear Foot		
609.12	LF	Install New 5 Inch Vertical Curb, Type 1 - Circular		
	15	@ Per Linear Foot		
609.13	EA	4' Curb Tip Down		
	8	@ Per Each		
609.14	EA	7' Curb Tip Down		
	2	@ Per Each		
609.38	LF	Remove and Reset Curb		
	15	@ Per Linear Foot		
614.14	EA	Mason Plug		
	5	@ Per Each		
614.16	CY	Flowable Concrete Fill		
	10	@ Per Cubic Yard		
615.071	1	Loam and Seed		
	LS	@ Lump Sum		

627.77	LS	Project Pavement Marking		
	1	@		
629.05	HR	Hand Labor, Straight Time		
	10	@		
629.06	HR	Mason		
	10	@		
631.105	HR	Air Tool And Compressor, Including Operator		
	10	@		
631.12	HR	All Purpose Excavator, Including Operator		
	10	@		
631.13	HR	Bulldozer, Including Operator		
	10	@		
631.172	HR	Truck, Small, Including Operator		
	10	@		
631.22	HR	Front End Loader, Including Operator		
	10	@		
631.36	HR	Foreman		
	10	@		
632.08	EA	4 or 6" x 8" Wye/Tee Connection		
	9	@		
652.39	LS	Installation And Maintenance Of Traffic Control Devices		
	1	@		

654.08	EA	Trench Density Tests		
		@		
	20	Each		
656.75	1	Temporary Soil Erosion and Water Pollution Control		
		@		
	LS	Lump Sum		
659.10	LS	Mobilization		
		@		
	1	Lump Sum		
902.11	EA	Replace Valve Box Top Section and Cover		
		@		
	2	EA		
902.12	EA	3/4 inch Copper Water Service-Short Side		
		@		
	4	EA		
902.13	EA	3/4 Inch Copper Water Service-Long Side		
		@		
	5	EA		
TOTAL BID- (BASIS OF AWARD)				

)
TOTAL BID :	
(use words)	(\$ (Use Figures)

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work on time.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
 - A. This Bid Form in its entirety;
 - B. Required Bid security;
 - C. Required Experience and Qualifications Statement (Section 00405) with supporting data including a letter of bonding capacity;
 - D. Contractor’s W-9 Form
 - E. Electronic copy of Bid Submittal in .pdf format (USB Drive or CD/DVD)

ARTICLE 8 – DEFINED TERMS

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

ARTICLE 9 – BID SUBMITTAL

**PROPOSAL FORM
MOTLEY STREET STORM DRAIN
AND SEWER REPLACEMENT PROJECT
BID # 20019**

**** THIS SHEET MUST BE INCLUDED IN YOUR PROPOSAL ****

The undersigned hereby declares that he/she or they are the only person(s), firm or corporation interested in this proposal as principal, that it is made without any connection with any other person(s), firm or corporation submitting a proposal for the same, and that no person acting for or employed by the City of Portland is directly or indirectly interested in this proposal or in any anticipated profits which may be derived there from.

The undersigned hereby declares that they have read and understand all conditions as outlined in this Request for Proposals, and that the proposal is made in accordance with the same.

The bidder acknowledges the receipt of Addenda numbered: _____

COMPANY NAME: _____

AUTHORIZED SIGNATURE: _____

DATE: _____

PRINT NAME & TITLE: _____

ADDRESS: _____

E-MAIL ADDRESS: _____

PHONE NUMBER: _____ FAX NUMBER: _____

TYPE OF ORGANIZATION - PARTNERSHIP, CORPORATION, INDIVIDUAL, OTHER:

STATE OF INCORPORATION, IF APPLICABLE: _____

FEDERAL TAX IDENTIFICATION NUMBER (Required): _____

NOTE: Proposals must bear the handwritten signature of a duly authorized member or employee of the organization submitting a proposal.

SECTION 00410
BID BOND

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

BIDDER (*Name and Address*):

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

OWNER (*Name and Address*):

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

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

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

BIDDER _____ (Seal) **SURETY** _____ (Seal)

Bidder's Name and Corporate Seal Surety's Name and Corporate Seal

By: _____ By: _____
Signature Signature (Attach Power of Attorney)

Print Name Print Name

Title Title

Attest: _____ Attest: _____
Signature Signature

Title Title

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding

Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

3.2 All Bids are rejected by Owner, or

3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

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

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the 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 the 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.

END OF SECTION

SECTION 00510 - AGREEMENT

THIS AGREEMENT is by and between _____ City of Portland, Maine _____ (“Owner”) and _____ (“Contractor”).

Owner and Contractor hereby 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:*

A. Motley Street Storm Drain and Sewer Replacement Project:

1. The installation of approximately 1,224 linear feet (lf) of new gravity storm drain and sanitary sewer pipe, installation of precast catch basins and manholes, sewer laterals and associated construction.
2. Street improvements including the removal of existing bituminous pavement, and installation of new pavement, curbing and pedestrian ramps per City standards.

B. Other work as specified on the contract drawings and required to complete the project in its entirety and ready for owner’s acceptance.

ARTICLE 2 – THE PROJECT

2.01 *The Project, of which the Work under the Contract Documents is a part, is generally described as follows:*

**City of Portland, Maine
Motley Street Storm Drain and Sewer Replacement**

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by the water resources division of the City of Portland Public Works Department.

3.02 Owner will furnish an “Owner’s Site Representative” to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The Owner’s Site Representative is not Engineer’s consultant, agent, or employee. The authority and responsibilities of Owner’s Site Representative shall be those of the Resident Project Representative identified in the Supplemental Conditions.]

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 Contract.

4.02 Contract Times: Dates

- A. The Work will be substantially completed on or before **September 1, 2020** and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **June 1, 2021**.

4.03 Liquidated Damages

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. 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):
1. Substantial Completion: Contractor shall pay Owner **the value set forth below for each day** that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner **the value set forth below for each day** that expires after such time until the Work is completed and ready for final payment.
 3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.
 4. The contractor shall also be subject to liquated damages based upon failure to follow the Supplemental Specifications or Special Provision - Section 656 and/or the Contractor’s own Soil Erosion and Water Pollution Control Plan (SEWPCP).
 5. The per diem rates for Liquidated Damages shall be based on the contract value as set forth below:

Original Contract Amount

From More Than	To and Including	Per Diem amount of Liquidated Damages
\$ 0	\$ 100,000	\$ 100
\$ 100,000	\$ 300,000	\$ 175
\$ 300,000	\$ 500,000	\$ 250
\$ 500,000	\$ 1,000,000	\$ 325
\$ 1,000,000	\$ 2,000,000	\$ 500
\$ 2,000,000	\$ 4,000,000	\$ 750
\$ 4,000,000	\$ and more	\$ 1,000

ARTICLE 5 – CONTRACT PRICE

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:
- A. For all Work, at the prices stated in Contractor’s Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES**6.01 Submittal and Processing of Payments**

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 Progress Payments; Retainage

- A. Prior to substantial completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages in accordance with general conditions:

- i. 95 percent of work completed (with balance being retainage); and

- B. Upon substantial completion, Owner shall pay an amount sufficient to increase total payments to the Contractor to 98 percent of the work completed, less such amounts as Engineer shall determine in accordance with general conditions. The final two percent of the value of the Work shall be retained for a period of one year from the date of substantial completion.

6.03 Final Payment

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06 of the General Conditions, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages.

- B. Prior to final payment the following shall be completed:

1. Contractor and the Engineer shall jointly inspect the project to assure completion of all items including Punch List.
2. Contractor shall submit Record Drawings indicating all changes and additions made during construction.
3. Waivers of Lien shall be provided to the City for the project.
4. Contractor shall submit the Warranty and Maintenance Bonds in the amount specified in the contract.
5. Contractor shall submit all Service Lateral Records.
6. Final Clean-up shall be completed. No payment will be made for the final clean-up and the cost thereof shall be considered incidental to the appropriate item.
7. Final Acceptance Notification will be prepared by the City and forwarded to the Contractor for the project along with Final Payment.
8. Final Contractor Lien Waiver needs to be signed and forwarded to the City.

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall not bear interest.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
- B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor’s safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has 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.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor’s entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 1. This Agreement (pages _ to _, inclusive).

2. Performance bond.
 3. Payment bond.
 4. General Conditions.
 5. Supplementary Conditions.
 6. Specifications included the Project Manual.
 7. Drawings (not attached but incorporated by reference) consisting of ___ sheets with each sheet bearing the following general title: Motley Street Storm Drain and Sewer Replacement Project.
 8. Addenda (numbers __ to __ inclusive).
 9. Exhibits to this Agreement (enumerated as follows):
 - i. Contractor's Bid (pages 1 to ___ inclusive).
 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - i. Notice to Proceed.
 - ii. Work Change Directives.
 - iii. Change Orders.
 - iv. Field Orders.
- 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 the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

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

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

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.

10.05 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 Other Provisions

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor in the Supplementary Conditions.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

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

OWNER:

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____
(where applicable)



SECTION 00610 - PERFORMANCE BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 16

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

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal *(seal)*

Surety's Name and Corporate Seal *(seal)*

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

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

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

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

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

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

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a

qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

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

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

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

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

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction 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 the Owner or its heirs, executors, administrators, successors, and assigns.

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

11. 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 a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the 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 periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

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

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims

for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:



SECTION 00620 - PAYMENT BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form None See Paragraph 18

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

Contractor's Name and Corporate Seal *(seal)*

Surety's Name and Corporate Seal *(seal)*

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. **Definitions**
 - 16.1 **Claim:** A written statement by the Claimant including at a minimum:
 1. The name of the Claimant;
 2. The name of the person for whom the labor was done, or materials or equipment furnished;
 3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 4. A brief description of the labor, materials, or equipment furnished;
 5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 7. The total amount of previous payments received by the Claimant; and
 8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
 - 16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the 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.
 - 16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
 - 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
18. Modifications to this Bond are as follows:

EJCDC® C-615, Payment Bond

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



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National Society of Professional Engineers
1420 King Street, Alexandria, VA 22314-2794
(703) 684-2882
www.nspe.org

American Council of Engineering Companies
1015 15th Street N.W., Washington, DC 20005
(202) 347-7474
www.acec.org

American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400
(800) 548-2723
www.asce.org

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The 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. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.
 11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive

Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *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.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *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.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *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.
40. *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.

41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *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 but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated 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 information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day:*

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 15.03 or 15.04).

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. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

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

ARTICLE 2 – PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

- A. *Bonds:* 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 Contractor’s Insurance:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance:* After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 Copies of Documents

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

2.03 Before Starting Construction

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 Preconstruction Conference; Designation of Authorized Representatives

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

2.05 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 2.03.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 therefor.
 - 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 - 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 Electronic Transmittals

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, 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.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 Reference Standards

- A. Standards Specifications, Codes, Laws and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, 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 part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 Reporting and Resolving Discrepancies

- A. *Reporting Discrepancies:*
 - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and

dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

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

B. *Resolving Discrepancies:*

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

3.04 Requirements of the Contract Documents

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 Reuse of Documents

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

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 Commencement of Contract Times; Notice to Proceed

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

4.02 Starting the Work

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

4.03 Reference Points

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

4.04 Progress Schedule

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

4.05 Delays in Contractor's Progress

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. 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.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. 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. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. abnormal weather conditions;
 - 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 - 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

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

5.01 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.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's

interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

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

5.02 Use of Site and Other Areas

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

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris 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 and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

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

5.03 Subsurface and Physical Conditions

- A. *Reports and Drawings:* The Supplementary Conditions identify:
1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; 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.

5.04 Differing Subsurface or Physical Conditions

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site 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 5.03 is materially inaccurate; or
 2. is of such a nature as to require a change in the Drawings or Specifications; 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 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition

in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
 2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 Underground Facilities

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent 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 do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; 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 information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. 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; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 Hazardous Environmental Conditions at Site

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental

Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. 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 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then 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 bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 Insurance—General Provisions

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 Contractor's Insurance

- A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
 - 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
 - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 - 2. claims for damages insured by reasonably available personal injury liability coverage.
 - 3. 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.
- C. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
 - 1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against 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. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, 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 (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.

3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that 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.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 Owner's Liability Insurance

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, 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.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 Property Insurance

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable 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 Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated

into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
 5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then

the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 Waiver of Rights

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, 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 insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. 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 or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 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 occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.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, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 Receipt and Application of Property Insurance Proceeds

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds,

subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 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.
- 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.

7.02 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, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 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, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work 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.

7.04 "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 Contract Price has been based

upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.

1. If Engineer in its sole discretion determines that 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, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, 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
 - 4) it is not objectionable to Owner.
 - 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.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 Substitutes

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an

acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 Concerning Subcontractors, Suppliers, and Others

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be 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.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.

- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. 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 create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

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

7.08 Permits

- A. Unless otherwise provided in the Contract Documents, 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 the submission of Contractor's Bid (or when

Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 Taxes

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

7.10 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 or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 Record Documents

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

7.12 Safety and Protection

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- 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 Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
 - C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
 - D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
 - E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.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 at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
 - F. Contractor's duties and responsibilities for safety and protection 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 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
 - G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 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.

7.14 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.

7.15 Emergencies

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent 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.

7.16 Shop Drawings, Samples, and Other Submittals

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
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 of that submittal, and that Contractor approves the 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 set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- 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 7.16.D.

2. *Samples:*

- a. Contractor shall submit the number of Samples required in the Specifications.
- b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

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

C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.

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 or to safety precautions or programs incident thereto.
3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
4. Engineer's review and approval of a Shop Drawing or Sample 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 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

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.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 Contractor's General Warranty and Guarantee

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on 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;
 - 6. the issuance of a notice of acceptability by Engineer;
 - 7. any inspection, test, or approval by others; or
 - 8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from 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 officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A 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 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, 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.

7.19 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 Laws and Regulations.
- 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, 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, 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 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 Other Work

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of

materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, 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.

8.02 Coordination

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

8.03 Legal Relationships

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.

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

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 Communications to Contractor

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

9.02 Replacement of Engineer

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

9.03 Furnish Data

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

9.04 Pay When Due

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

9.05 Lands and Easements; Reports, Tests, and Drawings

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

9.06 Insurance

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

9.07 Change Orders

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

9.08 Inspections, Tests, and Approvals

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

9.09 Limitations on Owner's Responsibilities

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

9.10 Undisclosed Hazardous Environmental Condition

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

9.11 Evidence of Financial Arrangements

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

9.12 Safety Programs

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

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION**10.01 Owner's Representative**

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

10.02 Visits to Site

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 Project Representative

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. 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.

10.04 Rejecting Defective Work

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 Shop Drawings, Change Orders and Payments

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. 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, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 Determinations for Unit Price Work

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

10.07 Decisions on Requirements of Contract Documents and Acceptability of Work

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

10.08 Limitations on Engineer's Authority and Responsibilities

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, 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 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 Compliance with Safety Program

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

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 Amending and Supplementing Contract Documents

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

- 1. *Change Orders:*

- a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
- b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.

- 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

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

11.02 Owner-Authorized Changes in the Work

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by

Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 Unauthorized Changes in the Work

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

11.04 Change of Contract Price

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee*: When applicable, 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 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.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 Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee

plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

- d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
- e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost 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 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 Change of Contract Times

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 Change Proposals

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
 - 1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 - 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
 - 3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

- B. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. 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;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 Notification to Surety

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

ARTICLE 12 – CLAIMS

12.01 Claims

- A. *Claims Process*: The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of

Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval:* If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim:* If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results:* If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 Cost of the Work

- A. *Purposes for Determination of Cost of the Work:* The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 - 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. 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, and 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 13.01.
 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, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), 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 communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work 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, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
 - 2. 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 Paragraph 13.01.B.
- D. *Contractor's Fee:* When the Work as a whole 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, Change Proposal, Claim, set-off, or other 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 11.04.C.
- E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, 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.

13.02 Allowances

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

- B. *Cash Allowances*: Contractor agrees that:
1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: 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.

13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price 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;
 2. there is no corresponding adjustment with respect to any other item of Work; and
 3. Contractor believes that it 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 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 Access to Work

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and

safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 Tests, Inspections, and Approvals

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 Defective Work

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

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

14.04 Acceptance of Defective Work

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

14.05 Uncovering Work

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, 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, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 Owner May Stop the Work

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work 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.

14.07 Owner May Correct Defective Work

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

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. 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, a warehouse bond, 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.

C. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, 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 money 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 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.
- D. *Payment Becomes Due:*
1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.
- E. *Reductions in Payment by Owner:*
1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;

- g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
 3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 Contractor's Warranty of Title

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

15.03 Substantial Completion

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 Partial Use or Occupancy

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 Final Inspection

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

15.06 Final Payment

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of 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 have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. 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 15.07. 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. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated

damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 Waiver of Claims

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 Correction Period

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the 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 Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to 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. 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 repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- 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, 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 are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION**16.01 Owner May Suspend Work**

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

16.02 Owner May Terminate for Cause

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or

remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 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; and
 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 Contractor May Stop Work or Terminate

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 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 are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 Methods and Procedures

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.

- B. *Final Resolution of Disputes*: For any dispute subject to resolution under this Article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 2. agree with the other party to submit the dispute to another dispute resolution process; or
 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 Giving Notice

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 Computation of Times

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

18.03 Cumulative Remedies

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

18.04 Limitation of Damages

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

18.05 No Waiver

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

18.06 Survival of Obligations

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

18.07 Controlling Law

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

18.08 Headings

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

SECTION 00800 - SUPPLEMENTARY CONDITIONS

Supplementary Conditions

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract Funding Agency Edition, EJCDC C-700 (2013 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

<u>Section No.</u>	<u>Section Title</u>	<u>Page No.</u>
SC-1 to SC-18	Amendments to General Conditions	00800-1

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.

SC-1.01.A.3. APPLICATION FOR PAYMENT

SC 1.01.A.3 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.8. CHANGE ORDER

SC 1.01.A.8 Add the following language to the end of Paragraph 1.01.A.8:

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

SC-1.01.A.28 OWNER

SC 1.01.A.28 Add the following to the end of paragraph 1.01.A.28 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.49 NON-RESIDENT CONTRACTOR

SC 1.01.A.49 Add a new paragraph immediately after paragraph 1.01.A.48 of the General Conditions, which is to read as follows:

49. 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-1.01.A.50 UNCONTROLLABLE EVENTS

SC 1.01.A.50 Add a new paragraph immediately after paragraph 1.01.A.49 of the General Conditions, which is to read as follows:

49. Uncontrollable Events- Events or acts that were unforeseeable at the time of Bid submission and that were beyond the Contractor's control in that the risk of the event or act could not have been prevented or managed by the Contractor with proper planning, coordination, Subcontractor management, insurance, bonding, maintenance, erosion control, traffic control, security precautions, Workers or

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Equipment. Uncontrollable Events are of two types: (A) severe weather events that meet the requirements of the first sentence of this definition and/or (B) non-weather events that meet the requirements of the first sentence of this definition which might include acts by foreign enemy, quarantine restrictions, strikes not involving the Contractor, action or inaction by governmental authorities, action or inaction by Utility Companies or other third parties (not Subcontractors) working on Project related Work within the Project Limits, and freight embargoes. Uncontrollable Events specifically do not include: fires (unless caused by a weather event described in this definition above), acts by other third parties including vandals and members of the traveling public, non-performance of Subcontractors (except in cases of unforeseeable, permanent, and complete cessation of all operations by the Subcontractor for reasons unrelated to the Contractor), and difficult, but foreseeable weather for the location and time of the Work including but not limited to cold, snow, and ice in the winter, flooding caused by snow melt and rain in the spring, rain in the fall, and thunderstorms in the summer.

SC-2.01 DELIVERY OF BONDS AND EVIDENCE OF INSURANCE

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

- D. *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-5.01 AVAILABILITY OF LANDS

SC 5.01.B Delete Paragraph 5.01.B in its entirety and replace with the following:

- B. . Upon reasonable written request, Owner shall furnish Contractor with reasonable evidence of record legal title and legal description of the lands upon which the Construction is to be performed and Owner's interest therein.

SC-5.03 SUBSURFACE AND PHYSICAL CONDITIONS

Add the following new paragraph(s) immediately after paragraph 5.03.B:

- 5.03.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

5.03.D. Copies of reports and drawings itemized in SC-5.03.C and SC-5.03.D that are not included with Bidding Documents may be examined at the City of Portland Engineering Office, Department of Public Works, 212 Canco Road, Portland, Maine during regular business hours. These reports and drawings are not part of the Contract Documents. Contractor is not entitled to rely upon other information and data utilized by Engineer and Engineer's Consultants in the preparation of Drawings and Specifications.

SC-5.05 DIFFERING SUBSURFACE OR PHYSICAL CONDITIONS

SC 5.05.E.4 Add the following paragraph immediately after paragraph 5.05.E.3

4. Contractor shall not be entitled to any adjustment to the Contract Price for work required to repair damage to or to relocate any unmarked or incorrectly marked underground facility when such a facility is owned by others.

SC-5.06 HAZARDOUS ENVIRONMENTAL CONDITIONS AT THE SITE

SC 5.06.I Delete paragraph 5.06.I in its entirety

SC-6.01 BONDS AND INSURANCE

SC 6.01.G, H Add the following new paragraph(s) immediately after Paragraph 6.01.F.

- G. 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".
- H. The Bonds shall remain in effect for one year after final acceptance of the Work, and protect the Owner for at least one year of warranty of the Work hereunder, and also shall insure settlement of claims for the payment of all bills for labor, materials and equipment.

SC-6.02 INSURANCE GENERAL PROVISIONS

SC 6.02.D Delete paragraph 6.02.D in its entirety

SC 6.02.K Add the following new paragraphs immediately after Paragraph 602.J:

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

SC-6.03 CONTRACTORS INSURANCE

SC 603.A Add the following paragraph immediately before paragraph 6.03.A:

Prior to execution of the Contract, Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims, including, without limitation, those 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

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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

SC 603.A.5 Add the following paragraph immediately after paragraph 6.03.A.4.:

5. Workers' Compensation Insurance: With respect to all the operations the Contractor performs and all those performed for him by subcontractors, the Contractor or the subcontractor shall carry Workers' Compensation Insurance or shall qualify as a self-insurer with the State of Maine Industrial Accident Commission, all in accordance with the requirements of the laws of the State of Maine. The Workers' Compensation insurance shall include an endorsement waiving all rights of subrogation against the City of Portland, its officers or employees.

SC 603.C.9 Add the following paragraph immediately after paragraph 6.03.C.8.:

9. Contractor's occurrence-based commercial general liability insurance (including completed operations coverage for at least 36 months after completion of the Work) shall be in the amount of not less than One Million Dollars (\$1,000,000.00) per occurrence for bodily injury, death and property damage.

SC 603.D Add the following sentence at the end of paragraph 6.03.D.:

Contractor's occurrence-based automobile liability insurance shall be in an amount not less than One Million Dollars (\$1,000,000.00) per occurrence for bodily injury, death and property damage.

SC 603.F Add the following sentence at the end of paragraph 6.03.F.:

Contractor's pollution liability insurance shall be in an amount not less than One Million Dollars (\$1,000,000.00).

SC 603.G Add the following sentences at the end of paragraph 6.03.G.:

Contractor shall provide a copy of any endorsement naming the Owner as additional insured. A certificate that merely has a box checked under "Addl Insr," or the like, or that merely states the City of Portland is named as an Additional Insured, will not be acceptable.

SC 603.I.6-8 Add the following paragraphs immediately after paragraph 6.03.I.5.:

6. Contractor shall provide a copy of any endorsement naming the Owner as additional insured. A certificate that merely has a box checked under "Addl Insr," or the like, or that merely states the City of Portland is named as an Additional Insured, will not be acceptable.
7. When explosives are to be used in the prosecution of the work, insurance provided by the Contractor shall also contain provisions for protection against damage claims due to such use of explosives.
8. Each insurance policy shall state that the insurance company shall agree to investigate and defend the insured against all claims for damages, even if groundless.

SC 6.03.K Add the following new paragraph immediately after Paragraph 6.03.J:

- K. Contractor shall be responsible for any and all deductibles and/or self-insured retentions, which shall not to exceed \$10,000 without prior written approval of the Owner's Corporation Counsel. Minimum limits may be satisfied through the use of primary and excess/umbrella policies,

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provided that the excess/umbrella policies will not be more restrictive than the primary policies. All policies purchased by Contractor shall be primary. If the Contractor maintains insurance in excess of the amounts required per the Contract and/or the Supplemental Conditions, the greater amount will hereby be required.

SC-6.05 PROPERTY INSURANCE

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

Owner will not purchase or maintain property insurance upon the Work at the Site. The Owner does not require the Contractor to carry Builders Risk Insurance, Installation Floaters or Difference in Conditions insurance policies. However, the Contractor is advised of its risks for damage to the Work as provided in Paragraph 7.13 Safety and Protection. The Contractor is responsible for managing and insuring these risks as it deems appropriate at his sole risk and cost.

SC 6.05.B. Strike the words "10 days" in paragraph 6.05.B and replaced with "30 days".

SC-606 WAIVER OF RIGHTS

SC-606.A. Delete the last sentence in paragraph 606.A. and replace with the following:

All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, 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 insureds thereunder, or against any Project Design Professional or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Design-Builder waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Construction, provided that the insurers for such policies actually pay the waiving party or parties such losses and damages; and, in addition, waive all such rights against the Project Design Professionals, their consultants, all Construction Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused, provided that the insurers for such policies actually pay the waiving party or parties such losses and damages. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance otherwise payable under any policy so issued.

SC-606.B. Delete paragraph 606.B in its entirety.

SC-7.01 SUPERVISION AND SUPERINTENDENCE

SC 7.01.B Delete paragraph 7.01.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

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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, in the amount of \$750 per day.

SC-7.02.B LABOR; WORKING HOURS

SC 7.02.B Add the following new subparagraph(s) immediately after paragraph 7.02.B of the General Conditions.

1. Working hours are defined in the Special Provisions of the Contract.

SC-7.06 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS

SC 7.06.P Add the new paragraph immediately after Paragraph 7.06.O:

- P. 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.

SC-7.07 CONTRACTOR'S RESPONSIBILITIES

SC-7.07.B. Delete paragraph 7.07.B in its entirety.

SC-7.08 PERMITS

SC 7.08.B Add the following paragraph immediately after paragraph 7.08.A:

- B. Contractor shall be responsible for obtaining road opening, building, plumbing and electrical permits, and any other permit required through the City of Portland and for complying with all requirements. The fees for such shall be waived by the City.

SC-7.09 TAXES

SC 7.09.B Add a new paragraph immediately after Paragraph 7.09.A:

- B. Owner is exempt from payment of sales and compensating use taxes of the State of Maine on all materials to be incorporated into the Work. 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. 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 7.12 SAFETY AND PROTECTION

SC 7.12.A.2 Delete paragraph 7.12.A.2 of the General Conditions and replace with the following:

2. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site. The Contractor shall bear all risk of loss, regardless of cause, except for damage caused by Uncontrollable Events as defined in the Supplemental Conditions; and

SC 7.12.F Add the following to the end paragraph 7.12.F.:

Such remedy shall be performed to Owner's reasonable satisfaction. Notwithstanding anything in this section, the Owner shall maintain the right to pursue any insurance required per the Contract.

SC-7.18 INDEMNIFICATION

SC 7.18.A. Delete paragraph 7.18.A in its entirety and replace with the following:

- A. To the fullest extent permitted by Laws or Regulations, Contractor shall indemnify and hold harmless Owner, Owner's Consultants, and the officers, members, directors, partners, employees, agents, other consultants and subcontractors of each 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 resulting from 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) and provided that such claim, cost, loss, or damage is caused in whole or in part 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 or furnish any of the Work.

Any mechanic's lien or any other lien which may be filed against the premises which are the subject of the Contract by reason of the Work described herein shall be defended (by counsel reasonably acceptable to the Owner) and promptly discharged by Contractor at its own expense. Owner may require Contractor to provide a bond satisfactory to Owner to indemnify it against any lien and as a substitution in place of a lien. If Contractor should fail either to defend Owner against the lien or to discharge it, then Owner may do so at the Contractor's expense. In the event of such an undertaking by Owner, the Contractor will promptly reimburse Owner for all its costs and expenses in so doing, including, but not limited to, reimbursement of the Owner's reasonable counsel fees, as well as costs which may be incurred by it in substituting a bond in place of a lien.

Contractors obligations under this section shall survive termination of the Contract.

SC- 9 OWNER'S RESPONSIBILITIES

SC-9.04 Delete paragraphs 9.04, 9.05, 9.06, 9.07, 9.08, 9.10 and 9.11 in their entirety and insert the following in their place:

- 9.04. Several of the Owner's responsibilities described in various Articles of the General Conditions have been modified by various Supplemental Conditions that will not be specifically enumerated here. Full review of the Supplemental Conditions is necessary to a full understanding of the Owner's Responsibilities under this contract.

SC-10.03 PROJECT REPRESENTATION

SC 10.03.A Delete paragraph 10.03.A in its entirety and insert the following in its place.

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

SUPPLEMENTARY CONDITIONS

of the Work. Owner will furnish a Resident Project Representative to assist Owner 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 following paragraph

SC10.03.B Add a new paragraph(s) immediately after paragraph 10.03.A of the General Conditions which is to read as follows:

10.03.B Resident Project Representative is Owner's agent at the site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding Resident Project Representative's actions. Resident Project Representative's dealings in matters pertaining to the on-site work shall in general be with Engineer and Contractor keeping Owner advised as necessary. Resident Project Representative's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. Resident Project Representative shall generally communicate with Owner with the knowledge of and under the direction of Engineer. Resident Project Representative services shall be provided as the progress of construction necessitates.

10.03.C Duties and Responsibilities of Resident Project Representative:

10.03.C.1 Schedules: Review the progress schedule, schedule of Shop Drawing submittals and schedule of values prepared by Contractor and consult with Engineer concerning acceptability.

10.03.C.2 Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.

10.03.C.3 Liaison:

- a. Serve as Engineer's liaison with Contractor, working principally through Contractor's Superintendent and assist in understanding the intent of the Contract Documents; and assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-site operations.
- b. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.

10.03.C.4 Shop Drawings and Samples:

- a. Record date of receipt of Shop Drawings and samples.
- b. Receive samples which are furnished at the site by Contractor, and notify Engineer of availability of samples for examination.
- c. Advise Engineer and Contractor of the commencement of any Work requiring a Shop Drawing or sample if the submittal has not been reviewed by Engineer.

10.03.C.5 Review of Work, Rejection of Defective Work, Inspections and Tests:

- a. Conduct on-site observations of the Work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
- b. Report to Engineer whenever Resident Project Representative believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of Work that Resident Project Representative believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
- c. Verify that tests, equipment and systems startups and operating and maintenance training are conducted in the presence of appropriate personnel and that Contractor maintains adequate

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records thereof; and observe, record and report to Engineer appropriate details relative to the test procedures and startups.

- d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to Engineer.

10.03.C.6 Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.

10.03.C.7 Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report with recommendations to Engineer. Transmit to the Contractor decisions as issued by Engineer.

10.03.C.8 Records:

- a. Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and samples, reproductions of original Contract Documents including all Work Directive Changes, Addenda, Change Orders, Field Orders, additional Drawings issued subsequent to the execution of the Contract, Engineer's clarifications and interpretations of the Contract Documents, progress reports, and other Project related documents.
- b. keep a diary or log book recording Contractor hours on the job site, weather conditions, data relative to questions of Work Directive Changes, Change Orders or changed conditions, list of job site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
- c. Record names, address and telephone numbers of all Contractors, Subcontractors and major suppliers of materials and equipment.

10.03.C.9 Reports:

- a. Furnish Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and sample submittals.
- b. Consult with Engineer in advance of scheduled major tests, inspections or start of important phases of the Work.
- c. Draft proposed Change Orders and Work Directive Changes, obtaining backup material from Contractor and recommend to Engineer Change Orders, Work Directive Changes, and Field Orders.
- d. Report immediately to Engineer and Owner upon the occurrence of any accident.

10.03.C.10 Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the schedule of values, Work completed and materials and equipment delivered at the site but not incorporated in the Work.

10.03.C.11 Certificates, Maintenance and Operation Manuals: During the course of the Work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to Engineer for review and forwarding to Owner prior to final payment for the Work.

10.03.C.12 Completion:

- a. Before Engineer issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction.
- b. Conduct final inspection in the company of Engineer, Owner and Contractor and prepare a final list of items to be completed or corrected.

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- c. Observe that all items on final list have been completed or corrected and make recommendations to Engineer concerning acceptance.

10.03.D Limitations of Authority of the Resident Project Representative:

- 10.03.D.1 Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment, unless authorized by Engineer.
- 10.03.D.2 Shall not exceed limitations of Engineer's authority as set forth in the Contract Documents.
- 10.03.D.3 Shall not undertake any of the responsibilities of Contractor, Subcontractors or Contractor's Superintendent.
- 10.03.D.4 Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required by the Contract Documents.
- 10.03.D.5 Shall not advise on, issue directions regarding or assume control over safety precautions and programs in connection with the Work.
- 10.03.D.6 Shall not accept Shop Drawing or sample submittals from anyone other than Contractor.
- 10.03.D.7 Shall not authorize Owner to occupy the Project in whole or in part.
- 10.03.D.8 Shall not participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by Engineer

SC-11.04 CHANGE OF CONTRACT PRICE

SC 11.04.C.2.B add the following at the end of subparagraph 11.04.C.2.b, prior to the semicolon:

calculated on Subcontractor's actual cost before Subcontractor's fee is added.

SC-14.01 ACCESS TO WORK

SC 14.01.A Add the following at the end of paragraph 14.01.A.:

Contractor acknowledges and agrees that such inspection and testing conducted by Owner shall not be deemed to impose any duty or liability upon the City to supervise any aspect of or approve the quality of the Work.

SC-15.01 PROGRESS PAYMENTS

SC 15.01.C.1 Delete paragraph 15.01.C.1 in its entirety and replace with the following:

1. Owner will, within thirty days of receipt of each Application and state that the Application is being processed for payment, or return the Application to Contractor indicating in writing its reasons for refusing to accept the Application.

SC 15.01.D.1 Delete Paragraph 15.01.D.1 in its entirety and insert the following in its place:

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1. 40 days after presentation of the application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will be come due, and when due will be paid by the Owner to Contractor.

SC-15.06 FINAL PAYMENT

SC 15.06.A.3 Add the words "At Owner's option," before "In lieu of" in the first sentence of paragraph 15.06.A.3.

SC-16.03 OWNER MAY TERMINATE FOR CONVENIENCE

SC 16.03.A Delete paragraph 16.03.A including sub paragraphs 16.03.A.1 through 16.03.A.3 in their entirety and replace with the following:

- A. Owner shall have the right to terminate the Contract at any time for its convenience upon seven days' prior written notice to the Contractor. If the Contract is terminated by the Owner for convenience, Owner shall pay Contractor for all Work performed and all materials purchased pursuant to the Contract prior to receipt of such notice.

SC 17.01 METHODS AND PROCEDURES

SC-17.01.A Delete paragraph 17.01.A in its entirety and replace with the following:

- A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no such method and procedure has been set forth, Owner and Contractor may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

SC-17.01.B Delete paragraph 17.01.B in its entirety and replace with the following:

- A. The Contract shall be construed in all respects in accordance with, and governed by, the laws of the State of Maine. The parties hereby consent to the exclusive jurisdiction of the Superior Court for the County of Cumberland in the State of Maine, for all actions, proceedings and litigation arising from or relating directly or indirectly to this Agreement or any of the obligations hereunder, and any dispute not otherwise resolved as provided in the Contract shall be litigated solely in said Court.

SC 18.09 NON-DISCRIMINATION

SC-18.09 Add the following paragraph immediately after paragraph 18.08

18.09 Non-Discrimination

- A. Contractor agrees to adhere to a policy of non-discrimination in all employment actions, practices, policies, procedures, phases, and conditions of employment. This shall include compliance with the Workforce Investment Act of 1998, as amended (WIA, 29 CFR part 37); the Nontraditional Employment for Women Act of 1991; title VI of the Civil Rights Act of 1964, as amended; section 504 of the Rehabilitation Act of 1973, as amended; the Age Discrimination Act of 1975, as amended; title IX of the Education Amendments of 1972, as amended; and with all applicable requirements imposed by or pursuant to regulations implementing those laws, including but not limited to 29 CFR part 37 and all other applicable laws, including the Maine Human Rights Act, ordinances and regulations regarding equal opportunity and equal treatment. Contractor specifically agrees that all employment-related decisions (including but not limited to hiring, discharge, transfers, promotions, discipline, training, job opportunities, and wage and salary levels) will be made without discrimination based on an individual's race or color, religion, age, sex (including pregnancy), sexual orientation, gender identity or expression,

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ancestry or national origin, physical or mental disability, veteran status, genetic information, previous assertion of a claim or right under Maine's Workers' Compensation Act, previous actions taken protected under Maine's Whistleblowers' Protection Act, or any other protected group status as defined by applicable law. Provisions in applicable laws providing for bona fide occupational qualifications, business necessity, or age limitations will be adhered to by Contractor where appropriate.

SECTION 00810 - NOTICE OF AWARD

Date of Issuance:	
Owner: City of Portland, Maine	Owner's Contract No.: Bid 20019
Engineer: City of Portland, Maine	Engineer's Project No.:
Project: Motley Street Storm Drain and Sewer Replacement Project	Contract Name: Motley Street Storm Drain and Sewer Replacement Project
Bidder:	.
Bidder's Address:	

TO BIDDER:

You are notified that Owner has accepted your Bid dated October 15, 2019 for the above Contract, and that you are the Successful Bidder and are awarded a Contract for: Motley Street Storm Drain and Sewer Replacement Project.

The Contract Price of the awarded Contract is: \$ _____ subject to unit prices.

Two (2) unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award and has been transmitted or made available to Bidder electronically.

a set of the Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 10 days of the date of receipt of this Notice of Award:

1. Deliver to Owner two (2) counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security (performance and payment bonds) and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6 and the Supplemental Conditions.

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 Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner City of Portland

Authorized Signature

By: _____

Title: _____

Copy: Engineer

SECTION 00811 - NOTICE TO PROCEED

Owner: City of Portland, Maine	Owner's Contract No.: Bid 20019
Contractor:	
Engineer: City of Portland, Maine	Engineer's Project No.:
Project: Motley Street Storm Drain and Sewer Replacement Project	Contract Name: Motley Street Storm Drain and Sewer Replacement Project
	Effective Date of Contract:

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on 20019.

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the date of Substantial Completion including finished pavement is Mmm dd,yyyy and the date of readiness for final payment is Mmmm dd, yyyy

Owner:

Authorized Signature

By:

Title:

Date

Copy: 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

_____ who being duly sworn according to law
authorized representative of corporate contractor)

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
_____ (Contractor)

and from _____ the sum of One Dollar and other valuable considerations in
_____ (Owner)

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

_____ (Contractor)
Agreement between _____ and _____

_____ (Owner) _____ (Contractor)
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

_____ (Agreement Date)

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,
_____ (owner)
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)

_____(seal)
(Partnership - Contractor)

_____ By _____(seal)
(Partner)

Attested:

(Corporation)

_____ By _____
(Secretary) (President or Vice President)

(Corp. Seal)

END OF SECTION

SECTION 00838 - CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: City of Portland, Maine	Owner's Contract No.: Bid 20019
Contractor:	Contractor's Project No.:
Engineer: City of Portland, Maine	Engineer's Project No.: -
Project: Motley Street Storm Drain and Sewer Replacement Project	Contract Name: Motley Street Storm Drain and Sewer Replacement Project

This [preliminary] [final] Certificate of Substantial Completion applies to:

- All Work The following specified portions of the Work:

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 Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. 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.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities: None
 As follows

Amendments to Contractor's responsibilities: None
 As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

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.

EXECUTED BY ENGINEER:		RECEIVED:		RECEIVED:	
By: _____	By: _____	By: _____	By: _____	By: _____	By: _____
(Authorized signature)	Owner (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)	Contractor (Authorized Signature)	Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____	Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____	Date: _____	Date: _____	Date: _____

SECTION 00839 - WAIVER OF LIEN - MATERIALS AND LABOR

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		Work Change Directive No.
Date of Issuance:		Effective Date:
Owner: City of Portland, Maine	Owner's Contract No.: 20019	
Contractor:		Contractor's Project No.:
Engineer: City of Portland, Maine	Engineer's Project No.:	
Project: Motley Street Storm Drain and Sewer Replacement Project.	Contract Name:	Motley Street Storm Drain and Sewer Replacement Project

Contractor is directed to proceed promptly with the following change(s):

Description:

Attachments: *[List documents supporting change]*

Purpose for Work Change Directive:

Directive to proceed promptly with the Work described herein, prior to agreeing to changes on Contract Price and Contract Time, is issued due to: *[check one or both of the following]*

Non-agreement on pricing of proposed change.

Necessity to proceed for schedule or other Project reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price \$ _____ [increase] [decrease].

Contract Time days _____ [increase] [decrease].

Basis of estimated change in Contract Price:

Lump Sum Unit Price

Cost of the Work Other

RECOMMENDED:	AUTHORIZED BY:	RECEIVED:
By: _____ Engineer (Authorized Signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____
Approved by Funding Agency (if applicable)		
By: _____	Date: _____	
Title: _____		

SECTION 00842 - CHANGE ORDER

Change Order No. _____

Date of Issuance:	Effective Date:
Owner: City of Portland, Maine	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: City of Portland, Maine	Engineer's Project No.:
Project: Motley Street Storm Drain and Sewer Replacement Project.	Contract Name: Motley Street Storm Drain and Sewer Replacement Project.

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

Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i>
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (if required)	By: _____ Owner (Authorized)	By: _____ Contractor (Authorized)
Title: _____	Title: _____	Title: _____
Date: _____	Dat: _____	Dat: _____

Approved by Funding Agency (if applicable)

By: _____ Date: _____
Title: _____

SECTION 00844 - APPLICATION FOR PAYMENT

(The remainder of this page was left blank intentionally)

SECTION 01000- SPECIAL PROVISIONS

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

The City of Portland has 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.

1.2 STANDARD SPECIFICATIONS

The City of Portland, Maine has adopted for this project the "State of Maine, Department of Transportation (MaineDOT), Standard Specifications, Revision of November, 2014", 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: maine.gov/mdot/contractors/publications/standardspec/

The Standard Specifications adopted for this project include the MaineDOT SPECIAL PROVISION DIVISION 400 PAVEMENTS dated February 4, 2014 attached in the Appendices.

1.3 SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS

The City of Portland has also made specific changes to the MaineDOT Standard Specifications to incorporate the requirements of the City of Technical and Design Standards and Guidelines, Revision November 2014. 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.
- A. 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. Project Specific Permit Requirements

3. Special Provisions
4. Notes on Plans
5. Plans
6. Supplemental Specifications
7. City of Portland Supplemental Standard Details
8. City of Portland Standard Details
9. EJCDC C-700 Standard General Conditions with the Supplemental Conditions
10. MaineDOT Repair Specifications
11. MaineDOT Standard Specifications

B. NO SEPARATE PAYMENT

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.

1.4 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 and City at the project start. This shall include engineers office, construction signage, staging and general mobilization.
 5. Project Specific Construction Sequence Requirements:
 - a. As noted on the plans.
- B. The construction of the work will disrupt existing structures, utilities and vehicle and pedestrian access to residences along the affected streets. To maintain operation of the nearby businesses and to minimize disruption, the construction must be divided into phases or sequenced appropriately.
- C. 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 completing the work and the dates of street closures.
- D. 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 adjacent properties will not be adversely affected. Requests to deviate from the sequence will be reviewed at the weekly and monthly meetings.

E. Portland Water District (PWD) Sequence of Work:

1. Construction of Portland Water District Water (PWD) Services will be required to be coordinated with PWD.

1.5 WORKING HOURS

No work shall be performed during the following hours, without prior written approval from the Director of Public Works.

- A. From September 1 of any year through May 31 of the following year, no construction work shall be performed between 7:00 p.m. of any day and 7:00 a.m. of the following day.
- B. From June 1 of any year through August 31 of the same year, no construction work shall be performed between 8:00 p.m. of any day and 7:00 a.m. of the following day.
- C. On Saturdays, Sundays, and legal holidays, construction work shall not be performed before 8:00 a.m.

Construction shall not interfere with the normal flow of traffic on arterial streets including Brighton Avenue. The full inbound roadway lane width shall be maintained between 7:00 a.m. and 9:00 a.m. and the full outbound roadway lane width shall be maintained between the hours of 3:30 p.m. and 6:00 p.m.

The definition of work for this specification shall include the starting or moving of equipment, machinery, or materials. Any day worked for four hours or more shall be considered a full working day.

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 PROTECTION OF TREES

- A. 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. Any tree damaged by the contractor shall result in a financial penalty of \$1,500 for each incidence. Damage shall include any and all impacts to trees to include but not limited to limb/tree breakage, damage to tree trunks, roots structure and any incidental impacts.
- B. Tree protection standards
 1. Tree protection shall include construction fencing / protection of the tree root zone.
 2. No storage of construction equipment or materials within the drip line area of existing trees.
 3. Pro-active tree pruning prior to construction activities is required and shall be coordinated with the City Arborist.

4. Tree protection work shall be incidental to the work and no separate payment will be made.

The web sites below outline information on preventing tree damage:

http://treesaregood.com/treecare/resources/Avoiding_Tree%20damage.pdf

<http://www.extension.umn.edu/distribution/housingandclothing/DK6135.html>

1.8 TRAFFIC SIGNS

- A. All existing traffic signs which are to be removed during construction shall be carefully dismantled 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 City, any damages caused 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. All remounted signs are to be installed on new U-Channel Posts with breakaway connections as indicated in the Standard Specifications and Supplemental Specifications.
 5. This work shall be considered as subsidiary obligation of the contract for which no specific payment will be made.

1.9 TRAFFIC OFFICERS

- A. The presence of Portland Police will be a determination made by the Traffic Engineer based on the contractor's submitted traffic control plan. If Police are required (as determined by the City), the City will hire and reimburse them. The Police Department requires 48 hours notice for any Police detail onsite.

1.10 MAINTENANCE OF TRAFFIC

- A. 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, electronic variable reader boards, barriers and 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.
- B. The Contractor shall prepare and submit a detailed Traffic Control and Detour Plan that is coordinated with the construction schedule and addresses traffic control for all aspects of the project. This plan shall be prepared and stamped by a Professional Engineer licensed in the State of Maine. This work shall be considered a subsidiary obligation of the contract for which no specific payment will be made.

1. The Contractor must submit their traffic plan to the City of Portland Transportation Engineer for review and approval, 3 working days prior to the pre-construction meeting. The traffic plan must include and meet the requirements of the contract documents together with any additional traffic control provisions to ensure the efficient and safe passage of the public.
2. Guidelines for the construction and erection of barricades, lighting devices, warning signs, etc. may be found in the most recent edition of "Manual on Uniform Traffic Control Devices for Streets and Highways" published by the Department of Transportation of the Federal Highway Administration. This work shall be considered a subsidiary obligation of the contract for which no specific payment will be made.
3. This project will include traffic maintenance requirements which shall be the contractor's sole responsibility to provide and maintain at the contractor's expense. The contractor shall be responsible for cooperating with the City and shall make modifications/changes to the traffic control as directed by the City. Signage and barricades may need to be relocated, modified or supplemented throughout construction as directed by the City and responsive to neighborhood and traffic flow. The Contractor shall promptly provide additional signage including custom signage as necessary and directed by the City. No extra payment will be made.
4. The following project specific requirements and restrictions apply.
 - a. Local access for private vehicles, pedestrians and emergency vehicles to residential and commercial properties in the closed section of all roadways shall be provided at all times.

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 PROJECT SURVEY QUALITY CONTROL AND CONSTRUCTION LAYOUT

- A. The definition of "Department" in Division 100 of the Standard Specifications shall be deleted and replaced with the following: "Department shall mean the Water Resources Division or Public Works Department, City of Portland, Maine acting through its Director or through his duly authorized representative."
- B. Construction Surveying
 1. City Provided Services:
 - a. The City of Portland will provide coordinate locations for the Engineer's network of survey control points in the project area and the baselines shown on the plans. Control points will be paint marked in the field. The Contractor shall be responsible for maintaining these controls during construction and providing all additional survey required for construction layout which shall be completed by a licensed Professional Engineer or Surveyor.

9. Describe procedures used to integrate vertical refinement equipment (i.e. laser); including the process of determining and verifying transmitter set-up location and communicating any necessary adjustments to the machine control equipment.
10. Name(s) and qualifications of the Contractor's designated on-site surveyor(s) or engineer(s) responsible for performing the project layout.
11. Design software and version used to develop the Digital Terrain Model (DTM).

E. Field Layout Specifications

1. All Work accomplished through electronic layout methods and/or machine control must meet the same accuracy requirements as the conventional grading construction standards detailed in the Standard Specifications. The contractor shall not use GNSS, GPS or RTS equipment for a construction activity that requires a greater precision than the machine's capability as per the manufacturer's recommendation.

F. Basis of Payment

1. No payment shall be made by the City for the Contractor's elected use of electronic methods of project location layout and control. Any delays arising from the operation of GNSS, GPS, or RTS layout or machine control systems will not result in adjustment to the bid price or quantity of any construction items or be justification for granting any type of contract extension. Any costs incurred through incorrect use of GNSS, GPS, or RTS layout or machine control systems or re-work necessary through their use are the sole responsibility of the Contractor.

G. Survey Quality Assurance

1. It is the Department's prerogative to perform construction survey quality assurance. Construction survey quality assurance is generally defined as an independent check of the Contractor's construction survey quality control. The construction survey quality assurance process may involve physically checking the Contractor's construction survey layout using independent survey data, or may simply involve reviewing the construction survey quality control written documentation.
2. If the Department elects to physically check the Contractor's survey layout, the Contractor's designated surveyor may be required to be present. The Department will provide a minimum notice of 48 hours to the Contractor, whenever possible, if the Contractor's designated surveyor's presence is required. Any errors discovered through the quality assurance process shall be corrected by the Contractor, at no additional cost to the Department.

1.13 ELECTRONIC FILES AND RELEASE FORM

- A. Electronic copies of the plans will be made available to the selected Contractor. The Engineer's Electronic File Release and Waiver Form identifying limitations on the Contractor's use of the data and limitations on the Engineer's liability related to the Contractor's use of electronic data will need to be filled out and signed by the Contractor before the files will be delivered.

- B. Electronic files will be provided in AutoCAD Civil3D 2018 .dwg and/or LandXML file format. Translation of the files to other electronic formats is the responsibility of the Contractor.

1.14 SUBSURFACE SOILS INFORMATION

- A. All subsurface soils information, including but not limited to ledge, boring, refusal, or groundwater elevations, is approximate only and is shown on the Drawings for design purposes only and the convenience of the Contractor. The Contractor shall make his own investigations regarding the actual location and/or nature of such information and shall not rely on nor make claims for any extra payments based on the information shown on the drawings.

1.15 SHEETING AND BRACING

- A. Any sheeting and/or bracing required for the satisfactory installation of drainage and/or sanitary sewerage structures and pipes will not be paid for separately but shall be considered as incidental to the appropriate bid item. Contractor is advised that project conditions are expected to require special attention to sheeting and bracing to accommodate the site and work characteristics. Design, maintenance and all work associated with Sheeting and Bracing is the contractors responsibility and shall be considered incidental to the cost of work. Contractor shall have a Maine Licensed Professional Engineer design all sheeting and bracing. Contractor shall ensure sheeting and bracing due not undermine or impact the bearing capacity/strength of the underlying soils.

1.16 DEWATERING:

- A. Excavation and installation of storm drains, waterlines, sewers, services and associated structures will require continuous dewatering through-out construction.
- B. Contractor is responsible for preparing and implementing a dewatering plan meeting environmental regulations and requirements stipulated within the contract documents and plans.
- C. Prior to construction, the contractor shall submit a written dewatering plan and shall meet with City representatives to review the dewatering plan.
- D. The contractor shall make adjustments to the dewatering plan as required by the City or other agencies. Any required changes shall be considered incidental to the cost of dewatering and no extra payment will be made. All dewatering shall be run through a pumped sediment removal system equal to "dirt bag" or alternative methods as approved by the Engineer.
- E. It is anticipated that high volumes of pumping will be required for the project. Discharge locations shall be approved by the engineer prior to construction. The contractor shall be responsible for all work and costs associated with dewatering the jobsite including any changes, modifications or special dewatering systems/requirements to ensure the site is dewatered. This work shall be considered incidental to the related pay items and no separate payment will be made.

1.17 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.

1.18 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.

1.19 PRECONSTRUCTION CONFERENCE

- A. A conference will be held at 212 Canco Road, Portland, Maine within ten (10) days after the awarding of the contract. At this time, the contractor will be required to submit a graphically illustrated schedule and a plan showing project activities. City officials and representatives of the various utility companies involved in the project will be present at this meeting.
- B. It is the purpose of this meeting to inform the various agencies of the proposed work schedule, and to give them the opportunity of discussing any difficulties and of offering suggestions to the Contractor concerning his proposed schedule in order that full cooperation may be reached.

1.20 SCHEDULE OF OPERATIONS

- A. The contractor shall submit 3 days prior to the pre-construction meeting a detailed schedule showing the sequencing, critical path items, milestones and scheduling of the work. This schedule must show sufficient detail to insure compliance with the established complete dates above. Updates will be required as work progresses.

1.21 SETTING OF PIPES TO LINE AND GRADE

- A. If laser beam equipment is used for laying storm drain and/or sanitary sewer pipe, frequent checks shall be made to assure close adherence to line and grade. If lasers are not used, batter boards are to be set at maximum twenty-five foot (25') intervals and grades transferred to the boards with a transit, level, or line level. Setting pipes to grade by use of "pop" levels or carpenter levels will not be permitted. Contractor is advised the project includes setting pipes and storage conduit with minimal slopes. Contractor shall insure pipe and conduit are set adhering to the line and grade requirements and shall utilize means and methods to ensure line and grade are accurate and consistent.

1.22 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 including work limits specified on contract drawings and required for construction.
- B. Utility trenches when subject to vehicle traffic shall be temporarily paved as noted on the plans. Furnishing install, and maintaining temporary trench pavement is incidental to the cost of the pipe. No separate payment will be made for any temporary pavement

1.23 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.
- B. The Contractor 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.
- C. Once pavement is removed from a street for utility installation, the Contractor shall work continuously on that street until base pavement is installed. The contractor may at his option install temporary pavement on opened trenches and streets. No separate or additional payment shall be made for temporary pavement.

1.24 TRENCH SUBBASE

- A. The Contractor shall be required to construct his roadway subbase concurrent to his trench backfilling operation if the street is not being reconstructed.

1.25 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.
- B. Calcium chloride shall be spread only on disturbed unpaved areas. Calcium chloride shall not be spread on paved areas that are covered by granular material. These areas shall be swept clean of all granular material. Dust on paved areas shall be controlled with water before sweeping

1.26 WINTER MAINTENANCE

- A. Winter construction will be allowed on this Project as stipulated in contract documents.
- B. The CONTRACTOR agrees that the winter operations aspect of the project shall be coordinated with the City's winter efforts and the additional costs associated with the activities not be borne by the City. Winter Maintenance shall be considered incidental to the cost of the work and no extra payment will be made.
- C. CONTRACTOR shall provide on-site response to sand/salt treatment, snow plowing, and snow removal operations within one hour of receiving a request from the City.
- D. CONTRACTOR shall provide for maintenance of the trench and driveway aprons impacted by the project's winter work. Replacement materials of sufficient strength and integrity shall be used for roadway and aprons to hold up to winter conditions. No additional payments will be made.
- E. CONTRACTOR shall not re-stripe the street associated with winter work but shall ensure the delineation of the work zone as the project progresses. Re-establishment of the work zone following a storm will be required when snow removal operations have been completed. No payment will be made for the replacement of traffic control devices.
- F. The City will not reimburse for sand/salt treatment, snow plowing, or snow and ice removal operations associated with this project.

- G. In the event that a shut-down period is required, CONTRACTOR shall contact the City and a time frame shall be established under mutual agreement only.
- H. CONTRACTOR acknowledges that frozen materials shall not be used in any aspects of the project and the no payment shall be made for the methods necessary to keep materials free from freezing.

1.27 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.

1.28 BYPASS PUMPING

- A. Bypass pumping maybe required for some pipe installations to maintain existing sewer and storm drainage flows. Contractor shall submit a bypass pumping plan for City review and approval. The plan shall identify the equipment to be used along with the operations and maintenance procedures proposed by the Contractor to bypass flow throughout the duration of construction. No overflow of sanitary sewage or combined sewage to any overland area or receiving water is permissible. The Contractor shall be solely responsible for all damages or fines associated with overflows that occur as a result of the sewer installation work. All costs associated with bypass pumping shall be considered incidental to the work and no separate payment will be made.
- B. Bypass pumping and other required work to maintain flows shall be considered incidental to the related pipe pay item.

1.29 COSTS OF CONSTRUCTION

- A. Any materials, work or associated costs required to complete the project and not specifically associated with or identified in pay items shall be considered incidental to the costs of construction. No extra payment will be made.

1.30 CITY OF PORTLAND'S STREET EXCAVATION ORDINANCE

- A. The Contractor is hereby advised that all work shall conform to the regulations of Chapter 25 of the Municipal Code, "Streets, Sidewalks and Other Public Places", as currently amended. The Contractor shall be responsible for obtaining and completing the Street Opening Application but will not be charged for the Street Opening Permit for the Excavation.

1.31 RECORD DRAWINGS

- A. The Contractor shall keep daily records of all changes in the work, ties to all new service connections, and elevations of all inverts. Upon completion of the project, the Contractor shall deliver to the Engineer a marked-up set of plans with all changes and required information indicated in red.
- B. The Contractor shall maintain a record of all service lead locations and locations of buried fittings, etc., throughout the project. The locations shall be recorded by 3 ties from fixed permanent points. Prior to requesting final payment, the Contractor shall submit the records in triplicate bound form. The records shall be clearly legible and include the street, tax map, lot number and reference contract drawing number. A blank form is provided at the end of this section and is to be used by the Contractor for preparation of record ties.
- C. Prior to requesting final payment, the Contractor shall submit these records to the city and the engineer in a clearly legible form in order to produce Record Drawings. Once all information has been received and verified then the City will produce the record drawings from the information received.

SEWER SERVICE LATERAL LOCATION RECORD

Date Installed: _____

City of: _____

Type/Size of Service Pipe: _____

Street: _____

Connection at Sewer Main: _____

Dwelling No: _____

Depth, end of Service Pipe: _____

Occupant: _____

Length of Service Pipe Laid: _____

Owner: _____

Measured, Located by: _____

Project Contractor: _____

Location Diagram
(Provide 3 Ties to Permanent Objects)



Remarks _____

1.32 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 and granite curbing that are removed and not designated for reuse in the work shall remain the property of the City Portland and shall be transported and stockpiled by the Contractor at a designated location within the City Portland. The cost of loading, transporting unloading and stockpiling cobbles and stacking curbing is incidental to the contract and no separate payment will be made.

1.33 SANITARY FACILITIES

- A. The Contractor shall provide self-contained toilet units in sufficient numbers for use of all persons involved in the work.

1.34 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 (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 and 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.

1.35 COMBINED SEWER FLOWS

- A. The existing sewer lines in the project are combined sewers. As such the Contractor shall take necessary health and safety precautions when working in and around these lines.

1.36 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 Specifications.

1.37 UTILITY FLOATATION

Storm drains and associated structures will be subject to floatation until all utilities are installed and backfilled to subbase gravel. Contractor is responsible for implementing anti-floatation provisions during installation of utilities. This work shall be considered incidental to the related pay items.

1.38 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. Utility Pre-Construction Meeting: A Utility Pre-Construction Meeting will be held to coordinate the Work of the Contractor and the Work of affected Utility Companies. This meeting will be held as required by the contract provisions and the Contractors Approved Schedule but, in any event, will be held before the start of on-site construction by the Contractor that affects Utility Facilities. The Department's designated representative, Engineer, Resident Project Representative, the Contractor's Superintendent, and a representative of each affected Utility Company will attend. The Engineer will prepare minutes of the Utility Pre-Construction Meeting and distribute them to all attendees. Any requests to revise the minutes must be made to the Engineer within 7 Days of distribution. These minutes will constitute the final record of the meeting.
- B. 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.
- C. 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 manner, 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:

Electric:
Central Maine Power Company
162 Canco Road
Portland ME 04103
Attention:
Anthony Tanguay

Water:
Portland Water District
225 Douglass Street
Portland ME 04101
Attention:
Jay Arnold
William 'Ned' Pierce

Telephone:
Verizon / FairPoint
13 Davis Farm Road
Portland ME 04103
Attention:
Jim McLean, Martin Pease

Fire Alarm:
Portland Fire Department - Electric
109 Middle Street
Portland ME 04101
Attention:
Dick Andrews

Gas:
Unitil Corporation
1075 Forest Avenue
Portland ME 04103
Attention:
Matt Doughty, Joe Renda

Cable TV:
Time Warner Cable
118 Johnson Road
Portland ME 04102
Attention:
Deb Paiement
Mark Pelletier

Railroad:
Maine Central Railroad
P. O. Box 9701
Portland ME 04104
Attention:
Mr. Robert Hough

Sewer:
Dept. of Public Works
212 Canco Road
Portland ME 04103
Attention:
John Emerson

The completeness of the above listing is not guaranteed by the City of Portland

17. The Contractor agrees to indemnify, defend, and hold harmless the City 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.

- D. 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.
- E. 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.
- F. No Separate Payment: The cost of all Work related to utility coordination is Incidental to the Contract and no separate payment will be made.

1.39 WATER MAIN SERVICE REPLACEMENTS

- A. The contractor will be responsible for replacing Portland Water District (PWD) house service lines from the property line to the main in the street. This work is being completed by the City as part of a Utility agreement between the City of Portland and PWD.
- B. Prior to any PWD work the contractor shall notify the District at least 5 business days before any work commences. The district will provide an inspector who must be present during any PWD work on the project. All PWD work shall adhere to all requirements located in the Portland Water District standard construction specifications and procedures which are publicly available on the District's website. Their terms are expressly incorporated herein and made a part hereof.

1.40 SPECIAL PROVISION MAINEDOT DIVISION 400 PAVEMENTS

- A. The MaineDOT Special Provision Division 400 Pavements is attached in the appendices and is adopted for this project with the modifications and additions reference in the Supplemental Specifications.

1.41 MAINEDOT SECTION 108 PAYMENT (ASPHALT ESCALATOR)

- A. Section 108.4.1 Price Adjustment for Hot Mix Asphalt shall apply to this project. The Asphalt Escalator clause shall only apply to items 403.207 Hot Mix Asphalt 19.0mm and 403.210 Hot Mix Asphalt 9.5mm. The asphalt escalator provisions shall not apply to pavement that is incidental to other items in this contract.

1.42 SPECIAL PROVISION SECTION 203 ROCK EXCAVATION AND BLASTING

The provisions of Section 104.3105.2.7 Use of Explosives and 203.042 Rock Excavation shall apply with the following modifications

General This work included rock exaction and blasting for utility trenches.

Blasting Notice to Utilities 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.

Time Limitations

Blasting shall be limited to between the hours of 9:00 am and 4:00 pm, Monday through Friday

105.2.7 Use of Explosives

A. Standards When using explosives, the Contractor shall use the utmost care to protect life and property. Explosives must be transported, stored, and used in compliance with this Contract, in compliance with all applicable federal, State, and local laws, rules and regulations, and in accordance with all applicable provisions of the latest version of the Blasters' Handbook published by the International Society of Explosives Engineers (ISEE) of Cleveland, Ohio. In any case, the Contractor shall comply with the recommendations contained in Chapter 13 - "Blasting Safety" of said Blasters' Handbook, unless a qualified person conducting the blasting operations for the Contractor certifies to the Department in writing that certain provisions of said Chapter 13 are not necessary to protect life and property.

B. Blasting Zone - Signage and Flaggers The Contractor shall define a blasting zone. When using electric detonators, the blasting zone must allow safe distances from radio transmitters based upon their power output frequency. The blasting zone must include all areas within which people could be injured or property could be damaged by the blast. The Contractor shall mark Highways conspicuously at the perimeter of the blasting zone with signs in accordance with MUTCD. If applicable, the Contractor shall place signage along railroads and appropriate notice shall be provided to marine traffic. The Contractor shall provide a sufficient number of flaggers stationed outside the blasting zone to stop all approaching traffic during blasting operations.

C. Other Requirements The Contractor shall provide to the Department general liability insurance coverage covering use of explosives in accordance with Article 6 of the General Conditions. Immediately after the blast, the Contractor shall remove any debris that is obstructing Highway, pedestrian, railroad, or marine traffic flow. For related provisions, see Sections 104.4.6(C)(8)- Blasting Notice, 104.3.11 - Responsibility for Property of Others, and 110.1 - Indemnification. See related Spec 203.042

203.042 Rock Excavation and Blasting

Amend 2. to read:

2. The Contractor shall observe the entire trench excavation blast area to guard against potential hazards before commencing blasting.

Amend 4.a. to read:

4.a. The Resident will, at all times, have the authority to prohibit or halt the Contractor's blasting operations if it is apparent that through the methods being employed the safety and convenience of the public is being jeopardized.

Amend 5.a. to read:

5.a. Advance submittal – Not less than two weeks prior to commencing trench drilling and blasting operations, or at any time the Contractor proposes to change drilling and blasting methods, the Contractor shall submit a Blasting Plan to the Resident for review and approval. The Blasting Plan shall contain full details of the drilling and blasting patterns and controls the Contractor proposes to use.

Amend 5.v.1. to read:

5.v.1. The delay elements in blasting caps are known to deteriorate with age. For this reason, it is required that all blasting caps used on the project be less than one year of age. Blasting products will not be allowed on the job site if the date codes are missing.

Add to 6.a.:

6.a.1 The preblast survey shall be completed by a Subcontractor hired by Contractor. Survey to be performed by an independent business entity with a minimum of 5 years experience in similar type surveys.

6.a.2 The Preblast survey shall include all structures within 500 feet of the blast.

6.a.3 The Preblast survey shall include but not be limited to:

- a. Still photos taken at 50 foot maximum stationing. (4" x 6" color prints).
- b. Video tape of entire construction area.
- c. Video tape of each structure within construction area to show preblast conditions. Highlight existing defects in structures and pavements. Provide some means of establishing scale of existing defects, i.e.: include tape measure or folding ruler at defect during video taping.
- d. Video taping must be done with commercial grade equipment to allow equipment still viewing without distortion of the viewed area.
- e. Still photos and video tape shall be retained by the preblast surveyor and shall be available for viewing by the Owner and Engineer within 24 hours upon request.

Add to 6.b.:

6.b.1. The Contractor shall design and conduct all utility trench blasting activities in such a manner that the peak particle velocities of ground vibrations, measured at the locations of the nearest aboveground structures to the blast, including residential and commercial buildings do not exceed the "safe limits" recommended by the U.S. Bureau of mines in Figure B of BUMINES RI 8507, and in no instance shall exceed 2.0 in./sec.

6.b.2. The Contractor shall design and conduct all trench blasting activities in such a manner that the peak particle velocities of ground vibrations at adjacent existing underground utilities, including vaults, ductile iron pipe, coated steel pipe and plastic pipe do not exceed 4.0 in./sec.

Amend 8. To read:

OVERBREAK CONTROL Overbreak is defined as the excessive fracturing of rock beyond the desired trench excavation limit. Blasting for the utility trench excavation must be done in such a manner as to minimize the fracturing of rock beyond the required excavation, and therefore minimize the potential for damage to nearby existing underground utilities, including vaults, ductile iron pipe, coated steel pipe and plastic pipe. No blasting will be performed to remove rock in areas 2 ft. or closer to existing underground utilities. Rock in these areas will be removed with jack hammers or similar equipment.

If the Engineer considers overbreak to be unfit for foundations, the overbreak rock shall be removed and the excavation shall be backfilled with suitable material. All such removal and backfilling shall be done by and at the expense of the CONTRACTOR

Delete: 8.a.-8.d.

Basis of Payment

No payment shall be made for the Contractor's elected use blasting. Any delays arising from blasting operations will not result in adjustment to the bid price or time. Any costs incurred through use explosives including re-work or repair of damaged property are the sole responsibility of the Contractor.

1.43 CAD RELEASE FORM

The AutoCAD files will be made available to the prospective bidders as well as 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. The Electronic Release Form is attached to the project specifications. The price for the files will be \$105.00. Once the form and payment is received by the purchasing office, the files will be delivered by the project manager of the Public Works Department.

AN AGREEMENT BETWEEN THE CITY OF PORTLAND (HEREINAFTER "City") AND CONTRACTOR FOR TRANSFER OF COMPUTER AIDED DRAFTING (CAD) FILES ON ELECTRONIC MEDIA

**City of Portland
Public Works Department
212 Canco Road
Portland, ME 04103**

Recipient:

Project No. _____

Date: _____

Project Name: _____

Location: _____

The City will provide the following CAD files, dated _____ related to the Civil drawing series of the above referenced project, for the project use by the Recipient:

- | | |
|----------|----------|
| 1. _____ | 5. _____ |
| 2. _____ | 6. _____ |
| 3. _____ | 7. _____ |
| 4. _____ | 8. _____ |

Drawings were prepared on the following:

Software: AutoCAD Civil 3D Version: 2014

Recipient shall pay City a handling fee of \$105* (*this fee includes 5% Maine State Tax). Files will be in the standard format of AutoCAD Civil 3D version 2014. An additional translation fee of \$105* (will apply to translating the files to another CAD format or an earlier version of AutoCAD). This signed agreement and payment of fees are required prior to transferring the files.

Handling fee:	\$100.00 + \$5 Maine State Tax (5%) = \$ 105.00
Translation fee (if requested)	_____ + \$5 Maine State Tax (5%) = _____

Total Cost: = _____

Transfer method (check one): E-mail, Email address: _____
 CD-ROM
 Zip Disk

Payment type (check one): Check
 Credit Card (Visa or Master Card only)
 Visa or Master Card
Name of Cardholder: _____
Credit card no: _____
Exp. Date _____

TERMS AND CONDITIONS:

1. It is understood and agreed that all drawings, specifications, or other documents of any kind prepared by City, whether in hard copy or in electronic or machine readable format including Electronic Documents (collectively the "City's Documents"), are instruments of their services prepared solely for use in connection with the single project for which they were prepared and that City retains all common law, statutory and other reserved rights, including the copyright. This agreement is not intended in any way to alter the respective interests of the parties in

the Instruments of Service as set forth in the City/Contractor Agreement, notwithstanding City's agreement to release the Electronic Documents to Recipient.

2. The Electronic Documents are provided as a convenience to the Recipient for informational purposes only in connection with the Recipient's performance of its responsibilities and obligations relating to the Project. The Electronic Documents do not replace or supplement the paper copies of the Drawings and Specifications which are, and remain, the Contract Documents for the Project. In all instances, it is the responsibility of the Recipient to insure that the Electronic Documents are consistent with the Contract Documents.

3. The parties agree that the Electronic Documents are not, nor shall they be construed to be, a product. It is expressly agreed by the Recipient that there are no warranties of any kind in such Electronic Documents or in the media in which they are contained, either express or implied.

4. City makes no representation as to the compatibility of the CAD files with any hardware or software.

5. Since the information set forth on the CAD files can be modified unintentionally or otherwise, the City reserves the right to remove all indicia of its ownership and/or involvement from each electronic display.

6. If any differences exist between printed Instruments of Service and Electronic Documents, the information contained in the printed documents shall be presumed to be correct and take precedence over the Electronic Documents.

7. Recipient agrees not to add to, modify or alter in any way, or to allow others to add to, modify or alter in any way, the Electronic Documents or any printed copies thereof.

8. The Electronic Documents are supplied in a translatable format. Any conversion of the format is solely the responsibility of the Recipient. Recipient understands and agrees that the conversion of hard copies of Instruments of Service into electronic or machine readable format or the conversion of Electronic Documents from the machine readable formats used by City to some other format may introduce errors or other inaccuracies. Recipient agrees to accept all responsibility for any errors or inaccuracies and to release City from any liability or claims for recovery of damages or expenses arising as the result of such errors or inaccuracies.

9. Where the Recipient has received specific permission to use the Electronic Documents in connection with the Recipient's obligation to prepare certain documents for Project, Recipient shall, in addition to the other obligations set forth therein, be obligated to remove City's title block from the copy of the Electronic Documents used by Recipient. It is understood and agreed that, without the separate express written permission of the City to do so, the Electronic Documents are not to be used by any contractor or any of its subcontractors of any tier of material supplier or vendor as a shop drawing or any other type of submittal or as the basis for preparing such shop drawing or submittal. The sole exception to this prohibition shall be that the Recipient may use the Electronic Documents as a clearly distinguishable separate background upon which to prepare its shop drawings or other submittal.

10. Recipient further agrees that the City's Documents were prepared for use in connection with this project only and that the Electronic Documents are supplied to Recipient for the limited use stated above only. Recipient agrees not to use, or to allow others to use, the Electronic Documents, in whole or in part, for any purpose other than as stated above.

11. The City believes that no licensing or copyright fees are due to others on account of the transfer of the CAD files, but to the extent any are, the Contractor will pay the appropriate fees and hold the City harmless from such claims.

12. Any purchase order number provided by the Contractor is for Contractor's accounting purposes only. Purchase order terms and conditions are void and are not a part of this agreement.

13. The City has prepared these CAD files for the sole purpose of plotting and printing a hard copy of the design documents. The City believes only the hard copy print to be the accurate representation of all drawing information. Hard copy written dimensions override electronic measured dimensions. User must verify computer data against hard copy prints.

14. Electronic CAD files are an inherently unstable medium and subject to bugs, deterioration, modifications, and viruses. CAD files are subject to inadvertent changes in the process of moving from one computer to another; or by compressing and decompressing the data; or by moving from one software revision to another; or any kind of manipulation of the data will lead to defects.

15. This agreement shall be governed by the laws of the State of Maine. Only printed copies of the Instrument of Service shall be signed and sealed.

16. Recipient agrees to waive any and all claims and liability against City and its subconsultants resulting in any way from any failure by Recipient to comply with the requirements of this Agreement for the Delivery of Documents in Electronic Format.

17. The Recipient agrees that no third party beneficiary status or any other right of action is created in favor of any contractor, subcontractor, materialmen or other third party against the City by virtue of this Agreement or in connection with its delivery of Electronic Documents, and no third party beneficiary status is intended.

18. Recipient further agrees to indemnify and save harmless the City, its officers and employees from any and all claims, judgments, suits, liabilities, damages, costs or expenses (including reasonable defense and attorneys fees including claims asserted in breach of contract, breach of warranty, negligence, or any other tort) arising as a result of either: 1) Recipient's failure to comply with any of the requirements of Agreement for the Delivery of Documents in Electric Format; or 2) a defect, error or omission in the Electronic Documents or the information contained therein, which defect, error or omission was not contained in the Contract Documents as defined in Paragraph 2 or where the use of such Contract Documents would have prevented the claim, judgment, suit, liability, damage, cost, or expense.

19. City reserves the right to deny a request to translate files.

AUTHORIZED ACCEPTANCE

by City

by Recipient

Signature

Signature (by officer)

Print Name and Title

Print Name and Title

Date

Date

Witness: _____

1.44 ANTI-IDLING POLICY

- A. This Special Provision is a copy of the City's Administrative Regulation #25 regarding the City's Anti-Idling Policy a copy of the City'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. It is our goal to protect and preserve the natural environment and improve air quality in the City of Portland. As a business partner of our City and responsible organization we will expect and greatly appreciate your assistance in this effort.

City of Portland Anti-Idle Policy

Purpose:

To inform all City employees of the need to eliminate unnecessary idling of vehicles in order to reduce the cost of City operations and to reduce emissions created by City vehicles. Our goal is to protect and preserve the natural environment and improve air quality in the City of Portland.

Policy:

It is the policy of the City of 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:

- 1) Idling is prohibited (with the limited exceptions listed below) when the ambient temperature is above 32 degrees F.
- 2) 10 minute maximum idle time limit when ambient temperature is 32 degrees F and below
- 3) Vehicles will not be left idling when the operator is out of the vehicle (with the limited exceptions listed below)

For the health and safety of operators, there will be occurrences when vehicles will be left running. Examples include protection from the elements or for the use of the vehicle safety features (including the use of air conditioning in street sweepers to keep dust out of the cab).

Exceptions:

Due to the emergency nature of some City operations, the following exceptions will apply to this policy:

- Emergency response vehicles when responding to an emergency
- Fire vehicles which must maintain onboard medication at a specific temperature
- Vehicles whose batteries may be discharged because of onboard electrical equipment (i.e. emergency lights, radar, computers, etc.)

Non-Compliance:

After a reasonable period of education about this new policy, employees will be subject to progressive discipline under AR 25 if they do not comply with this policy.

END OF SECTION

SECTION 01010 - SUMMARY OF WORKPART 1 - GENERAL1.1 DESCRIPTION

- A. The work includes the installation of sewer and storm drain pipe, catch basin and drain manhole structures, street construction, earthwork, dewatering, pedestrian and vehicular traffic control and associated work as shown on contract drawings and documents.

The work includes, but is not limited to:

Base Bid

1. The installation of approximately 1,224 linear feet (lf) of new gravity storm drain and sanitary sewer pipe, undrain pipe, installation of precast catch basins and manholes, sewer laterals, Portland Water District Water services and associated construction.
2. Street Improvements including areas of full width pavement removal and repaving and the reconstruction of bituminous driveway aprons, loaming and seeding the City Right of way within the project zone and the reconstruction of two pedestrian ramps per federal ADA requirements.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION3.1 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 temporary water, natural gas, electrical and telecommunications.
 2. The Contractor will be responsible for ensuring surface drainage collection is maintained and sewer services are provided to all properties without interruption unless approved by the Engineer.
- 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 City and Engineer, which shall provide for the orderly and efficient progression of construction.
 2. Access for local traffic and driveways will be maintained during construction.
 3. If any driveways or building entrances must be temporally impacted or closed, the Contractor notify the abutting property owners as required in the contract.

4. Contractor shall construct temporary ramps and facilities as required to maintain access handicap accessibility to building entrances impacted by the work.
5. 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.
6. Refer to the Special Provisions for additional requirements.

3.2 CONSTRUCTION SEQUENCE

- A. Refer to the Plans and Special Provisions for sequence requirements.

END OF SECTION

SECTION 01050COORDINATIONPART 1 - GENERAL1.1 DESCRIPTION

- A. The work includes construction in close proximity the Owner's 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 and 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 Portland:
 - 1. Contractor shall coordinate access, egress, detours and traffic control for the project with the Portland Police Department and Fire Department. The Contractor shall notify 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. The presence of Portland Police will be a determination made by the Traffic Engineer based on the contractors submitted traffic control plan. If Police are required (as determined by the City), the City will hire and reimburse them. The Police Department requires 48 hours notice for any Police detail onsite. Contractor shall coordinate all street and sidewalk closures at the weekly meetings.
 - 3. The Contractor shall be responsible for coordinating and maintaining public services to all public and private properties on or abutting the site.

1.3 UTILITY COORDINATION

Refer to the Supplemental Specifications 104.4.6 UTILITY COORDINATION and Specification Section 01200 PROJECT MEETINGS.

1.4 NOTIFICATION OF RESIDENTS

- A. Residents shall be notified by the Contractor sufficiently in advance of any construction affecting the resident's driveway to allow adequate time for removal of vehicles.
- B. 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

1.5 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

SECTION 01200PROJECT MEETINGSPART 1 - GENERAL1.1 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.)

MEETINGS

PART 3 - EXECUTION

3.1 MEETING SCHEDULE

- A. Except as noted below for Preconstruction Meeting, project meetings will be held monthly. Coordinate as necessary to establish mutually acceptable schedule for meetings.

3.2 MEETING LOCATION

- A. Weekly Meetings will be held at the Resident's construction trailer.
- B. Monthly Meetings will be held at the City Portland Public Works.

3.3 PRECONSTRUCTION MEETING

- A. Preconstruction meeting will be held 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, representatives of the various utility companies involved in the project and City officials. The City will advise other interested parties and request their attendance.
- B. It is the purpose of this meeting to inform the various agencies of the proposed work schedule, and to give them the opportunity of discussing any difficulties and of offering suggestions to the Contractor concerning his proposed schedule in order that full cooperation may be reached.
- C. At this time, the contractor will be required to submit a graphically illustrated schedule and a plan showing project activities.
- D. The contractor shall submit 3 days prior to the pre-construction meeting a detailed schedule showing the sequencing, critical path items, milestones and scheduling of the work. This schedule must show sufficient detail to insure compliance with the established complete dates above. Updates will be required as work progresses.
- E. 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.

MEETINGS

9. Rules and regulations governing performance of the Work, including funding/regulatory Agency requirements.
10. Procedures for safety and first aid, security, quality control, housekeeping, and other related matters.
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.
 8. Review status of change order requests and Work Directive Changes, RFIs.
 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

SECTION 01310CONSTRUCTION SCHEDULESPART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included: Within ten (10) days after the effective date of the Agreement between Owner and Contractor and at least (3) days prior to the project Pre-Construction Meeting, 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 road and sidewalk closures.
 - 4) Proposed dates for force main shut downs to make connections.
 - 5) Proposed sequencing and dates of construction for sanitary sewer and trunkline construction.
 - 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. Installation of storm drain structures
 - b. Replacement of water mains
 - c. Pavement overlay
 3. Show the projected percentage of completion for each item of work as of the first day of each month.
- 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

SECTION 01340SUBMITTALSPART 1 - GENERAL1.1 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:
 - 1. Special Provisions: Section 01000.
 - 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 all Shop Drawings electronically. If they can't be submitted electronically then submit a minimum of one (1) copy of Shop Drawings and approved data. The Engineer will retain a copy (for Owner's, Engineer's and Field Representative's files) and send a copy to the Contractor for distribution to subcontractors, suppliers and manufacturers. 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.

TALS

- 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) 22 inches by 34 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,

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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.
 - 5. Notification of deviations from Contract Documents.
 - 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

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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 203.25 Granular Borrow.
 - b. Item 203.35 Crushed Stone
 - c. Item 304.10 Aggregate Subbase Course.
 - d. Item 304.15 Aggregate Base Course.
 - e. Underdrain Backfill Sand MDOT 703.22
 - 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. Item 604.131, 604.132, 604.134 Catch Basins.
 - b. Item 604.15, 604.153, 604.154, 604.156 Manholes.
 - 2. Submit shop drawing for precast manholes, 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 403.207 Hot Mix Asphalt 19.0mm.
 - b. Item 403.209 Hot Mix Asphalt 9.5mm.
 - 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 and fittings:**

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1. Provide Submittals for the following items:
 - a. Item 603 PVC SDR 35 Pipe.
 - b. Item 633 Sewer Laterals
 - c. Item 603 Hi Density Polyethylene Pipe and Concrete Pipe
 - d. Item 632.10 ,632.12 Wyes
 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 608.08 Concrete Sidewalks and 608.081 Driveway Aprons
 1. Submit a concrete mix design certification indicating compliance with the specifications as specified in Section 608 and 502 of the specifications Concrete Related Materials.
- F. Detectable Warning Panels:
1. Provide Submittals for the following item:
 - a. Item 608.26 Detectable Warning Panels.
 2. Provide manufacturers' product data confirming products meet specifications.
- G. Loam Seed and Mulch:
1. Provide Submittals for the following item:
 - a. Item 615.072 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.
- H. Landscaping:
1. Provide Submittals for the following items:
 - a. Item 621 Trees
 - b. Item 670 Landscape Plants.
 2. Submit plant list identifying number of plants botanical and common name and size.
- I. Pavement Marking:
1. Provide submittals for the following item:
 - a. Item 627.1Pavement Marking.
 2. Submit manufactures data for MDOT paint 708.03.
- J. 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 Pipe and Structure (Section 603 and 604) installation:
 - i. Submit Manufacturers product data for geotextile fabrics.
 - c. Geotextile for Riprap outfall protection:
 - i. Submit Manufacturers product data for geotextile fabrics.
 - d. Geotextile for Cay Liner (Section 904):

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- i. Submit Manufacturers product data for geotextile fabrics.

K. Esplanade Box Filters

1. Shop drawings for the EBF system including:
 - a. Vault
 - b. Biofiltration soil mixture
 - c. Tree
 - d. Accessory equipment.

Drawings shall include principal dimensions, placement of internal components, location of piping and unit foundation.

2. Manufacturer shall submit the following guides and manuals:
 - a. Literature describing the materials in sufficient detail, including parts lists, materials, dimensional drawings and details of construction to indicate full compliance with this Section.
 - b. Design, Operation, and Performance Guide
 - c. Installation, Activation, and Planting Guide
 - d. Maintenance Manual

END OF SECTION

SECTION 01370SCHEDULE OF VALUESPART 1 - GENERAL1.1 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 City's work.

- 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. Separate applications for progress payment are to be prepared for work by the City and water main replacements by the PWD.

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 01380CONSTRUCTION PHOTOGRAPHSPART 1 - GENERAL1.1 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 and video electronic files on CD ROM, DVD or on USB "thumb drive" 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 01400QUALITY CONTROLPART 1 - GENERAL1.1 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 603 – Pipe, Culverts and Storm Drains
- G. Standard and Supplemental Specifications Section 604 – Manholes, Inlets and Catch Basins.

1.3 QUALITY CONTROL

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. The Contractor shall be responsible at all times for maintaining quality assurance during performance of his work. Particular attention to compaction shall be paid during backfilling operation. Strict adherence to Section 203.11 and 304.04 of the Maine Department of Transportation Standard Specifications will be required for all subgrade and subbase/base 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 SOIL DENSITY TESTING

- A. In-place density tests of the backfill material will be conducted by an independent testing laboratory. The amount and frequency of testing will be determined at the time of construction and as indicated in the supplemental specifications. .
- B. The use of an independent testing laboratory, by the Contractor, shall receive prior approval from the Engineer. Payment will be made under Items 654.08 - Trench Density Test, 654.09 - Roadway Density Test or 654.10 - Embankment Density Test.

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 Section 401 HOT MIX ASPHALT using Quality Control Method B.

END OF SECTION

SUPPLEMENTAL SPECIFICATIONS

SECTION 101 - CONTRACT INTERPRETATION

Scope of Section

This section contains abbreviations, definitions, and general rules of interpretation found in the Standard Specifications. The City Portland has 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 City 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 City Engineer, City of Portland, Maine, Public Works Department, acting directly or through his or her duly authorized representatives, who are responsible for the design of the project.

Closeout Documentation

Omit “A letter stating the amount of monies paid to DBE subcontractors to meet Contract DBE goals.”

Commissioner

The definition in the Standard Specifications shall be deleted and replaced with the following: Commissioner shall mean the Director of Public Works, City of Portland, Maine.

Department

The definition in the Standard Specifications shall be deleted and replaced with the following: Department shall mean the Department of Public Works, City of 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:

202.011 Depth of Removal

All structures and obstructions, with the exception of manholes and catch basins, see section 202.05, shall be removed to a depth as required to allow construction of the project as presented in the construction documents. In roadway areas, removal shall be to a depth below all subbase gravel. In areas of utility piping or structures, removal will be to a depth sufficient to allow placement of said piping and structures, including supportive materials such as bedding layers, antifloatation slabs and foundations. Removal below subgrade depth shall only be performed at the direction of the City.

202.03 Removing Existing Superstructure, Structural Concrete, Railings, Curbs, Pipes, Sidewalks and Bridges

This section is modified by adding the following sentence to the first paragraph: All granite curbing, tipdowns, curb inlets, sidewalk brick, and cobblestones removed and not reused in construction of the proposed project shall be delivered to the City stockyard as directed and considered incidental.

The Contractor shall be responsible for the removal without damage, cleaning and stacking at the City Stockyard, all straight and curved curbing, terminal sections and curb corners which are designated to be replaced with new curb and shall be incidental to cost of removing existing curbing paid under Item 202.091.

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.

The Contractor shall be responsible for cleaning and clearly numbering/identifying the existing location of all curbing designated to be removed and reset and shall be incidental to the cost of removing the existing curbing paid under pay item 202.091.

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.

Removal of existing structural concrete, reinforced concrete, plain concrete, excavated structures, manholes, catch basins, mortared stone masonry, concrete masonry, wooden timbers/piles and any other structural elements encountered during construction are incidental to the contract and cost of construction.

Removal of existing storm drains, sewer pipes or other pipe structures, backfilling and all associated work shall be considered incidental to the costs of pipe installation. No extra payment will be made.

202.04 Removing Portland Cement Concrete Pavement

This section is modified by adding the following sentence: This work shall include the removal of the existing cobblestone pavers beneath the bituminous pavement and delivery to the City Stockyard.

202.05 Removing Manholes or Catch Basins

The first sentence of this subsection shall be modified by deleting “of at least 600 mm [2 feet] below subgrade” and substituting the following: “required for removal of entire manhole, structure or catch basin.” Associated work shall be considered incidental to the costs of new structure installation. No extra payment will be made.

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 preparation of a butt joint will not require saw cutting.

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.

202.061 Removing Pavement Surface

The milled surface shall have a uniform texture and provide acceptable rideability for vehicles. Should resurfacing be delayed or the resulting milled surface be unsatisfactory for any reason, a bituminous leveling course or temporary pavement may be required. The Contractor shall clean the milled surface and surrounding area of all loose material prior to use by traffic. Pavement milling shall be considered incidental to the costs of paving.

202.064 Temporary Gate and Fence Relocation

When it is necessary to temporarily remove fencing designated to remain or to be re-set, the fencing shall be carefully removed, stockpiled protected and reset by the Contractor at their expense in as good a condition as it was originally. Where noted on the plans temporary fencing shall be provided at locations where existing fence is temporarily removed.

202.065 Remove Existing CSO Structure

Contractor shall remove and dispose of an existing cast in place concrete combined sewer overflow vault located at the east end of Mackworth Street. Contractor shall completely remove cast in place concrete walls and floor.

The cavity created by vault removal shall be backfilled to the existing roadway subgrade elevation with granular borrow placed in lifts not to exceed 8” loose thickness, placed and compacted in accordance with the Standard Specifications Paragraph 203.11 Construction of Earth Embankment- Layer Method.

202.07 Method of Measurement

Saw cutting pavement and roadway butt joints are incidental to the contract pay item 202.20 and shall not require measurement.

Pavement Butt Joints are incidental to the contract and include the 1-foot hand grind associated with trench patches as well as the hand grinds at the intersection of new street pavement with existing.

202.08 Basis of Payment

The accepted quantity of removal of existing bituminous pavement or pavement surface shall be at the contract unit price per square yard which price will be full compensation for removal of the pavement

surface by a milling operation excavation or other method, saw cutting, 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. Pavement surface removal shall occur, as indicated on the Contract Drawings.

Removal of existing sidewalk, driveway and curbing, including subbase, shall be incidental to the applicable sidewalk or driveway pay items.

Separate payment for manhole and catch basin removal shall be made whenever the center of the structure to be removed is eight feet or more from the center of a new manhole or catch basin. If the center of a manhole or catch basin to be removed is less than 8 feet from the center of a new structure, no separate payment will be made for manhole or catch basin removal, in which case the cost of manhole or catch basin removal shall be considered incidental to the cost of the new structure.

Separate payment for pipe removal, including removal of existing concrete cradle, shall be made whenever a pipe called out for demolition is outside the horizontal limits of excavation for a proposed pipe or structure. If the pipe to be removed is located within the horizontal limits of the trench excavation for the proposed pipe or structure, no separate pavement will be made for removal of existing pipes, in which case the cost of the pipe removal, existing concrete cradle removal, backfilling and all associated work shall be considered incidental to the cost of the new pipe or structure installation.

Trench restoration areas in Brighton Avenue shall be milled 2" and resurfaced per project details after the once freeze thaw cycle has occurred. Milling for this work shall be incidental to the contract and no additional payments will be made.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
202.20 Remove Bituminous Concrete Pavement	Square Yard

SECTION 203 - EXCAVATION AND EMBANKMENT

The provisions of Section 203 of the Standard Specifications shall apply with the following additions and modifications:

203.01 Description:

The second sentence of the first paragraph shall read: "All excavation shall be classified as common excavation, contaminated soils or rock excavation, as hereby defined, unless otherwise classified as incidental to another pay item as described in the project specifications.

The second sentence of Paragraph (a) shall be modified by deleting "when each is less than 2 yd³ in volume."

Paragraph (b) shall be modified to read by deleting "each having a volume of 2 yd³ or more and substituting the following: "each having a volume of ½ yd³ or more".

Paragraph (d) shall be added to read: Soils encountered during construction containing petroleum or chemical odors, soil staining, ash, municipal solid waste asbestos containing material and/or other hazardous waste, and/or discolored groundwater, form or sheen on groundwater maybe considered a contaminated soil as determined by the Engineer. If the contractor encounters suspected contaminated soils, the Engineer shall be notified and soils will be sampled or field screened to evaluate the level of potential impact and to establish handling/remedial requirements. If contaminated soils are encountered, the contractor shall stockpile the material (if approved by the engineer) or stop excavation activities until the environmental impact and disposal requirements are determined. The contractor shall not be entitled to any extra compensation for delays caused by the excavation of suspected and/or contaminated soils. Any delays shall be considered incidental to the costs of construction. If soils are determined to be contaminated, the contractor shall handle the material in accordance with environmental regulations and transport the material to Riverside Reclamation Center on Riverside Street in Portland, Maine for disposal. This work will be paid for under pay item 203.20.

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 Explosives:

The Contractor shall keep explosives on the site only in such quantity as may be needed for the work under way and only during such time as they are to be used. He shall notify the Engineer, in advance, of his intention to store and use explosives. Explosives shall be stored in a secure manner and separate from all tools. Caps or detonators shall be safely stored at a point over

100 feet distant from the explosives. When the need for explosives has ended, all such materials remaining on the work shall be promptly removed from the premises.

The Contractor shall observe all municipal ordinances and State and Federal laws relating to the transportation, storage, handling, and use of explosives. In the event that any of the above mentioned laws, ordinances, or regulations require a licensed blaster to perform or supervise the work of blasting, said licensed blaster shall, at all times, have his license on the work and shall permit examination thereof by the Engineer or other officials having jurisdiction.

203.042 Blasting Precautions:

All operations involving explosives shall be conducted with all possible care to avoid injury to persons and property. Blasting shall be done only with such quantities and strengths of explosives and in such manner as will break the rock approximately to the intended lines and grades and yet will leave the rock not excavated in an unshattered condition. Care shall be taken to avoid excessive cracking of the rock upon or against which any structure will be built, and to prevent injury to existing pipes or other structures and property above or below ground. Rock shall be well covered with logs or mats, or both, when required. Sufficient warning shall be given to all persons in the vicinity of the work before a charge is exploded.

All blasting shall be completed within a distance of 50 feet before any portion of a masonry structure is placed or any pipe is laid.

Any site where electric blasting caps are located or where explosive charges are being placed or have been placed shall be designated as a "Blasting Area". A "Blasting Area" within three hundred (300) feet of any traveled way shall be marked by approved signs with information similar to the following:

"BLASTING AREA - TURN OFF RADIO TRANSMITTERS"

and on the reverse side:

"END OF BLASTING AREA"

The Contractor shall notify each public utility company having structures in proximity to the site of the work of his intention to use explosives and such notice shall be given sufficiently in advance to enable the companies to take such steps as they may deem necessary to protect their property from injury. Such notice shall not relieve the contractor of responsibility for any damage resulting from his blasting operations.

All persons within the danger zone of blasting operations shall be warned by the Contractor, and no blasting shall be done until the zone is cleared. Flagmen, furnished by the Contractor, shall be so stationed as to stop all approaching traffic during blasting operations.

The Contractor shall be liable for all damages to persons or property caused by blasting or explosions, or arising from neglect to properly guard and protect the excavations and all portions of the work, and he shall wholly indemnify the Owner against all claims on such account. No compensation will be allowed the Contractor in any event, or under any circumstances, for loss incurred by him or arising from his neglect to fully comply with these requirements.

203.043 Excess Rock Excavation:

If rock is excavated beyond the limits of payment indicated in the drawings, specified, or authorized in writing by the Engineer, the excess excavation, whether resulting from over-breakage or other causes, shall be backfilled, by the Contractor at no additional cost to the City, as specified below in this section.

In pipe trenches, excess excavation below the elevation of the top of the bedding, cradle, or envelope shall be filled with material of the same type, placed and compacted in the same manner, as specified for bedding, cradle, or envelope. Excess excavation above said elevation shall be filled with earth as specified in the specifications at no additional cost to the City.

203.044 Blasting Records:

The Contractor shall keep and submit to the Engineer an accurate record of each blast. The record shall show the general location of the blast, the depth and number of drill holes, the kind and quantity of explosives used, and other data required for a complete record.

203.045 Shattered Rock:

If the rock below normal depth is shattered due to drilling or blasting operations of the Contractor, and the Engineer considers such shattered rock to be unfit for foundations, the shattered rock shall be removed and the excavation shall be backfilled with concrete as required, except that in pipe trenches crushed stone may be used for backfill, if approved. All such removal and backfilling shall be done by the Contractor, at no additional cost to the City.

203.046 Preparation of Rock Surfaces:

The Contractor shall remove all dirt and loose rock from the designated areas and shall clean the surface of the rock thoroughly, using steam to melt snow and ice, if necessary. Water in depressions shall then be removed as required so that the whole surface of the designated area can be inspected to determine whether seams or other defects exist.

The surface of rock foundations shall be left sufficiently rough to bond well with the masonry and embankments to be built thereon; and, if required, shall be cut to rough benches or steps.

Before any masonry or embankment is built on or against the rock, the rock shall be scrupulously freed from all vegetation, dirt, sand, clay, boulders, scale, excessively cracked rock, loose fragments, ice, snow, and other objectionable substances. Picking, barring, wedging, streams of water under sufficient pressure, stiff brushes, hammers, steam jets, and other effective means shall be used to accomplish this cleaning. All free water left on the surface of the rock shall be removed.

203.047 Removal of Boulders:

Piles of boulders or loose rock encountered within the limits of earth embankments shall be removed to a suitable place of disposal.

203.048 Disposal of Excavated Rock:

Excavated rock may be used in backfilling trenches subject to the following limitations:

1. Pieces of rock larger than permitted under the section titled Excavation and Embankment: Section 203.01, shall not be used for this purpose.
2. The quantity of rock used as backfill in any location shall not be so great as to result in the formation of voids.
3. Rock backfill shall not be placed within 18-inches of the surface of the finish grade.

Surplus excavated rock shall be disposed of as specified in Section 203.06, "Waste Areas".

203.049 Backfilling Rock Excavations:

When rock has been excavated and the excavation is to be backfilled, the backfilling above normal depth shall be done as specified under the "Excavation and Embankment, Section 203". If material suitable for backfilling is not available in sufficient quantity from other excavations, the Contractor shall furnish suitable material from outside sources, under pay item 203.25 "Granular Borrow".

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.

If the Contractor proposes to permanently place or permanently stockpile any surplus soil and rock, including soil or rock unsuitable for trench backfill or embankment construction, on property in the City of Portland, the Contractor or property owner shall obtain any Site Plan Permit required from the City Planning Authority or any Fill Permit required from the MaineDEP or U. S. Army Corps of Engineers, before the surplus soil and rock is permanently placed or stockpiled. The Contractor shall provide copies of the required permits to the Engineer. Stockpile locations shall meet the applicable setback requirements in the City Land Use Code.

2. Temporary Stockpiles:

If the contractor proposes to temporarily stockpile any surplus soil and rock, including soil or rock unsuitable for trench backfill or embankment construction, in the City of Portland, the contractor shall obtain approval for each stockpile location from the Engineer. Stockpile locations shall meet the applicable setback requirements in the City Land Use Code.

3. Trees, Stumps and other Material, Excepting Granular Material:

The disposal of trees, stumps, shrubs and brush shall be the responsibility of the Contractor. If the disposal site is within private property, the Contractor shall be required to obtain written permission from the landowner for use of the disposal site for the above mentioned materials. A copy of the permission and evidence of a fill permit, if required, shall be provided to the Engineer. The Contractor or landowner shall obtain a dumping permit at 55 Portland Street.

4. Surplus Cobblestones, Bricks and Granite Curb Stone:

Cobblestones, bricks and curbing removed during construction and not incorporated into the project shall remain the property of the City and shall be cleaned to remove all excess granular material there from and hauled to a storage area or project site in the City, 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:

Test pits will be measured by the vertical foot.

203.19 Basis of Payment:

This subsection shall be amended by the addition of the following paragraph:

The accepted quantity of test pit excavation will be paid for at the contract unit price per vertical foot. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for excavation, test excavation, backfilling, pavement replacement, disposal of materials and the protection of the utilities.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
203.20	Common Excavation	Cubic Yard
203.25	Granular Borrow	Cubic Yard
203.28	Test Pit Excavation	Vertical Foot
203.35	Crushed Stone 703.31 (Overdepth)	Cubic Yard

SECTION 206 - STRUCTURAL EXCAVATION

The provisions of Section 206 of the Standard Specifications shall apply with the following additions and modifications:

206.01 Description:

For Structural Earth Excavation, only that trench excavation for pipe below the established trench profile as indicated on the Typical Trench Detail shall be included under this section. Trench excavation to the established profile shall be considered as incidental to the appropriate pipe and structure item. For Structural Rock Excavation, Pay limits for rock excavation in trenches shall be limited to the Pay width dimensions indicated on the details. For structures, the pay limits shall be limited to the actual structure width plus 24" each side of the structure and 24" below the bottom of structure.

Paragraphs (a) and (c) shall read:

- (a) Drainage and Minor Structures shall include sewer and storm drainage pipes, culverts, catch basins, manholes, box conduit, diversion structures, vault structures and other drainage structures. Removal of existing storm drains, sewer pipes or other pipe structures, reinforced concrete, plain concrete, concrete structures, backfilling, base and subbase gravels and all associated work shall be considered incidental to the costs of construction. No extra payment will be made.

- (c) Special Backfill. The Contractor shall furnish, place and compact special backfill material as indicated on the plans or as directed and herein specified.
The special backfill shall be a granular or common backfill material and shall meet the requirements of Section 703.06 (b) Aggregate Subbase - Sand (Type E) of the Supplemental and Standard Specifications.

The special backfill shall be spread in layers of uniform thickness not exceeding eight inches (8") before compaction and moistened and allowed to dry. Then it shall be thoroughly compacted by means of suitable power-driven tampers or other power driven equipment to a uniform density of 95% of maximum density.

206.02 Construction Methods:

The fourth (4th) paragraph of the Standard Specifications shall be modified to read as follows:

When the foundation is to be placed on solid rock, the rock shall be excavated to a firm surface, either level, stepped or serrated. When solid or disintegrated rock or boulders are encountered, the rock shall be excavated to a minimum depth of twenty-four inches (24") below the bottom of the proposed pipe or structure, unless otherwise indicated on the plans or ordered. The twenty-four inches (24") level below the bottom of the proposed pipe shall be defined as "Established Trench Profile".

206.04 Method of Measurement:

Paragraph (a) of the Standard Specifications shall be deleted and the following paragraphs added;

When Structural Rock is encountered for sewer and storm drainage pipes, the quantity to be measured for payment will be the amount actually excavated to the "Established Trench Profile" as defined in the fourth (4) paragraph of Section 206.02 of the Supplemental Specifications provided the maximum allowable horizontal dimensions do not exceed the payment limit.

When Structural Rock is encountered for catch basins, manholes, box conduits, diversion structures, vault structures and other drainage structures, other than sewer and storm drainage pipes and culverts, the quantity to be measured for payment will be the amount actually excavated to the "Established Trench Profile", provided the maximum allowable horizontal dimensions do not exceed those bounded by vertical surfaces twenty-four inches (24") outside the lines of the base as shown on the plans.

206.05 Basis of Payment:

When material is needed for trench backfill below the established trench profile as indicated on the plans or as ordered, this material shall be crushed stone and paid for under Pay Item 203.35.

Crushed Stone for Pipe Bedding shall be backfilled as indicated on the plans or as ordered, and shall be incidental to the cost of the pipe.

"Drag Boxes" if utilized by the Contractor will be allowed; however, no payment will be made for any excess excavation or backfill material used beyond the payment limit as shown on the Typical Trench Detail.

Add the following paragraph:

Excavated materials suitable for backfill shall be used to backfill normal excavations incidental to this section. Disposal of surplus excavated materials shall be in accordance with Section 203.06, Waste Areas.

Protection of existing trees, shrubs, utility poles, structures, and utilities shall be considered incidental to the pay item.

<u>Pay Item</u>	Payment will be made under:	<u>Pay Unit</u>
206.061	Structural Earth Excavation Drainage and Minor Structures (Overdepth)	Cubic Yard
206.07	Structural Rock Excavation	Cubic Yard

SECTION 304 - AGGREGATE BASE AND SUBBASE COURSE

The provisions of Section 304 of the Standard Specifications shall apply with the following additions and modifications:

304.01 Description

This work shall consist of furnishing and placing one or more courses of aggregates on a prepared surface in accordance with the specifications in reasonably close conformity with the lines, grades, thickness and typical cross sections, as shown on the plans or established not included in other project pay items. All gravel and associated materials for roadway, pipe and trial improvements is incidental to the related pay item.

304.02 Aggregate:

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 contractor shall rake out any stones greater than 2" in size from the surface of the Type B aggregate base course prior to placing the base course of pavement.

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.

304.07 Basis of Payment:

Placement of the aggregate base and subbase course, associated with the installation of proposed storm drain and/or sanitary sewer on all streets, shall be paid for under pay items 304.10 – Aggregate Subbase Course – Gravel Type "D" and 304.09 – Aggregate Base Course, Crushed Type "B".

The costs for laboratory testing and source documentation shall be incidental to providing Type "B" and Type "D" gravel. The cost for all failing tests shall be the responsibility of the contractor.

Temporary gravels may be required to backfill trenches up to existing pavement grade prior to roadway reconstruction. No additional payment will be made for the placement of temporary gravels on this project.

<u>Pay Item</u>	Payment will be made under:	<u>Pay Unit</u>
304.09	Aggregate Subbase Course - Gravel, Type "B"	Cubic Yard
304.10	Aggregate Base Course – Crushed, Type "D"	Cubic Yard

SECTION 401 – PLANT MIX PAVEMENTS – GENERAL

The provisions of Section 401 of the "State of Maine, Department of Transportation, Standard Specifications, November 2014 Edition" shall apply with the following additions and modifications:

401.11 Preparation of Existing Surfaces

All streets to be paved shall be swept of all debris (sand, grass, etc.) prior to paving. Any grass or other vegetation growing in the street shall be removed prior to paving. Tack coat shall be applied per Section 409.

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 ½-inches deep in residential streets and 2-inches deep in arterial streets in order to provide a vertical butt joint. The butt joint shall also be tack coated.

All streets to be shimmed shall be reviewed with Engineer 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 under this section shall be considered incidental to the related contract pay items.

SECTION 403 - HOT MIX ASPHALT PAVEMENT

The provisions of Section 403 of the "State of Maine, Department of Transportation, Standard Specifications, November 2014 Edition" shall apply with the following additions and modifications:

403.03 General

This section shall include Hot Mix Asphalt – 19.0 mm and 9.5mm.

Temporary trench patch asphalt (Hot Mix Asphalt – 19.0mm) shall be placed in all street trenches if the Contractor is not going to be actively working that area at the site for more than 16 hours (for example – over a weekend). Temporary trench patch asphalt may also be required in the areas specified, if the weather conditions do not meet MaineDOT specifications for placing pavement and it is near the end of the regular paving season. All temporary pavement shall be removed and replaced with final pavement that is placed in accordance with the specifications.

403.04 Method of Measurement

The method of measurement for Hot Mix Asphalt – 19.0mm and 12.5mm shall be measured by the ton.

403.05 Basis of Payment

The accepted quantity of bituminous pavement will be paid for at the contract unit price complete in place. This price shall include fine grading, hot bituminous pavement and all labor, materials and equipment necessary to complete the work.

Temporary trench patch bituminous asphalt will be incidental to the cost of the pipe.

The accepted quantity for Hot Mix Asphalt – 19.0mm, 12.5mm and 9.5mm shall be measured by the ton. This price shall include saw-cutting and removing existing pavement, fine grading, tack coat, and all labor, materials and equipment necessary to complete the work.

<u>Pay Item</u>	Payment will be made under:	<u>Pay Unit</u>
403.207	Hot Mix Asphalt – 19.0 mm	Ton
403.208	Hot Mix Asphalt – 12.5mm	Ton
403.210	Hot Mix Asphalt – 9.5mm	Ton

SECTION 409 - BITUMINOUS TACK COAT

The provisions of Section 409 of the Standard Specifications shall apply with the following additions or modifications:

409.07 Application of Bituminous Material

The rate of application shall be 0.02 gallons per square yard. During application, care shall be taken to assure curbing shall not be discolored. Curbing discolored by tack coat shall be cleaned by CONTRACTOR at no cost to the CITY.

409.08 Method of Measurement

The application of the bituminous tack coat shall be incidental to the application of Hot Mix Asphalt Pavement and shall require no measurement or payment.

409.09 Basis of Payment

The payment for this work shall be incidental to Section 403 - Hot Mix Asphalt Pavement

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:

This work shall consist of the construction of storm drains, 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.

Where noted on the plans, the contractor shall use the specific pipe material indicated.

When the alternative of pipe material is listed in the Proposal, the Contractor shall signify his choice of pipe to be used by inserting his mark in the proper space provided. Contractor is responsible for all associated work, connections and appurtenances for the pipe selection. This shall be considered incidental to the pay item.

The Contractor shall install locating/warning tape over the centerline of all sanitary, storm, and combined sewer pipes including main lines, service leads and catch basin laterals 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 Sewer Service Location and submitted to the City upon completion of the work.

All connections shall be made in conformance with the Plumbing Code of the City of Portland and the Maine State Plumbing Code.

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:

Reinforced Concrete Pipe (RCP): Pipe shall meet the following requirements.

0. Stand. Spec 706.02.

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".
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

Smooth Bore High Density Polyethylene (HDPE) Pipe: Pipe shall meet the requirements of Standard Specifications Section 706.06 with the additions and modifications.

1. 12" through 18" pipe shall have a smooth interior and annular exterior corrugations.
2. 12" through 18" dual wall pipe shall meet ASTM F2881 or AASHTO M330
3. Polypropylene compound for pipe and fitting production shall be impact modified copolymer meeting the material requirements of ASTM F2881, Section 5 and AASHTO M330, Section 6.1.
4. Pipe shall be joined with a gasketed integral bell and spigot joint meeting the requirements of ASTM F2881 or AASHTO M330.
5. 12" through 18" joints shall be watertight according to the requirements of ASTM D3212. Spigots shall have gaskets meeting the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.
6. 12" through 18" diameters shall have an exterior bell wrap installed by the manufacturer.
7. Fittings shall conform to ASTM F2881 or AASHTO M330. Bell and spigot connections shall utilize a welded or integral bell and valley or inline gaskets meeting the watertight joint performance requirements of ASTM D3212.
8. Corrugated couplings shall be split collar, engaging at least two (2) full corrugations.
9. Acceptable Manufacturers include:
 - a. Advanced Drainage Systems (HP Storm Pipe)
 - b. Or equal to above

High Density Polyethylene (HDPE) SaniTite Pipe: Pipe shall meet the requirements of Standard Specifications Section 706.06 with the additions and modifications.

1. 12" through 30" (300 to 750mm) SaniTite HP dual pipe shall have a smooth interior and annular exterior corrugations; 30"-60" SaniTite HP triplewall pipe shall have smooth interior and exterior surfaces with annular inner corrugations.
2. 12" through 30" dual wall pipe shall meet ASTM F2736
3. 30" through 60" triple wall pipe shall meet ASTM F2764
4. Pipe shall be joined with a gasketed integral bell & spigot joint meeting the requirements of ASTM F2736.
5. 12" through 60" shall be watertight according to the requirements of ASTM D3212, with the addition of a 15 psi pressure requirement. Spigot shall have two gaskets meeting the

requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gaskets are free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.

6. 12" through 60" diameters shall have a reinforced bell with a polymer composite band installed by the manufacturer
7. Fittings and connections shall provide a watertight connection according to the requirements of ASTM D3212. Gaskets, when present, shall meet ASTM F477
8. Acceptable Manufacturers include:
 - a. Advanced Drainage Systems
 - b. Or equal to above.

603.013 Construction Requirements:

Keep existing sewers and drains in operation. If existing sewers and drains are disturbed, provide for maintenance of such flows until work is completed. Do not allow raw sewage to flow or stand on ground surface or in an excavation.

603.0131 Reinforced Concrete Storm Drain Pipe:

Reinforced concrete pipe may be used for storm drain applications.

Reinforced concrete pipe shall be obtained only from a manufacturer of established good reputation in the industry. The pipe shall have a smooth and even interior surface, free from projections, indentations, or irregularities of any kind.

The joint shall be such that when joined the pipes will form a continuous and uniform line without projections, off-sets or irregularities and be capable of satisfying the specified leakage requirements.

Pipes shall be joined with rubber or rubber type gaskets that conform to the requirements established in ASTM Designation 443-67.

Each length of pipe shall be provided with proper ends made either of concrete formed on machined rings to ensure accurate joint surfaces or of metal rings. The diameters of the joints surface, depended upon to compress the gasket, shall not vary from the theoretical diameters by more than 1/16 inch. The joint shall be sealed by the rubber gasket so that the joint will remain tight under all conditions of service.

The rubber gasket shall be applied in accordance with the manufacturer's recommendations.

After the pipes are aligned in the trench and are ready to be jointed, all joint surfaces shall be cleaned. Immediately before jointing the pipe, the inside surface of the groove shall be thoroughly lubricated with a recommended lubricant. Pipe shall then be coupled immediately by carefully pushing each pipe into place without damage to pipe or gasket. The position of the gasket in the joint shall then be inspected to be sure it is properly put together and is tight.

Pipes shall be coupled by any suitable arrangement of come-along, winch, jack, or other power equipment that can exert sufficient force to couple pipe to its tightest position.

All RCP pipe where the pipe joint gap is 0.5-inches wide or more shall be sealed on the insides with cement mortar. Cement mortar if used shall be applied by trowel and the joint shall be thoroughly filled and finished smoothly with the inside surface of the pipe.

All pipe thirty-six inches in diameter or larger shall be sealed on the inside with cement mortar or with guniting by the grout-weld method using a pneumatic machine of the Nicholson, Bondactor, or equal type. Cement mortar if used shall be applied by trowel and the joint shall be thoroughly filled and finished smoothly with the inside surface of the pipe. The grout-weld seal shall be applied only by experienced and skilled workmen in accordance with the instructions of the manufacturers of the machine.

The pipe shall be laid accurately to line and grade. Pipe bedded in compacted crushed stone shall not be supported on blocking, wedges, brick, or anything except the bedding material. Pipe on concrete cradle shall be supported on solid concrete blocks or precast concrete saddles which become part of the completed cradle.

Each length of pipe shall be shoved home against the pipe previously laid, and held securely in position. Joints shall not be "pulled" or "cramped". Holes provided for jointing shall be filled and compacted.

Pipe from which a core has been cut and the resulting hole repaired, shall be placed with the cored hole located forty-five degrees above or below the horizontal centerline of the pipe.

To prevent the entrance of earth and other materials when pipe laying is not actually in progress, the open ends of pipe shall be closed by suitable temporary bulkheads. The Contractor shall take all necessary precautions to prevent floatation of the pipe because of flooding of the trench. If water is in the trench when work is resumed, the bulkheads shall not be removed until the danger of earth and other materials entering the pipe has passed.

All pipe joints and structures shall be made water tight. There shall be no visible leakage, spurting or gushing of water, sand, silt, clay or soil of any description entering the pipe lines at the joints or structures. Where there is evidence of water or soil entering the pipeline, connecting pipes or structures, defects shall be repaired.

603.0132 SDR 35 Poly Vinyl Chloride (PVC) Gravity Sewer and Drain Pipe and Fittings:

PVC pipe may be used for sanitary sewer and storm drain applications.

Open ends of pipe shall be closed by suitable temporary bulkheads to prevent entrance of earth and other materials when pipe laying is not in progress. The Contractor shall take all necessary precautions to prevent floatation of the pipe as a result of the water in the trench.

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.

All PVC Gravity Pipe SDR 35 or equal supplied shall conform to all aspects of ASTM specification D3034-73A and/or ASTM Spec. F789 for PVC sewer pipe, joints and fittings. Joints shall be rubber gasketed "Bell and Spigot" type. Installation of materials shall be as suggested in ASTM D2321. Minimum "pipe stiffness" at 4% deflection shall be 46 psi for all sizes when tested in accordance with ASTM D2421.

It is the responsibility of the Contractor to assure that the trench and the backfill around the pipe has been compacted sufficiently to limit deflection in the pipe to no more than 4%. All flexible pipe installed under this contract shall be tested by a "go-no-go" mandrel permitting no greater than 4% deflection. Testing of the pipe shall be done in the presence of an Engineer. The Engineer shall be given a minimum of 24 hour advance notice before testing is to take place. All pipe not passing the 4% deflection limit test shall be removed and replaced at no additional cost to the City.

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.

603.0313 Smooth Bore High Density Polyethylene (HDPE) Storm Drain Pipe and Fittings:

Smooth Bore High Density Polyethylene (HDPE) dual wall (HP Storm Pipe or equal) may be used for storm drain applications and shall not be used for sanitary sewer applications.

Installation shall be in accordance with ASTM D2321 and the manufacturers installation guidelines. 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.

It is the responsibility of the Contractor to assure that the trench and the backfill around the pipe has been compacted sufficiently to limit deflection in the pipe to no more than 4%. All flexible pipe installed under this contract shall be tested by a "go-no-go" mandrel permitting no greater than 4% deflection. Testing of the pipe shall be done in the presence of an Engineer. The engineer shall be given a minimum of 24 hour advance notice before testing is to take place. All pipe not passing the 4% deflection limit test shall be removed and replaced at no additional cost to the City.

During loading, transportation and unloading, every precaution shall be taken to prevent injury to the pipe. No pipe shall be dropped from cars or trucks, or allowed to roll down slides without proper retaining ropes. During transportation each pipe shall rest on suitable pads, strips, skids or blocks securely wedged or tied in place. Any pipe damaged shall be replaced. 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.

603.0134 High Density Polyethylene (HDPE) SaniTite Pipe Gravity Sewer Drain Pipe and Fittings:

SaniTite pipe may be used for sewer line applications.

The pipe shall be ADS SaniTite High Density Polyethylene (HDPE) pipe or approved equal and installed in accordance with the manufacturer's recommendations.

High Density Polyethylene (HDPE) SaniTite pipe may be used for sewer applications.

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 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.

It is the responsibility of the Contractor to assure that the trench and the backfill around the pipe has been compacted sufficiently to limit deflection in the pipe to no more than 4%. All flexible pipe installed under this contract shall be tested by a "go-no-go" mandrel permitting no greater than 4% deflection. Testing of the pipe shall be done in the presence of an Engineer. The engineer shall be given a minimum of 24 hour advance notice before testing is to take place. All pipe not passing the 4% deflection limit test shall be removed and replaced at no additional cost to the City.

During loading, transportation and unloading, every precaution shall be taken to prevent injury to the pipe. No pipe shall be dropped from cars or trucks, or allowed to roll down slides without proper retaining ropes. During transportation each pipe shall rest on suitable pads, strips, skids or blocks securely wedged or tied in place. Any pipe damaged shall be replaced. 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.

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 pipes 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 either permanently rejected or minor repairs made. After delivery, any pipe will be rejected which has been damaged beyond the possibility of satisfactory repair.

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 and catch basin lateral connections installed as part of the project shall be completed prior to final paving of the project by experienced personnel trained in locating breaks, obstacles and service connections by closed circuit television. A video tape and suitable log shall be provided to the City for review prior to final paving.

603.132 Cleaning:

All sewers and storm drains shall be thoroughly cleaned with high pressure water jetting equipment.

Movable dams shall be permitted for the purpose of cleaning storm sewers. Movable dams shall be collapsible in case of upstream line surcharging, so the dam can be removed to allow flow to resume down the storm sewer line. Movable dams must be the same size as the inside diameter of the storm sewer line being cleaned, and have a flexible scraper attached so a thorough cleaning of debris is accomplished.

603.133 Testing:

Gravity sewers shall be tested by one of the following methods:

- A. Low Pressure Air

Approval of method will be made by the Engineer with due consideration for subsurface conditions and size and type of pipe.

The Contractor shall have the proper plugs, weirs, and other equipment to perform all required tests. Testing of each section of sewer installed shall include the portions of service laterals installed under this contract.

A. Low Pressure Air:

When low pressure air test is used, it shall be conducted in compliance with the following:

1. After completing backfill of the wastewater line, the Contractor shall, at no additional cost to the City, conduct a line acceptance test using low pressure air. The test shall be performed according to stated procedures and in the presence of the Engineer.

Procedures:

1. All pneumatic plugs shall be seal tested before being used in the actual test installation. One (1) length of pipe shall be laid on the ground and sealed at both ends with the pneumatic plugs to be checked. Air shall be introduced into the plugs at 25 psig. The sealed pipe shall be pressured to 5 psig. The plugs shall hold against this pressure without bracing and without movement of the plugs out of the pipes.
2. After a manhole to manhole reach of pipe has been backfilled and cleaned, and the pneumatic plugs are checked by the above procedure, the plugs shall be placed in the line at each manhole and inflated to 25 psig. Low pressure air shall be introduced into this sealed line until the internal air pressure reaches 4 psig greater than the average back pressure off any ground water that may be over the pipe. At least two minutes shall be allowed for the air pressure to stabilize.
3. After the stabilization period (3.5 psig minimum pressure in the pipe), the air hose from the control panel to the air supply shall be disconnected. The portion of line being tested shall be termed "acceptable" if the time required in minutes for the pressure to decrease from 3.5 to 2.5 psig (greater than average back pressure of any ground water that may be over the pipe) shall not be less than the time shown for the given diameters in the following table:

<u>Pipe Diameter</u> <u>(In Inches)</u>	<u>Minutes</u>
4.....	2.0
6.....	3.0
8.....	4.0
10.....	5.0
12.....	5.5
15.....	7.5
18.....	8.5
21.....	10.0
24.....	11.5

4. In areas where groundwater is known to exist, the Contractor shall install a one-half inch diameter capped pipe nipple, approximately 10" long, through the manhole wall on top of one of the sewer lines entering the manhole. This shall be done at the time the sewer line is installed. Immediately prior to the performance of the Line Acceptance Test, the groundwater shall be determined by removing the pipe cap, blowing air

through the pipe nipple into the ground so as to clear it, and then connecting a clear plastic tube to the nipple. The hose shall be held vertically and a measurement of the height in feet shall be divided by 2.3 to establish the pounds of pressure that will be added to all readings. (For example, if the height of the water is 11-1/2 feet, then the added pressure will be 5 psig, and the 2.5 psig to 7.5 psig. The allowable drop of one pound and the timing shall remain the same.)

5. If the installation fails the air test, the contractor shall, at no additional cost to the City, determine the source of the leakage. He shall then repair or replace all defective materials and/or workmanship.

603.14 Method of Measurement:

The Engineer shall have the right to take samples of the concrete after it has been mixed, or as it is being placed in the forms, and to require cores to be cut from the finished pipe for any inspection and tests he may require. Holes left by the removal of cores shall be filled in an approved manner by the Contractor at no additional cost to the City.

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.

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.

Payment for all trench excavation to the established trench profile indicated within the plans shall be considered incidental and included in the pay item with the exception of structural rock excavation and pavement removal.

All sheeting, shoring, temporary bracing and dewatering will be included in this item. Payment for approved undercuts below the established trench profile will be paid for under Item 206.061 - Structural Earth Excavation Drainage and Minor Structures (overdepth).

Rock excavation will be paid for as Structural Rock Excavation as specified in Section 206 of the Supplemental Specifications.

Backfill material and backfilling of the trench shall be incidental to the related pipe pay item, except in the case where the Engineer requires the Contractor to backfill with Granular Borrow. Granular Borrow, in this case, shall be paid for under pay item 203.25.

Should the Contractor elect to utilize drag boxes or related box shoring structures, sheeting or other methods during installation work, overcutting will be allowed to accommodate the structures. However, no payment will be made for the excess excavation and backfill material.

Contractor is responsible for any and all engineering necessary for trench sheeting or shoring of any trench excavation designed by a professional engineer licensed 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 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, drain lines and manholes and any maintenance and cleaning of said sewers or storm drainage that may be required as a result of new pipe installation shall be incidental to the related pay item and no separate payment for this work will be made.

Work associated with providing anti-floatation during installation of the pipes shall be the responsibility of the contractor and shall be considered incidental to the pay items under this section.

The accepted quantity of service leads will be paid for at the contract unit price per linear foot of pipe installed, complete in place. The amount bid for each lateral shall be full compensation for furnishing all labor, equipment, tools, adapters, reducers, and materials necessary to satisfactorily connect all laterals.

Bypass pumping will be required for some pipe installations to maintain existing sewer and storm drainage flows. Bypass pumping and other required work to maintain flows shall be considered incidental to the related pipe pay item.

Payment for trench excavation, with the exception of Section 206 pay items, shall be incidental to pipe pay items. Pipe bedding materials, geotextile, backfilling, backfill, are incidental to the pay items under this section.

Removal and resetting of existing electrical services (when necessary) is incidental to the pay items under this section.

The costs for PVC, PE and HDPE fitting, bends, end caps, retainer glands and thrust blocking shall be incidental to the appropriate pipe item.

The cost for providing exterior drops to manholes, as called out on the plans and as detailed within the detail sheets, shall be incidental to the appropriate pipe item.

Payment for non-standard lengths of pipe shall be at the contract unit price per linear foot for those pay items and no additional payment shall be made.

The cost of cutting pipe and/or connectors necessary to construct new storm drain and sewer pipe, in addition to the work and materials necessary to connect new or existing pipes to existing pipes, catch basins, or manholes, shall be incidental to the appropriate pay item.

Changes to flow lines, profile grades, and pipe inverts of one foot or less shall be incidental to the appropriate pay items.

The costs to install rigid insulation shall be considered incidental to the related pay item.

Removal of existing sewer and storm drain within the trench limits of new pipe and structure excavations shall be considered incidental to the related pipe or structure pay item.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
603.131	4 and 6 Inch Diameter PVC SDR35 sewer house services	Linear Foot
603.132	8 Inch Diameter PVC SDR35 Storm Drain/Sewer Pipe (All Depths)	Linear Foot
603.159	12 Inch Diameter Storm Drain Pipe (All Depths)	Linear Foot
603.179	18 Inch Diameter Storm Drain Pipe (All Depths)	Linear Foot

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.

604.02 Materials

The Contractor shall comply with the American Iron and Steel (AIS) Requirements on this project.

Manhole frames and covers used on this project for both new and altered structures shall be 24" circular "sewer" and "drain" frames and covers, or approved equal. Covers shall be solid. Sewer covers shall have "Sewer" cast into the cover and storm drain covers shall have "Drain" cast into the cover. Catch basin frames and grates shall be as detailed on the plans.

The approved models for manhole frame and covers are:

East Jordan: Frame = 1690Z, Cover = 2160A either "SEWER" or "DRAIN" lettering.
Neenah: Frame = 14960001, Cover = 14960002 "SEWER" or 14960003 "DRAIN"

The approved models of catch basin frame and covers are:

East Jordan: Frame = 7375Z, Grate = 2440M
Neenah: Frame = 32480001, Grate = 32480002

604.03 Construction Requirements

Concrete Blocks shall not be used in any way in the construction or alteration 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.

Between the third and fourth paragraphs of the Subsection insert the following paragraphs.

Storm drain inverts/channels shall be constructed by brick set in cement mortar, approved fiberglass insert, or by factory pre-cast concrete.

Sewer manhole inverts/channels shall be constructed by brick set in cement mortar, approved fiberglass insert, or by factory pre-cast concrete. Such pre-cast concrete shall be epoxy coated and the shelf shall have a permanent non-skid surface. Pre-cast concrete invert shall be cured at least 7 days in a controlled environment with use of plasticizers to reduce moisture content before applying epoxy. Epoxy shall be Sikagard 62 or approved equal and shall be cured to manufacturer's specifications before delivery to the project site.

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".

The outside surface of any masonry work for catch basins and manholes shall be plastered with mortar from 1/4 inch to 3/8 inch thick. The masonry shall be properly wetted before the plaster is applied. The plaster shall be carefully spread and troweled so that all cracks are thoroughly worked out. After hardening, the plaster shall be carefully checked by being tapped for bond and soundness.

All brick masonry surfaces with mortar shall be waterproofed with one coat of DEHYDRATINE 6 TROWEL MASTIC, DEHYDRATINE 10 SEMI-MASTIC or approved equal.

All poured concrete or precast concrete surfaces shall be waterproofed with two heavy coats of bituminous waterproofing materials. The material shall be MINWAX FIBROUS BRUSH COAT made by the Minwax Company, New York, New York; TREMCO 121 FOUNDATION COATING, made by the Tremco Manufacturing Company, Cleveland, Ohio; INERTOL NO-7 made by Inertol Company, Newark, New Jersey or approved equal.

All waterproofing material shall be applied according to the manufacturer's specifications and directions.

Catch basins shall be constructed as shown on the "Standard Details, Catch Basins and Inlets" of the contract drawings. Unless otherwise indicated, catch basins shall have A-4 inlet stones and sediment hoods which shall be incidental to the contract unit price of the structure.

Vacuum Testing of Manholes:

All manholes constructed by the Contractor shall be vacuum tested for leakage in the presence of an Engineer after installation and prior to backfilling. Vacuum testing shall be performed in accordance with ASTM C1244. The vacuum test requirement will apply to any existing manhole altered.

The Contractor shall furnish all labor, equipment, and any appurtenant items necessary to satisfactorily perform the vacuum test. All testing equipment shall be approved for vacuum testing manholes.

Procedure:

All lifting holes shall be plugged with an approved non-shrink grout inside and out. Manhole joints shall be grouted from the outside only. All pipes entering the manhole shall be plugged. The Contractor shall securely brace the plugs in order to keep them from being drawn into the manhole. The test head shall be placed at the inside of the top of the cone section of the manhole and the seal inflated in accordance with the manufacturer's recommendations.

A vacuum of 10 inches of mercury shall be drawn and the vacuum pump shut off. With the valves closed, the time for the vacuum to drop to 9 inches of mercury shall not be less than that shown below:

DEPTH (Feet)	MANHOLE DIAMETER (Inches)		
	48	60	72
0-8	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121

(Times shown are minimum elapsed times, in seconds, for a drop in vacuum of 1 inch of mercury.)

If the manhole fails the initial test, necessary repairs shall be made with a non-shrink grout to manhole exterior, while the vacuum is still being drawn. Retesting shall proceed until a satisfactory test is obtained.

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 and filled with flowable fill unless specified to be removed. The structure shall be completely removed.

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 Altering, Adjusting and Rebuilding Catch Basins and Manholes

Replace existing manhole frame and cover shall include removal of existing frame and cover, reconstructing riser brick and furnishing and installing a new frame and cover that meets the City's specifications.

Modify manhole or catch basin shall include making alterations as indicated on the plans or as required by field conditions. Alterations may include (as applicable) coring new inlet or outlet pipe holes, adjustments to manhole invert channels caused by new pipe connections, waterproofing, installation of new steps, replacement of inlet stone, replacement of outlet trap.

Adjust existing structure to grade shall include adjusting a catch basin frame and grate or manhole frame and cover to grade. Adjusting manholes and catch basins to grade shall include removing and resetting curb inlet stone and terminal curbs (as applicable), removing and resetting frame and cover/grate, and fully reconstructing riser brick to install frame at finish grade.

Core inlet/outlet pipe hole in catch basin or manhole shall include equipment and labor costs to coring a new hole in a catch basin or manhole. Costs for connection boot or mortaring pipe in place are incidental to cost of the pipe.

604.045 Winterization

The Contractor will have the choice of two methods for winterizing the new catch basin and manhole frames and covers.

1. The Contractor may elect to leave the frames and covers at or below grade with the binder pavement during the winter. This item would then include the removal of pavement in the spring from around the frame, the raising of the frame to the proper elevation for the final paving and the replacement of the binder pavement that was removed from around the frame.
2. Or, the Contractor may elect to set the frame and cover at the finish grade for the street and provide a 4 foot wide hand placed pavement ramp/taper around the frame to protect it during the winter plowing operations. This item would then include the placement of pavement ramp around the frame in the fall and the removal of pavement ramp in the spring.

In either event, the Contractor maintains responsibility for the frame and cover during with winter months. In the event of a loose frame and cover, the removal of the pavement ramp, or damage to the frame and cover, it is the Contractors responsibility to respond with replacement of damaged structure or additional pavement material to safeguard the public and structure.

In the event the Contractor does not bring the frame and cover to grade for the winter months then the work to install the frame and cover in the spring will not be considered a Winterization item but considered the completion of the initial manhole installation.

In the event of a structure requiring additional winterizing mix after surface is no longer available, QPR mix may be substituted as an alternate material.

604.05 Method of Measurement

Under this Subsection the following sections shall be amended and expanded as follows:

Subsection (a) of the Standard Specifications shall be deleted and the following paragraph shall be included: Complete structures. Each catch basin and manhole will be measured per each complete.

Subsections (c) and (d) of the Standard Specifications shall be deleted and the following paragraph shall be included: All steps, castings or other appurtenances installed as shown on the plans or as required shall not be measured for payment and shall be incidental to the pay items of new structures.

Each manhole frame and cover to be replaced with a new drain manhole frame and cover will be measured by the unit each, complete in place.

Each existing drainage structure to be abandoned or removed will be incidental to the installation of new drainage structures.

Each existing drainage structure to be removed and replaced with a new drainage structure will be considered as one unit, including inlet stone, frame, grate, sediment hood, adjustment to grade, connection of the storm drain pipe(s) to basin and installation of new inlet/outlet.

Removing and resetting granite curb associated with structure installation shall be considered incidental.

604.06 Basis of Payment

The first paragraph shall be amended by adding the following sentences:

The cost of furnishing and installing steps, installing stubs and other appurtenances shall be considered as incidental to the structure and no separate payment will be made therefore. The cost of coring new inlet and outlet holes in existing structures is incidental to the Modify Structure item and no separate payment will be made.

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 furnishing and installing curb inlet stones shall be incidental to the catch basin structures and no separate payment shall be made.

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.

Pavement and gravel construction/reconstruction to provide “dish” for catch basins shall be incidental to the catch basin structure and no separate payment will be made. Refer to “Typical Pavement Grading on Slopes for Catch Basins and Inlets” detail for “dish” construction.

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.

Contractor shall pay special attention to maintaining flows in existing sewers. Sanitary sewer pipes will require bypass pumping and shall be the contractor’s responsibility including all bypass pumping, associated work elements and coordination with the City. Work shall be coordinated with the Engineer and will require special consideration and work to maintain sewer and drainage during project construction. This work shall be considered incidental to the costs of construction.

The cost of cutting pipe and/or connectors necessary to construction new storm drain and sewer pipe, in addition to the work and materials necessary to connect new or existing pipes to existing pipes, catch basins, or manholes, shall be incidental to the appropriate pay item. Changes to flow lines, profile grades, and pipe inverts of one foot or less shall also be incidental to appropriate pay item.

The cost of winterizing frames and covers shall be incidental to pay items in this section.

Connection of existing pipes to proposed structures, including all necessary, excavation, fittings and backfill shall be considered incidental to the respective structure and no separate payment shall be made.

<u>Pay Item</u>	Payment will be made under:	<u>Pay Unit</u>
604.13	Install 4 Foot Diameter Catch Basin	Each
604.15	Install 4 Foot Diameter Manhole	Each
604.161	Modify Structure	Each
604.18	Install Type F Basin	Each

SECTION 605 - UNDERDRAINS

The provisions of Section 605 of the Standard Specifications shall apply with the following additions and modifications:

605.01 Description

The proposed underdrain shall be 6" in diameter and shall be constructed as shown on the plans and specified herein. The type of pipe material used for this purpose shall be SDR-35 as shown on the project details and plans. Coiled pipes shall not be used.

This section also covers the install of 12" and 15" stormdrain/underdrain pipes to be installed basin to basin between Motley Street stations 2+90 to 0+72. The type of pipe for the 12" and 15" underdrain/storm drain shall be SDR-35 as shown on the project detail and plans.

605.02 Materials

Bedding material around underdrain shall conform to the requirements of Subsection 703.30 of these specifications. Material for pipe shall conform to the appropriate subsection of Section 700 of the Standard Specifications for the particular type of pipe supplied. Underdrain filter fabric material shall be equal to Mirafi 140N by Fiber Industries, Inc.

605.04 Underdrain Construction

Underdrain shall be constructed in accordance with the Standard Specifications and as shown on the plans and detail sheets of the Contract Drawings.

605.06 Method of Measurement

Underdrain will be measured by the linear foot, complete in place.

605.07 Basis of Payment

The accepted quantity of underdrain will be paid for at the contract unit price per linear foot, complete in place.

Trench Excavation, Couplings, Connections of Pipe, Crushed Stone, Subbase Gravel, Underdrain Filter Fabric and all other appurtenances necessary to satisfactorily complete the work shall be considered as incidental to the cost of supplying and installing the underdrain. Please see plans for details of gravel filter.

Underdrain clean-outs and all other appurtenances necessary to satisfactorily complete the work shall be considered as incidental to the cost of supplying and installing the underdrain.

Payment will be made under:

Pay Item

Pay Unit

605.08

6" Diameter PVC Underdrain

Linear Foot

605.10

12" Diameter PVC Underdrain

Linear Foot

605.11

15" Diameter PVC Underdrain

Linear Foot

SECTION 608 – SIDEWALKS AND DRIVEWAYS

The provisions of Section 608 of the Standard Specifications shall apply with the following additions and modifications:

608.01 Description

This work shall consist of the construction of brick sidewalks on bituminous base, asphalt sidewalks and driveways on a crushed gravel base. Limits of the work where new sidewalk matches existing shall be cleanly saw cut prior to demolition operations. This work shall also include the construction of sidewalk ramps at locations shown on plans. The sidewalk ramps shall be in accordance with the sidewalk ramp typical details and with the current Americans with Disabilities Act requirements.

608.02 Materials

Materials shall meet the requirements specified in the following sections as well as curb specifications in Section 609.

608.03 Portland Cement Concrete Sidewalk and Driveway Materials

Materials shall conform to the requirements of the various subsections of the specifications listed below:

Portland Cement Concrete:	Shall conform to the requirements of Section 502 of the Standard Specifications for Structural Concrete, Class "A",
Preformed Expansion Joint Filler:	Shall conform to the requirements of subsection 705.01 of the Standard Specifications
Welded Steel Wire Fabric	Shall be 6" x 6" mesh with No. 10 wire and shall conform to the requirements of AASHTO designation M55, Welded Steel Wire Fabric for Concrete Reinforcement. All welded wire fabric shall comply with American Iron and Steel (AIS) requirements.
MicroFibers Reinforcement	Shall meet the material specifications described in ASTM C-1116, Type III, Section 4.1.3 "Synthetic Fiber-Reinforcement Concrete and Shotcrete. Fibers shall be ½" in length applied at 1.5 lbs./CY.

Construction Methods

- a. Subgrade: the subgrade shall be shaped parallel to the proposed surface of the walks and drives and shall be thoroughly compacted. All depressions occurring shall

- be filled with suitable material and again compacted until the surface is smooth and hard.
- b. Foundation: After the subgrade has been prepared, the base shall be constructed as shown on the Details.
 - c. Forms: Side and transverse forms shall be smooth, free from warp, or sufficient strength to resist springing out of shape, and a depth to conform to the thickness of the proposed walks and drives.
 - d. Reinforcing: Welded wire fabric shall be placed 2 inches above the crushed grave, and 2 inches from all finished edges, expansion joints and curbs. All fabric joints shall be overlapped a minimum of 1 foot and properly tied.
 - e. Placing Concrete: The foundation shall be thoroughly moistened immediately prior to the placing on the concrete. The proportioning, mixing, and placing of the concrete shall be in accordance with the requirements of Section 502 – Structural Concrete.
 - f. Finishing: The surface shall be finished to produce a broomlike pattern. No plastering of the surface with mortar will be permitted. The finish shall result if a surface of uniform texture and uniform color. All outside edges of the slab and all joints shall be rounded with a ¼" radius edging tool.
 - g. Joints: Slabs shall be –placed alternately in lengths not exceed 30 feet or as directed and shall be separated be an expansion joint of preformed expansion filler ½ inch in thickness.
 - h. The sidewalk surface shall be scored in block units of not more than 40 square feet as directed. The depth of the scoring shall be at least one quarter of the thickness of the slabs.
 - i. When a concrete sidewalk is constructed adjacent to a building, retaining wall or other fixed structure, a ¼ inch thick preformed joint filler shall be used between the slab and the structure.
 - j. Curing: Concrete shall be cured for at least 72 hours, Curing shall be by means of Thomson's Water Seal as manufactured by E.A. Thompson Co, Inc. of Memphis, Tennessee, boiled linseed oil, white pigmented curing compound, or by other approved methods. During the curing period, all traffic, both pedestrian and vehicular, shall be excluded. Vehicular traffic shall be excluded for such additional time as field conditions may require.
 - k. Restoring Disturbed Sidewalks: The Contractor shall restore all cement concrete sidewalks disturbed by construction operations to the conditions that existed prior to the construction. The thickness of the slab shall be equal to or greater than the existing. Welded steel wire fabric shall be required for all sections greater than three (3) feet in length or width.

A 12" bituminous strip shall be placed at the gutter line on all concrete driveways as a transition between the driveway and street.

608.04 Bituminous Sidewalks & Driveways

Materials

Material for bituminous concrete base courses and surface courses for sidewalks and driveways shall conform to the requirements of Section 403 of the Standard Specifications for Hot Mix Asphalt. Crushed gravel base shall conform to the requirements of Section 304 of these specifications for Aggregate Base Course - Crushed, Type "B".

Construction Methods

1. Excavation: Excavation shall be made 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 plans and typical details. All soft and yielding material shall be removed and replaced with acceptable material.
2. Sidewalk Construction: Sidewalks shall be constructed as shown on the Details. Replacement or reconstruction of sidewalk ramps shall be completed as shown on the details. Ramps shall be concrete with detectable warnings.
3. Driveway Construction: Driveways shall be constructed as shown on the Details.
4. Placing Bituminous Material: Bituminous material shall be placed on the compacted base course in two courses, one base and one surface, so as to give the required depth when rolled. Compaction shall be accomplished by means of a power roller having a minimum total weight of 2,000 pounds with a minimum of 65 pounds per inch 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 material shall be uniformly compacted.

608.41 Brick Sidewalk

Materials shall conform to the requirements of the various subsections of the specifications listed below:

New Brick: Conform to the various subsections of the specifications listed below.

Brick - Brick shall conform to requirements of ASTM Standard Specifications for Building Brick (made of clay or shale) Designation C62-66 for Grade SW with the following modifications:

- a. The absorption limits shall be from 8 to 12 per cent for the average of 5 bricks.
- b. The compressive strength shall not be less than 8000 pounds per square inch (psi).
- c. The modulus of rupture shall not be less than 1000 pounds per square inch (psi).
- d. The bricks shall be No. 1, wire cut type for paving.

Bricks shall be of standard size (2-1/4" x 3-3/4" x 8") with permissible variations not to exceed 1/16" in depth, 1/8" in width or 1/4" in length.

Bricks shall be as manufactured by the Pine Hall Brick Co. of Madison, North Carolina or an approved equal. Prior to ordering the brick, samples shall be submitted in whole straps to show color range.

All base courses and joints shall conform to the applicable subsections of Division 700 of the Standard Specifications.

Construction Methods

- a. Subgrade: The subgrade for the sidewalks and driveways shall be shaped parallel to the proposed surface of the walks and drives and shall be thoroughly compacted. All depressions occurring shall be filled with a suitable material and again compacted until the surface is smooth and hard.
- b. Foundation: After the subgrade has been prepared, a foundation of crushed gravel shall be placed upon it. After being thoroughly compacted, the foundation shall

have a thickness as shown on the plans and typical details and shall be parallel to the proposed surface of the work.

- c. Bituminous Base: A layer of hot bituminous pavement grading "B" shall be spread upon the properly prepared crushed gravel. After being thoroughly compacted, the bituminous base Sand-Cement Base: A layer of sand-cement base course material one (1") inch in thickness shall be spread upon the properly prepared bituminous base course. The course shall be thoroughly compacted and present a hard smooth surface parallel to the proposed finished slope and grade of the walks and drives. The ratio shall be six (6) parts of washed mortar sand to one (1) part Portland Cement.
- d. Brick Placement: After the sand base course has been properly prepared, the brick shall be placed in the pattern shown on the plans and typical details. The brick shall be placed as closely together as possible and the sand joints between the brick shall be no wider than that allowed by the natural texture of the brick itself. NO OPEN JOINTS WILL BE ALLOWED. Brick shall be saw cut to fit spaces requiring less than a whole brick. No cut brick shall be less than two (2") inches in length. A journeyman brick mason shall supervise all brick placement.

After the bricks are carefully set upon the properly prepared sand-cement base, a plank or heavy sheet of plywood covering several course of brick shall be placed upon the bricks and carefully rammed with a heavy hammer until the bricks reach a firm, unyielding bed and present a surface of the proper slope and grade. Any divergence from line and grade shall be corrected by taking up and relaying the bricks. After the ramming of the bricks, a sufficient amount of sand-cement shall be spread over the surface and thoroughly swept or raked so as to fill the joints. All surplus sand-cement remaining on the sidewalk and driveway after the joints have been properly filled, shall be carefully removed by sweeping. Care shall be taken to avoid raking out the joints during removal of excess sand-cement. A final application of sand only shall be spread on the sidewalk. The application of sand shall then be removed by sweeping while the aforementioned precautions are being exercised.

A 12" wide bituminous strip shall be placed at the gutter line and at the back edge of the brick driveway as a transition between the brick and adjoining surfaces.

- e. A course shall have a minimum thickness of two (2") inches and shall be parallel to the proposed finish grade.

608.05 Method of Measurement

Hot bituminous concrete driveway shall be measured by the square yard, complete in place.

Reinforced Concrete Sidewalk shall be measured by the square yard, complete in place.

Curb Ramp Detectable Warning Surface shall be measured by the square foot complete in place.

608.06 Basis of Payment

The accepted quantity of hot bituminous concrete driveway/sidewalk will be paid for at the contract unit price per square yard, complete in place. This price shall include the cost of excavation including removal of existing sidewalk/driveway surface, and all labor, and other

materials and equipment necessary to satisfactory complete the work. There shall be no unit price adjustment for machine places versus hand placed hot mix asphalt.

Reinforced Concrete Sidewalk will be paid for at the contract unit price per square yard, complete in place. This price shall include the cost of excavation including removal of existing sidewalk surface, forms and form work, add mixtures, and all labor and other materials and equipment to satisfactory complete the work.

Curb Ramp Detectable Warning Field will be paid for at the contract unit price per square yard, complete in place. This price shall include the cost of excavation including removal of existing sidewalk surface, forms and form work, add mixtures, and all labor and other materials and equipment to satisfactory complete the work.

<u>Pay Item</u>	Payment will be made under:	<u>Pay Unit</u>
608.08	Reinforced Concrete Sidewalk	Square Yard
608.12	Hot Bituminous Driveway Apron	Square Yard

**SUPPLEMENTAL SPECIFICATION
SECTION 608A- DETECTABLE WARNINGS**

The provisions of Section 608 of the Standard Specifications shall apply with the following additions and modifications:

608.01 Description

This work includes the installation of detectable warning panels in curb ramps at the locations shown in the plans and in accordance with the plans or as established by Project Personnel. Castings shall have an integral non-slip texture on and between the truncated dome shapes. Castings shall be DURALAST® Natural Finish (Uncoated) or approved equal. Approved equal must meet the requirements of this specification.

608.02 Materials

Manufacturer shall certify that all castings conform to either Gray Iron ASTM A48 Class 35 B and/or AASHTO M105, Class 35B gray iron and/or ASTM A536 Ductile Iron. Castings must contain a minimum of 85% recycled content. They shall meet all Americans with Disabilities Act Accessibility Guidelines (ADAAG) requirements for truncated domes, and when installed, shall be capable of producing the pattern of domes as shown in the plans.

All detectable warning plates shall have the product name or series number (example: DURALAST® logo), country of origin and the manufacturer's identification or name (EJ) permanently cast on the top surface. The bottom of the casting shall have the approved part number and production date (example: mm/dd/yy) for tracking purposes.

DWP must comply with ADAAG requirements for dome size, dome spacing and color contrast. All DWP must have an integral iron anchor tab to ensure proper restraint in the concrete slab. Square and Rectangular Plates will be provided with optional bolting for assurance of proper dome spacing during installation. Square and Rectangular castings shall be provided in incremental sizes such as: 18" x 24", 24" x 24", 24" x 30" or 24". Radial castings shall be provided in radii such as: 10', 15', 17.5', 20', 25', 30', or 35'. Castings shall be of uniform quality, free from sand holes, gas holes, cracks, shrinkage and other surface defects. Castings shall be reasonably well cleaned by shot blasting. Runners, risers, fins and other cast-on pieces shall be removed from the castings and such areas shall be ground smooth. As-cast dimensions may vary within accepted foundry tolerances as outlined in the Iron Castings Handbook published by the American Foundrymen's Society, Inc. Nominally, casting dimensional tolerances shall be +/- 1/16 inch per foot. Castings shall be furnished uncoated or as specified by the purchaser.

Cast in place concrete shall meet specifications for MaineDOT Class A structural concrete, minimum compressive strength 4,000 PSI. Portland cement concrete shall meet the requirements of Section 502, Structural Concrete, Class A.

Construction Requirements

The detectable warning panels shall extend the full width of the ramp. The installation of the detectable warning panels shall be in accordance with the manufacturer's recommendation. Prior to starting this work, the Contractor shall submit for approval the name of the selected supplier, manufacturer's literature describing the product, installation procedures, and routine maintenance required.

Existing Concrete or Asphalt Ramp

Existing concrete or asphalt shall be saw cut to a dimension 4 inches larger than the detectable warning panel area. New concrete shall be placed in the resulting opening and finished, and the new panels set into the wet concrete according to manufacturer recommendations. New panels shall be set square with the curb edge and the base of the truncated domes shall be flush with adjacent surfaces to allow proper drainage.

Existing and New Brick Ramps

Existing brick shall be removed to a dimension 4 inches larger than the detectable warning panel area. New brick shall be placed to a dimension 4 inches larger than the panel area. New concrete shall be placed in the resulting opening and finished, and the new panels set into the wet concrete according to manufacturer recommendations. New panels shall be set square with the curb edge and the base of the truncated domes shall be flush with adjacent surfaces to allow proper drainage.

New Concrete or Asphalt Ramp

New concrete shall be placed and finished for the ramp, and the new detectable warning panel set into the wet concrete, according to manufacturer's recommendations. New panels shall be set square with the curb edge and the base of the truncated domes shall be flush with adjacent surfaces to allow proper drainage

New Asphalt Ramps

Asphalt shall be saw cut and removed to provide an opening that will allow for the dimensions of the detectable warning panel, surrounded by an additional 4" border on all sides of the panel. New concrete shall be placed in the resulting opening and finished, and the new panels set into the wet concrete according to manufacturer recommendations. New panels shall be set square with the curb edge and the base of the truncated domes shall be flush with adjacent surfaces to allow proper drainage.

608.05 Method of Measurement

The detectable warning panel will be measured by the surface area of the completed panel in place.

608.06 Basis of Payment

Payment will be full compensation at the contract unit price for all labor, materials, and equipment required to install the detectable warning panel. This shall include surface preparation and removal of concrete or asphalt, and necessary replacement concrete.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
608.27	Curb Ramp Detectable Warning Panel	Square Foot

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 (5") straight and circular Vertical Curb Type 1 to be set including new terminal curb and sidewalk ramp curb;. Material shall be in accordance with Section 712.04 except that drill holes through the curb will not be allowed.

This work shall include all precast Portland Cement Concrete Curbing to be set including new and reset existing curb; and all bituminous curbing to be replaced.

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.

609.081 Removing and Stacking Vertical Curbing, Terminal Curbing, Transition Sections, Curb Inlets, and Curb Corners (Type 1)

The Contractor shall be responsible for the removal without damage, cleaning and stacking at a City designated location, all straight and curved curbing, terminal sections and curb corners which are designated to be replaced with new curb and shall be incidental to Item 609.11. Removal of curbing so designated shall be in accordance with the requirements of Subsection 609.08.

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

Curb shall be measured by the linear foot, complete in place. Terminal curb will be measured by each, complete in place. Removal and resetting of existing vertical curb shall be measured by the linear foot, complete in place.

Furnishing and installing catch basin curb inlet stones shall be incidental to the catch basin structures and no separate measurement shall be made.

609.10 Basis of Payment

The accepted quantity for 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 cost of furnishing and installing catch basin curb inlet stones shall be incidental to the catch basin structures and no separate payment shall be made.

<u>Pay Item</u>	Payment will be made under:	<u>Pay Unit</u>
609.10	Vertical Curb, Type 1	Linear Foot
609.12	Vertical Curb, Type 1 Circular	Linear Foot
609.13	Terminal Curb Type 1 – 4 Foot	Each
609.14	Terminal Curb Type 1 – 7 Foot Circular	Each
609.38	Remove and Reset Type 1 Curb	Linear Foot

SECTION 614 – MASONRY PLUG

The provisions of Section 614 of the Standard Specifications shall apply with the following additions or modifications:

614.01 Description

This work shall consist of the construction of Masonry Plugs as shown on the plans and details and specified herein and the construction and placement of flowable concrete fill in abandoned pipelines as shown on the plans and specified herein.

614.02 Materials

Materials shall meet the requirements for the various subsections of the specifications listed below:

Bricks shall conform to requirements of ASTM Standard Specifications for Sewer Brick, Designation C-32-63, Grade MA and SA.

Masonry Mortar shall conform to Section 705 of the Standard Specifications.

Flowable concrete fill: Self consolidating excavatable mixture of Portland Cement, fine aggregate, water and admixtures. Flowability shall be measured in accordance with ASTM D6103. Mix shall be proportioned to produce a 28-day compressive strength of approximately 1000 psi. Compressive strength shall be measured in accordance with ASTM D4832. Materials shall meet the following requirements:

Portland Cement Type I	ASTM C150
Fly Ash	ASTM C618
Fine Aggregate/Mineral Filler	Standard Specification Section 703.01
Air Entraining Admixtures	Per manufacturer's specifications
Water	Potable

614.03 Construction Methods

Excavation shall be made to the required depth and width to perform the work as required.

614.04 Method of Measurement

The installation of a masonry plug into a pipe with a diameter of less than 8 inches shall be incidental to the project and shall require no measurement or payment. The installation of a plug into a pipe with a diameter of 8 inches and larger shall be paid for on a per each basis, complete in place.

The method of measure for flowable fill shall be based on length and diameter of existing pipe.

614.05 Basis of Payment

The accepted quantity of Masonry Plugs in pipes 8 inches and larger will be paid for at the contract unit price, which price shall include the cost of all excavation, bricks, mortar, flowable concrete, all labor, materials, and any equipment necessary to satisfactorily complete the work.

The accepted quantity of flowable concrete fill will be paid for at the contract unit price per cubic yard, complete in place

<u>Pay Item</u>	Payment will be made under:	<u>Pay Unit</u>
614.14	Masonry Plug \geq 8"	Each
614.16	Flowable Fill Concrete	CY

SECTION 615 – LOAM, SEED & MULCH

The Supplemental Specification shall replace Section 615, 618 and 619 of the Standard Specifications:

615.01 Description

This work shall consist of loaming, seeding and mulching areas as shown on the plans or as required. Include restoration of existing lawn and seeded areas disturbed by Work as well as new lawn and seeded areas indicated.

Seeding Season: Unless variance is requested in writing and approved by Department of Public Works, perform seeding only during the following periods: April 15 to July 1 and August 15 to September 30.

615.02 Submittals

Loam/topsoil testing: Provide soils testing by an approved soil testing laboratory for any loam/topsoil to be used. Submit the following: pH, mechanical analysis, percentage of organic content, recommendations on type and quantity of additives to establish satisfactory pH level and supply of nutrients to bring topsoil to satisfactory level for planting.

Certification: Submit manufacturers or vendors certified analysis for soil amendments and fertilizer materials. Submit other data substantiating that materials comply with specified requirements.

Seed Mix: Submit certificate that seed mix meets the specified grass species, proportions and minimum percentages of purity, germination and maximum percentage of weed seed.

Seeding Schedule: Submit proposed schedule for seeding work. Once accepted, revise dates only after request in writing including documentation of reason for delays, and approval of the Department of Public Works.

615.03 Warranty

Lawns & Seeded Areas: Warranty lawns through three (3) years from acceptance date of Project. Make necessary repairs to grades, lawn areas and paving required because of seeding repairs or replacements. Such repairs shall be done at no additional cost to the City.

615.04 Materials

Loam/topsoil: Conform to the requirements of Section 615. Loam shall have a finished depth of four (4) inches, unless noted otherwise on the plans and shall be screened and free of foreign materials greater than 1 inch in every dimension. Acidity range shall be between 5.0 and 7.0 and shall contain not less than 6% organic matter by weight as determined by loss on ignition of moisture-free samples dried at 65 degrees Celsius.

Soil amendments:

1. Fertilizer: Provide a complete fertilizer and a standard product complying with the State and United States fertilizer laws. Deliver to site in original unopened containers which shall bear the manufacturer's name and guaranteed statement of analysis. At least 40% by weight of

the nitrogen content of fertilizer shall be derived from organic materials. Fertilizer shall contain not less than 10% nitrogen, 10% phosphorus, and 10% potash by weight of ingredients or as otherwise indicated by topsoil test results.

2. Superphosphate: Finely ground phosphate rock as commonly used for agricultural purposes, containing not less than 18 percent available phosphoric acid.
3. Ground limestone: Dolomitic limestone and contain not less than 85% of total carbonates and magnesium, ground to such fineness that 50% will pass a 100 mesh sieve and 90% will pass through a 20 mesh sieve. Coarser material will be accepted provided the specified rates of application are increased proportionately on the basis of quantities passing the 100 mesh sieve.
4. Humus: Reed peat, sedge peat or moss peat furnished air dried, finely shredded and suitable for horticultural use.
5. Compost: Commercially processed, well composted food waste, wood ash, leaf and yard waste, wood waste, shredded paper and other acceptable materials and containing no chemicals or ingredients harmful to plants. Compost processing temperatures should exceed 131 degrees to kill any weed seeds and disease organisms.

Seed mix: Provide fresh, clean, new-crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. Provide seed mixture composed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified. Purchase seed only from a recognized distributor, and composed of the following varieties mixed in proportions indicated. Seed shall test to minimum percentages of purity and germination specified.

Grass Seed Mixture	Proportion by Weight	%Germination
KenBlue Kentucky Bluegrass	20%	80
Trifecta Perennial Ryegrass	30%	80
Creeping Red Fescue	40%	85
Chewings Fescue	10%	80

Mulch:

1. Mechanical method: Provide long fibered hay or straw mulch free from noxious weeds and other undesirable material. Use no material which is excessively wet, decayed or compacted as to inhibit even and uniform spreading. Use no chopped hay, grass clippings or other short fibered material unless approved by the Department of Public Works.
2. Hydraulic spray method: Provide cellulose fiber mulch consisting of natural wood, recycled paper or humus cellulose fiber containing no materials which will inhibit seed germination or plant growth. Add sufficient quantity of non-toxic water soluble green dye to provide a definite color contrast to ground surface to aid in uniform distribution.

615.05 Execution

Preparation: Planting soil (loam/topsoil) depths shall be not less than 4 inches unless otherwise noted. Loosen subgrade of lawn areas to a minimum depth of 4 inches.

Remove stones over 1 ½ inches in any dimensions and sticks, roots, rubbish and other extraneous matter.

1. Limit preparation to areas which will be planted promptly after preparation.
2. Place topsoil and add specified soil amendments and mix thoroughly into the loam.
3. Fine Grading: Fine grade lawn areas to smooth, even surface with loose, uniformly fine texture. Roll, rake and drag lawn areas, remove ridges and fill depressions as required to meet finish grades. Remove all lumps, clots, stones, roots and other extraneous matter greater than 1 inch size. Roll to compact topsoil surface sufficient to support pedestrian traffic without leaving footprints greater than ½ inch deep.
4. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.
5. Restore lawn areas to specified soil condition if eroded or otherwise disturbed after fine grading and prior to planting.

Loam Additives:

1. Applying fertilizers: Apply commercial fertilizer and work thoroughly into topsoil.
2. Applying Superphosphate: Incorporate superphosphate into topsoil with application of commercial fertilizer at rate of 25 pounds per 1,000 square feet or at rate determined from test results.
3. Applying ground limestone: After topsoil has been spread and graded, and if recommended as result of the soil analysis, apply ground limestone at rate of 50 pounds per 1,000 square feet or at rate recommended by Testing Laboratory.

Hydroseeding:

1. Hydroseeding method is required for seeding except as otherwise approved by City.
2. Apply slurry uniformly to all areas to be seeded. Provide rate of application as required to obtain specified seed sowing rate.
3. Do not use wet seed or seed which is moldy or otherwise damaged in transit or storage.
4. Application rate: Sow seed mixture at rate of five and one-half (5.5) pounds per 1,000 square feet unless otherwise indicated in specifications.
5. Protect seeded areas against erosion by spreading specified mulch after completion of seeding operations. Spread uniformly to form a continuous blanket not less than 1 ½ inch loose measurement over seeded areas.

Cleanup and Protection:

1. During seeding work, keep pavements clean and work areas in orderly condition.
2. Protect seeding work and materials from damage due to seeding operations, other work operations and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged seeding work as directed.

Maintenance and Acceptance:

1. Begin maintenance immediately after seeding.

2. Maintain grassed areas by watering (on a daily basis during germination), fertilizing, weeding, mowing whenever the grass height exceeds 3 inches, trimming and other operations such as rolling, regrading and replanting as required to establish a smooth, acceptable lawn, free or eroded or bare areas.
3. Maintain each lawn area until acceptance of such area.
4. Include protection such as placement of signs and barricades.
5. Repair damaged areas which do not produce a satisfactory stand of grass to re-establish the intended condition; re-fertilize, re-seed and re-mulch as required to produce satisfactory results.
6. If maintenance period extends from fall of one growing season into the following spring, Contractor shall be required to provide a spring fertilization to all lawn areas in early spring.

Maintenance Periods: Maintain grassed areas for not less than 60 days after completion of seeding.

Acceptance: When seeding work is completed, including maintenance, City will, upon request, make an inspection to determine acceptability.

1. Seeding work may be inspected for acceptance in parts agreeable to City provided work offered for inspection is complete, including maintenance.
2. Where inspected seeding work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by City and found to be acceptable. Remove rejected plants and materials promptly from the site.
3. Acceptance of seeded areas will be given only upon attainment of a reasonably thick uniform stand of grass of not less than 80% permanent grass coverage, free from weeds or sizable thick or bare spots larger than 100 square inches.
4. If all other Work of Contract has been completed and some seeded areas still have not been accepted, Contractor shall maintain such period for an additional 60 days, exclusive of periods stated below. Seeded areas will be accepted upon attainment of a reasonably thick uniform stand of grass.
5. Maintenance Exclusion Period: November 15 through April 15. Note that if maintenance period extends into spring of following year, Contractor shall apply spring fertilization to seeded areas according to soil test requirements. If at or near the end of such 60 day period, unacceptable areas still remain, City may direct a final re-seeding by Contractor or authorize the contract value of performing such work deducted from monies due to Contractor.
6. Acceptance of any seeded area shall be in writing. After acceptance, Contractor will be relieved of further expense for maintaining such areas, other than for damage caused by an Work under the Contract.

615.06 Method of Measurement

Loam Seed and Mulch will be measured by the square yard.

615.07 Basis of Payment:

The accepted quantity of Loam, Seed and Mulch will be paid for at the contract unit price per Lump Sum. This item shall include the cost of excavation and all labor, materials, and equipment necessary to satisfactorily provide loam, seed, and mulch in all areas disturbed by Contractor's operations. 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:

<u>Pay Item</u>		<u>Pay Unit</u>
615.071	Loam, Seed and Mulch	Lump Sum

SECTION 627 – PAVEMENT MARKINGS

The provisions of Section 627 of the Standard Specifications shall apply with the following additions or modifications:

627.01 Description

This work shall consist of providing pavement lines and markings shown on the plans and in all areas where existing pavement markings are damaged or removed by Contractor’s operations.

627.09 Method of Measurement

The quantity of permanent pavement marking lines shall be paid for by a lump sum price. Pavement markings shall be re-applied in existing locations.

Cross walk striping is included in the lump sum for Item 627.77 no separate measurement will be made.

627.10 Basis of Payment

The accepted quantity of permanent pavement marking lines will be paid for at the contract unit price per lump sum. No adjustment will be made to the quantity for payment, except as described under Method of Measurement above.

Cross walk striping is included in the lump sum quantity for Item 627.77 no separate payment will be made.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
627.77	Project Pavement Markings	LS

SECTION 629 - HAND LABOR

The provisions of Section 629 of the Standard Specifications shall apply with the following additions and modifications:

<u>Pay Item</u>	Payment will be made under:	<u>Pay Unit</u>
629.05	Hand Labor, Straight Time	Hour
629.06	Mason, Straight Time	Hour

SECTION 631 - EQUIPMENT RENTAL

The provisions of Section 631 of the Standard Specifications shall apply with the following additions and modifications:

<u>Pay Item</u>	Payment will be made under:	<u>Pay Unit</u>
631.105	Air Tool and Compressor (Including Operator)	Hour
631.12	All Purpose Large Capacity Excavator (Including Operator)	Hour
631.13	Bulldozer (Including Operator)	Hour
631.172	Truck – Large or Small (Including Operator)	Hour
631.22	Front End Loader (Including Operator)	Hour
631.36	Foreman, Straight Time	Hour

SECTION 632 - WYES OR TEES FOR HOUSE CONNECTIONS

632.01 Description:

This work shall consist of the furnishing and satisfactory connection of all Wye/Inserta-Tee Pipe Sections to the main sewer and storm drain. If a wye is installed for a future house connection, the wye shall be closed with an approved stopper in accordance with the manufacturer's specifications. If a wye is installed for reconnection to an existing lateral, sufficient new lateral pipe shall be installed to make a clean reconnection as shown on the "Typical House Lateral Reconnection Detail". The Contractor shall be responsible for locating and reconnecting existing sewer laterals to the new sewer.

This work shall also include the connection of storm drain leads from catch basins to the mainline storm drain as shown on the drawings. Where possible a pre-fabricated tee connection shall be used. Connection of catch basin leads to storm drain larger than 24" in diameter may be performed with the use of a coring machine and suitable connection device. The connecting pipe shall be at least half the size of the main line pipe in order to use a coring tee-type connection. All proposed cores must be approved and witnessed by the Engineer.

632.02 Method of Measurement:

Wye pipe and Inserta-Tee connections will be measured by each section, or connection complete in place.

632.03 Basis of Payment:

The accepted quantities of wye pipe sections will be paid for at the contract unit price per each. The price bid for wye pipe sections shall be full compensation for furnishing, laying, and jointing the house laterals to the main sewers. The price bid for wye pipe sections involving large diameter storm drain shall be full compensation for furnishing, core drilling and joining storm drain laterals to main storm drain. Payment for trench excavation, with the exception of structural rock excavation, will be included in this item. Pipe bedding materials, backfilling and backfill materials shall also be included in this item for payment.

The accepted quantities for Inserta-Tee connections will be paid for at the contract unit price per each. The price bid for Inserta-Tee connections shall be full compensation for furnishing, laying and joining the catch basin laterals to the main storm drain. The price for Inserta-Tee connections involving large diameter storm drain shall be full compensation for furnishing, core drilling and joining storm drain laterals to main storm drain. Payment for trench excavation, with the exception of structural rock excavation, will be included in this item. Pipe bedding materials, backfilling and backfill materials shall also be included in this item for payment.

Payment for the new lateral pipe at each connection will be paid for under Section 633.

Payment will be made under:

Pay Item

Pay Unit

632.08

4"/6" X 8" Wye Section

Each

SECTION 633 – HOUSE SEWER LATERALS

633.01 Description:

This work shall consist of the satisfactory connection or reconnection of all proposed and existing laterals to the new sewer as shown in the contract drawings. All connections shall be made in conformance with the Plumbing Code of the City of Portland and the Maine State Plumbing Code. The Contractor shall be responsible for locating and reconnecting existing sewer laterals to new sewer. The Contractor shall install locating/warning tape over the centerline of all sanitary and storm sewer laterals 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.

633.02 Method of Measurement:

House laterals will be measured by the linear foot complete in place.

633.03 Basis of Payment:

The accepted quantity of house laterals will be paid for at the contract unit price per linear foot of pipe installed, complete in place. The amount bid for each lateral shall be full compensation for furnishing all labor, equipment, tools, adaptors, reducers, and materials necessary to satisfactorily connect all laterals.

The cost of locating/warning tape including installation shall be considered incidental to the appropriate lateral.

Payment for house sewer laterals will be paid for under item 603.131.

SECTION 637 - DUST CONTROL

The provisions of Section 637 of the Standard Specifications shall apply with the following additions or modifications:

637.01 Description:

This work shall consist of applying water and calcium chloride to control dust resulting from traffic and Contractor's operations.

637.06 Basis of Payment:

Dust control shall be incidental to Item 656.75.

SECTION 645 – HIGHWAY SIGNING

The provisions of Section 645 of the Standard Specifications shall apply with the following additions or modifications:

645.01 Description

This work shall include demount and reinstallation of road signs, regulatory, parking, warning, confirmation, street name, and other miscellaneous signs as shown on the plans. All remounted signs are to be installed on new U-Channel Posts with breakaway connections as indicated in the Standard Specifications.

645.08 Method of Measurement

Demount and Reinstall Regulatory, Warning, Confirmation and Route Sign will be incidental to the contract work.

645.09 Basis of Payment

This work shall be incidental to the contract and no additional payments will be made.

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

The Contractor shall refer to the Special Provisions for allowable street closures, traffic restrictions and additional Maintenance of Traffic requirements.

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, electronic variable reader boards, barriers and 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.

The Contractor must submit a traffic plan to the City of Portland Engineer for review and approval, 3 working days prior to the pre-construction meeting. The traffic plan must include all traffic control provisions to ensure the efficient and safe passage of the public.

Guidelines for the construction and erection of barricades, lighting devices, warning signs, etc. may be found in the most recent edition of "Manual on Uniform Traffic Control Devices for Streets and Highways" published by the Department of Transportation of the Federal Highway Administration. This work shall be considered a subsidiary obligation of the contract for which no specific payment will be made.

This project will include unique traffic maintenance requirements which shall be the contractor's sole responsibility to provide and maintain at the contractor's expense. The Contractor's plan may require modifications to be responsive to actual conditions encountered and to accommodate unforeseen traffic congestion or movements. The contractor shall be responsible for cooperating with the City and shall make modifications/changes to the traffic control as directed by the City. No extra payment will be made.

Contractor is responsible for traffic control flaggers and work zone security and safety. Work zone security and safety and flaggers shall be incidental to pay item 652.39.

652.7 Method of Payment

The accepted quantity for Work Zone Traffic Control will be paid based upon a percentage of construction completed as agreed to by the Engineer.

652.8 Basis of Payment

Preparation of traffic control plans, construction signage, including temporary construction signs for CWSRF projects barrels, variable message boards (changeable message signs) cones, 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. Flaggers are incidental to the Work Zone Traffic Control item.

<u>Pay Item</u>	Payment will be made under:	<u>Pay Unit</u>
652.39	Work Zone Traffic Control	Lump Sum

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. The testing shall be bid under the appropriate line item.

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 Engineer on site. Copies of all test results shall be transmitted to the Engineering Department of the City of Portland.

The minimum in-place densities shall meet or exceed the laboratory maximum density as determined by ASTM D 1557 - 78 as follows:

Embankment	Ninety percent	(90%)
Trench Backfill	Ninety-five percent	(95%)
Aggregate Base Course and Aggregate Subbase Course	Ninety-five percent	(95%)

Frequency:

Trenches: One density test, at top of aggregate subbase, every 100 linear feet of pipe trench, no less than one test per trench, located within limited of paved roadway.

Roadway Reconstruction: One density test, at top of aggregate subbase, every 100 linear feet of roadway reconstruction.

654.03 Method of Measurement

Density tests will be measured by each conducted. Roadway tests will be conducted at 100' intervals. If the initial tests do not meet the specifications, the areas shall be retested at no additional cost to the City.

654.04 Basis of Payment

The accepted quantities of density tests will be paid for at the contract unit price per each.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
654.08	Density Test	Each

SECTION 656 - TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL

The provisions of Section 656 of the Standard Specifications shall apply with the following additions and modifications:

656.01 Description

Contractor shall provide temporary soil and water pollution control as called out on the plans and as necessary. Catch basin filter sacks shall be installed in all existing catch basins with the limits of work, and immediately downgradient as determined by the Engineer. This work shall also consist of applying water and calcium chloride to control dust resulting from traffic and Contractor’s operations.

Calcium chloride shall not be used on paved roadways.

656.5 Basis of Payment

The accepted quantity will be paid for at the contract lump sum price.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
656.75	Temporary Soil Erosion and Water Pollution Control	Lump Sum

SECTION 659 - MOBILIZATION AND GENERAL CONDITIONS

The provisions of Section 659 of the Standard Specifications shall apply with the following additions and modifications:

659.05 Basis of Payment

Mobilization shall consist of the cost of initiating the contract. Payment for mobilization will be made at the lump sum price bid for this item in the proposal, which price shall include the cost of initiating the contract. The provisions for payment for the item mobilization supersede any provisions elsewhere in the specifications for including the costs of these initial services and facilities in the prices bid for the various items scheduled in the proposal.

The lump sum price bid for mobilization shall be payable to the contractor whenever contractor shall have completed 10 percent of the work of the contract excluding mobilization bonds and insurances. For the purposes of this item, 10 percent of the work shall be considered completed when the total of payments earned, exclusive of the amount bid for this item, shown on the monthly certificates of the approximate quantities of work done, shall exceed 10 percent of the total price bid for the contract.

The lump sum price bid for mobilization is limited to the following maximum amounts:

Original Contract Amount (including Mobilization)

From More Than Mobilization	to	to and Including	Maximum Amount for Item of
\$ 0	to	\$ 100,000	\$ 3,000
\$100,000		\$ 500,000	\$ 15,000
\$500,000		\$1,000,000	\$ 30,000
\$1,000,000		\$2,000,000	\$ 60,000
\$2,000,000		\$3,000,000	\$ 90,000
\$3,000,000		\$4,000,000	\$120,000
\$4,000,000		\$5,000,000	\$125,000
\$5,000,000		\$6,000,000	\$150,000
\$6,000,000		\$7,000,000	\$175,000
\$7,000,000		\$10,000,000	\$200,000
\$10,000,000		up	2.5% of Amount Bid

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
659.10	Mobilization	Lump Sum

DIVISION 700 - MATERIALS

The following are revisions and additions to the Material Details Division of the Standard Specifications of November, 2014. Provisions contained herein shall be considered to supplement or supersede those portions of the Standard Specifications as they apply to the Contract.

The GENERAL STATEMENT of this Division is hereby revised to read as follows:

All materials which are to be used in the work for which there is no prescribed testing by the project engineer or other certified laboratories, the Contractor shall, prior to final acceptance as specified in subsection 107.9.4, submit a Materials Certification Letter similar to:

Company Letterhead

Mr. _____ Resident Date _____

Address _____ Project No. _____

_____ Town _____

"This is to certify that the below listed materials, which are incorporated into the above designated project, comply with the pertinent specified material requirements of the contract. Processing, project testing and inspection control of raw materials are in conformity with the applicable drawings and/or standards of all articles furnished. (List only those items used.)

- Castings, Grates, Frames and Traps
- Concrete Blocks, Bricks, Precast Sections, Appurtenant Structures
- Culverts, Underdrain, Sanitary Sewer Pipe and Storm Drain Pipe
- Regulatory Signs and Posts

All records and documents pertinent to this letter and not submitted herewith shall be maintained available by the undersigned for a period of not less than three (3) years from the date of completion of the project.

The Materials Certification letter shall be signed by a person having legal authority to bind the Contractor.

Materials for which the above Certificate is acceptable may be subject to random sampling and testing by the City. Certified materials which fail to meet specification requirements may not be accepted.

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:

Designated Aggregate Size

Sieve Size	Per Cent Passing Sieve				
	2 in.	1½ in.	1 in.	¾ in.	½ in.
2 in.	95-100	100	-	-	-
1-1/2 in.	-	95-100	100	-	-
1 in.	50-70	-	90-100	100	-
3/4 in.	-	50-70	-	90-100	100
1/2 in.	15-30	-	25-60	-	90-100
3/8 in.	-	10-30	-	20-55	-
No. 4	0-5	0-5	0-10	0-10	0-15
F.M. (+0.20)	7.45	7.20	6.95	6.70	6.10

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
- e. 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 (c) Aggregate Subbase:

Sand subbase shall not contain particles of rock which will not pass the one inch (1") square mesh sieve, and shall conform to the type "F" Aggregate, as listed in this subsection of the Standard Specifications.

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.

Sieve Size	Aggregate Type		
	Type B	Type D	Type F
3"	--	100	--
2"	100	--	--
1"	--	--	100
½"	35-75	--	--
¼"	25-60	25-70	60-100
No. 40	0-25	0-30	0-50
No. 200	0-5	0-7	0-7

703.18 Common Borrow:

Common borrow shall not contain any particle of bituminous material.

703.19 Granular Borrow:

Granular borrow shall contain no particles which will not pass a three inch (3") square mesh sieve.

703.20 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 and Underdrain:

"Crushed Stone" shall be defined as rock of uniform quality and shall consist of clean, angular fragments of quarried rock, free from soft disintegrated pieces or other objectionable matter.

Crushed stone used as a bedding material for pipe and underdrain shall be uniformly graded and shall meet the follow gradations.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
¾ – inch-----	100
⅜ – inch-----	20-55
No. 4-----	0-10

For pipe sizes 42 inches and larger:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
1-¼ – inch-----	100
⅜ – inch-----	20-55
No. 4-----	0-10

The stone shall be free from vegetable matter, lumps or balls of clay, and other deleterious substances.

SECTION 902 – PORTLAND WATER DISTRICT WATER SERVICES

902.01 Description

This work includes renewing Portland Water District water main services within the project zone as specified on the project plans. This work shall be completed under the City of Portland Contract.

902.02 Execution

The contractor shall confirm the quantity and locations of water main and services to be paid under this item with the Resident prior to construction. All materials and installation shall be in accordance with the Portland Water Districts specifications for the corresponding work items and incidental work.

902.03 Method of Measurement

Copper Services shall be measured by the unit each for each service complete and in place as listed below.

902.04 Basis of payment

The accepted quantity of Copper Services shall be paid at the contract unit price each established in the Bid. Payment shall be full compensation for excavation, shoring and bracing, dewatering, pipe, corporation, fittings, connection to existing service, service box, rod, curb stop, backfilling, testing, and associated work as specified and shown on Drawings. Separate measurement and payment shall be made for aggregate subbase gravel, aggregate base gravel, and Hot Mix Asphalts, as plan quantities. Water main services shall be broken into three separate pay items as listed below.

Separate measurement and payment will be made for pavement removal, placement and compaction of subbase and base gravels and placement and compaction of Hot Mix Asphalts as specified and shown on the Drawings.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
902.11	Replace Valve Box Top Section and Cover	Each
902.12	3/4" Short Side Copper Water Service	Each
902.12	3/4" Long Side Copper Water Service	Each

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Motley Street
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation	
Type	SSA	SS		No Free Water Observed	
Size	4"	1 3/8"		Start Date:	Finish Date:
Hammer Wt.		140		6/25/19	6/25/19
Hammer Fall		30"			

No.	Pen	Rec	Sample Depth	Sample Blow Counts			Depth	Stratum Description
								2.5" Pavement
								Brown Sand and Gravel Trace Silt
								Brown Silty Fine Sand and Gravel
							5'	Bottom of Exploration @ 4.2' (Auger Refusal)
								Probable Bedrock Surface
							10'	
							15'	
							20'	
							25'	
							30'	

Defect Listing Plot Left

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02912	Portland ME	Motley St	Vitrified Clay Pipe		Combined
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2931	240		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-4620	211.7		8	8	
SPR 43	MPR 6	PO Number		Customer	
SPRI 3.3	MPRI 0.5	Work Order		City of Portland ME	
QSR 5441	QMR 2300			Purpose	
				Routine Assessment	
OPR 49	Surveyed By	Direction	Date	Media label	
	Jon_Latham	Downstream	20190522		
OPRI 2	Certificate Number	Pre-Cleaning	Time	Weather	
	U-1116-07006130	No Pre-Cleaning	13:32	Dry	
	Date Cleaned		End Time	Additional Info	
			13:52		



SSMH-2931

Code:	Continuous:	Pos:	Val 1 / 2 :	% :	Gallons:
0.0 ft. Access Point Manhole SSMH-2931		0 - 0			
0.0 ft. Water Level		0 - 0		5	
2.0 ft. Tap Saddle Intruding Clear water running		2 - 0	4 / 2		
2.5 ft. Broken Pipe Void Visible		1 - 3			
2.5 ft. Tap Break-In Intruding		2 - 0	4 / 1		
7.0 ft. Broken Pipe		2 - 10			
8.5 ft. Tap Factory Made Capped		3 - 0	4		
10.4 ft. Tap Factory Made		9 - 0	4		
20.2 ft. Tap Break-In Active		2 - 0	4		
21.6 ft. Broken Pipe		12 - 12			
23.7 ft. Water Level		0 - 0		20	
51.5 ft. Fracture Multiple		3 - 7			
54.2 ft. Tap Factory Made Capped		9 - 0	4		
56.0 ft. Tap Factory Made		2 - 0	4		

Defect Listing Plot Left

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02912	Portland ME	Motley St	Vitrified Clay Pipe		Combined
Upstream MH SSMH-2931	Total Length 240	Year Laid	Shape Circular	Location Details	
Downstream MH SSMH-4620	Length surveyed 211.7	Year Renewed	Height 8	Width 8	Pipe Joint...

	Code:	Continuous:	Pos:	Val 1 / 2 :	% :	Gallons:
3	59.5 ft. Fracture Spiral		6 - 9			
2	69.6 ft. Crack Spiral		2 - 5			
5	85.3 ft. Broken Pipe Soil Visible		6 - 10			
	86.2 ft. Tap Factory Made		9 - 0	4		
	108.0 ft. Tap Factory Made Capped		3 - 0	4		
3	144.2 ft. Fracture Longitudinal		3 - 0			
3	146.6 ft. Fracture Spiral		7 - 5			
1	156.6 ft. Joint Separated Medium		0 - 0			
1	160.3 ft. Joint Separated Medium		0 - 0			
	164.2 ft. Infiltration Stain		4 - 8			
3	166.7 ft. Crack Multiple		11 - 2			
3	167.9 ft. Fracture Spiral		7 - 10			
	170.2 ft. Infiltration Stain		6 - 9			
	172.3 ft. Infiltration Stain	Start S01	1 - 11			
2	193.0 ft. Tap Break-In Intruding		2 - 0	4 / 1		
	211.7 ft. Shape or Size Change		0 - 0	12		
	211.7 ft. Infiltration Stain	End F01	1 - 11			
	211.7 ft. Survey Abandoned Unable to navigate over size change		0 - 0			



Defect Listing Plot Left

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02912	Portland ME	Motley St	Vitrified Clay Pipe		Combined
Upstream MH SSMH-2931	Total Length 240	Year Laid	Shape Circular	Location Details	
Downstream MH SSMH-4620	Length surveyed 211.7	Year Renewed	Height 8	Width 8	Pipe Joint...

Code:

Continuous: Pos: Val 1 / 2 : % : Gallons:

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02912	Portland ME	Motley St	Vitrified Clay Pipe		Combined
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2931	240		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-4620	211.7		8	8	



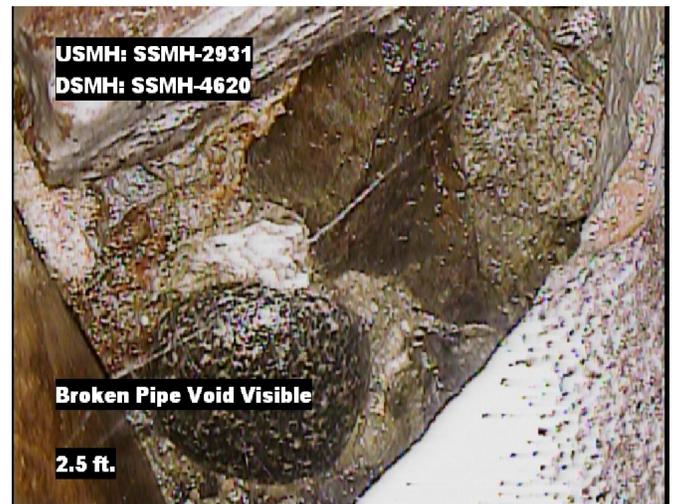
Distance: 0.0 ft. Grade: 0
Condition: Access Point Manhole
Remarks: SSMH-2931



Distance: 0.0 ft. Grade: 0
Condition: Water Level
Remarks: N/A



Distance: 2.0 ft. Grade: 2
Condition: Tap Saddle Intruding
Remarks: Clear water running



Distance: 2.5 ft. Grade: 5
Condition: Broken Pipe Void Visible
Remarks: N/A

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02912	Portland ME	Motley St	Vitrified Clay Pipe		Combined
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2931	240		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-4620	211.7		8	8	



Distance: 2.5 ft. Grade: 2
 Condition: Tap Break-In Intruding
 Remarks: N/A



Distance: 7.0 ft. Grade: 5
 Condition: Broken Pipe
 Remarks: N/A



Distance: 8.5 ft. Grade: 0
 Condition: Tap Factory Made Capped
 Remarks: N/A



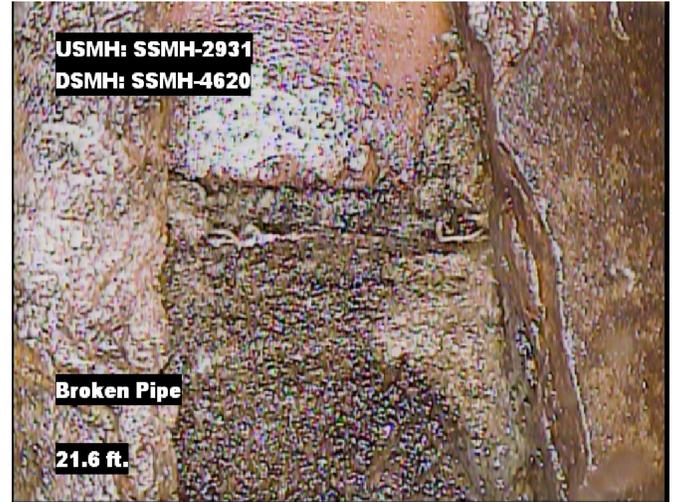
Distance: 10.4 ft. Grade: 0
 Condition: Tap Factory Made
 Remarks: N/A

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02912	Portland ME	Motley St	Vitrified Clay Pipe		Combined
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2931	240		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-4620	211.7		8	8	



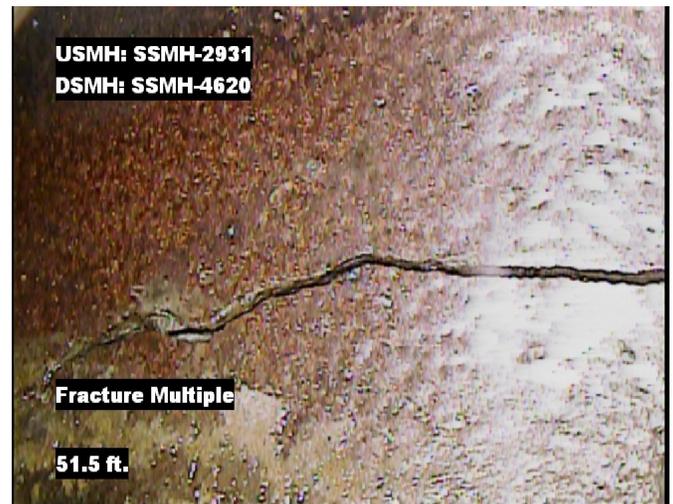
Distance: 20.2 ft. Grade: 0
Condition: Tap Break-In Active
Remarks: N/A



Distance: 21.6 ft. Grade: 5
Condition: Broken Pipe
Remarks: N/A



Distance: 23.7 ft. Grade: 0
Condition: Water Level
Remarks: N/A



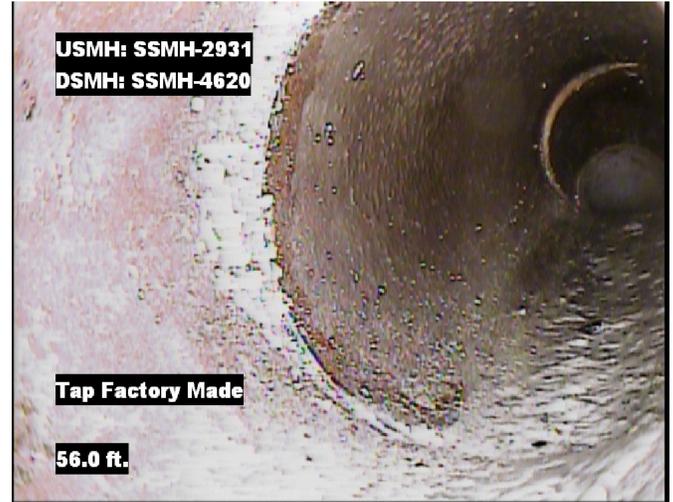
Distance: 51.5 ft. Grade: 4
Condition: Fracture Multiple
Remarks: N/A

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02912	Portland ME	Motley St	Vitrified Clay Pipe		Combined
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2931	240		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-4620	211.7		8	8	



Distance: 54.2 ft. Grade: 0
Condition: Tap Factory Made Capped
Remarks: N/A



Distance: 56.0 ft. Grade: 0
Condition: Tap Factory Made
Remarks: N/A



Distance: 59.5 ft. Grade: 3
Condition: Fracture Spiral
Remarks: N/A



Distance: 69.6 ft. Grade: 2
Condition: Crack Spiral
Remarks: N/A

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02912	Portland ME	Motley St	Vitrified Clay Pipe		Combined
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2931	240		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-4620	211.7		8	8	



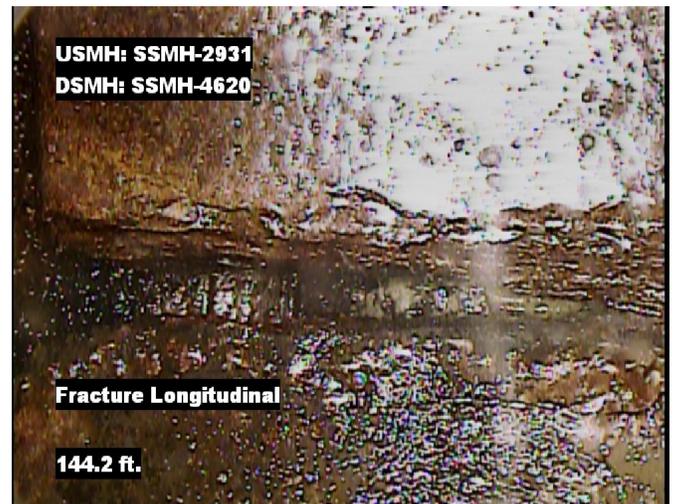
Distance: 85.3 ft. Grade: 5
 Condition: Broken Pipe Soil Visible
 Remarks: N/A



Distance: 86.2 ft. Grade: 0
 Condition: Tap Factory Made
 Remarks: N/A



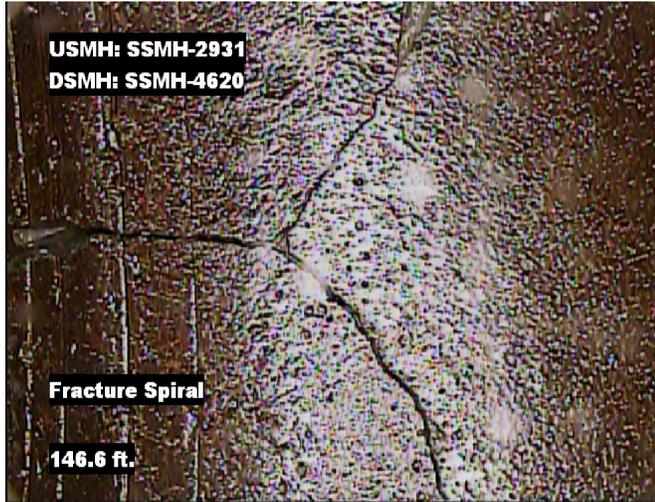
Distance: 108.0 ft. Grade: 0
 Condition: Tap Factory Made Capped
 Remarks: N/A



Distance: 144.2 ft. Grade: 3
 Condition: Fracture Longitudinal
 Remarks: N/A

Image Report 4/Page

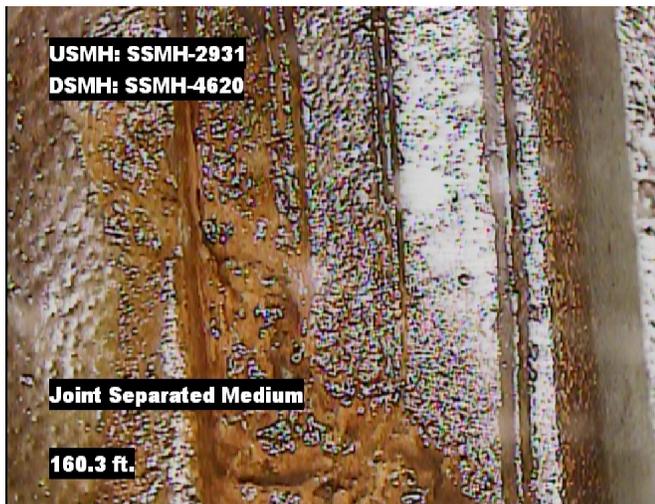
Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02912	Portland ME	Motley St	Vitrified Clay Pipe		Combined
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2931	240		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-4620	211.7		8	8	



Distance: 146.6 ft. Grade: 3
Condition: Fracture Spiral
Remarks: N/A



Distance: 156.6 ft. Grade: 1
Condition: Joint Separated Medium
Remarks: N/A



Distance: 160.3 ft. Grade: 1
Condition: Joint Separated Medium
Remarks: N/A



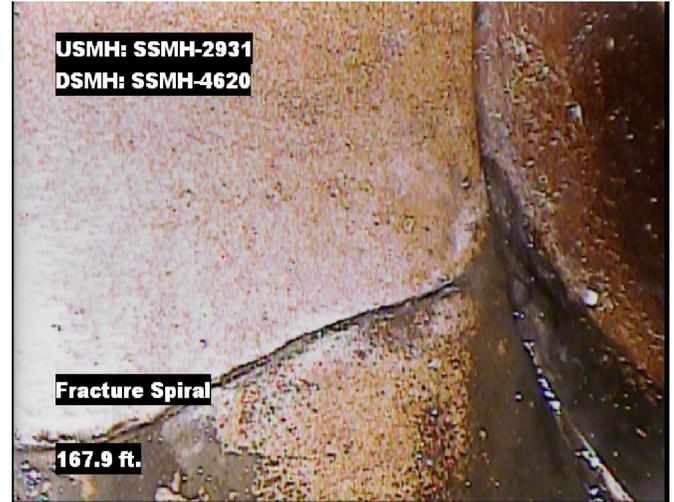
Distance: 164.2 ft. Grade: 0
Condition: Infiltration Stain
Remarks: N/A

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02912	Portland ME	Motley St	Vitrified Clay Pipe		Combined
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2931	240		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-4620	211.7		8	8	



Distance: 166.7 ft. Grade: 3
 Condition: Crack Multiple
 Remarks: N/A



Distance: 167.9 ft. Grade: 3
 Condition: Fracture Spiral
 Remarks: N/A



Distance: 170.2 ft. Grade: 0
 Condition: Infiltration Stain
 Remarks: N/A



Distance: 172.3 ft. Grade: 0
 Condition: Infiltration Stain
 Remarks: N/A

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02912	Portland ME	Motley St	Vitrified Clay Pipe		Combined
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2931	240		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-4620	211.7		8	8	



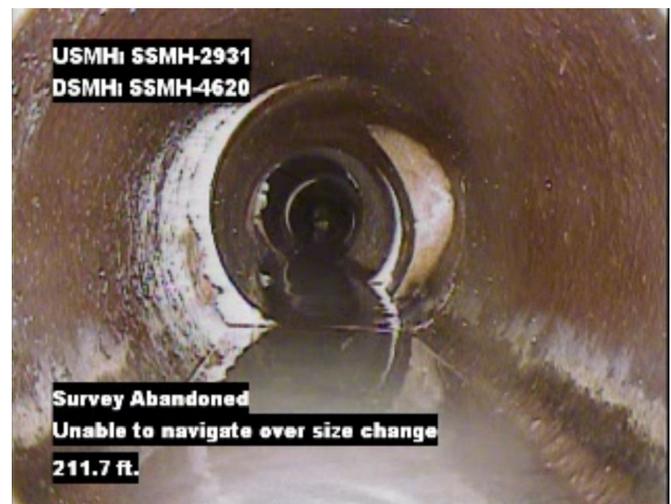
Distance: 193.0 ft. Grade: 2
Condition: Tap Break-In Intruding
Remarks: N/A



Distance: 211.7 ft. Grade: 0
Condition: Shape or Size Change
Remarks: N/A



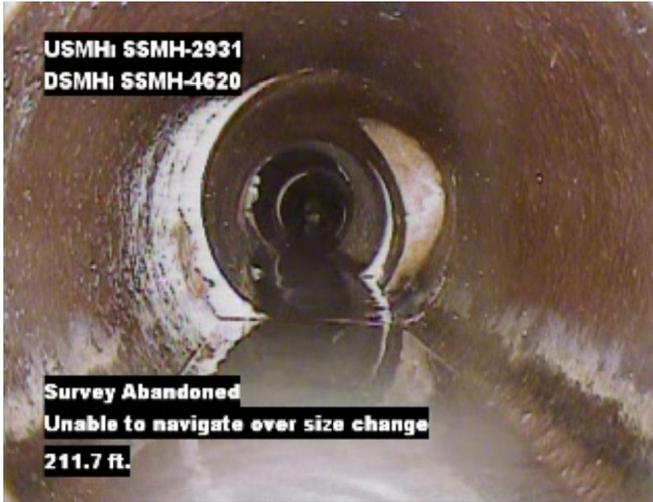
Distance: 211.7 ft. Grade: 0
Condition: Infiltration Stain
Remarks: N/A



Distance: 211.7 ft. Grade: 0
Condition: Survey Abandoned
Remarks: Unable to navigate over size change

Image Report 4/Page

Pipe Segment Refere... SSGM-02912	City Portland ME	Street Motley St	Pipe Material Vitrified Clay Pipe		Location C...	Pipe Use Combined
Upstream MH SSMH-2931	Total Length 240	Year Laid	Shape Circular		Location Details	
Downstream MH SSMH-4620	Length surveyed 211.7	Year Renewed	Height 8	Width 8	Pipe Joint...	



Distance:	211.7 ft.	Grade:	0
Condition:	Survey Abandoned		
Remarks:	Unable to navigate over size change		

PACP Conditions

Pipe Segment Refere... SSGM-02912	City Portland ME	Street Motley St	Pipe Material Vitrified Clay Pipe		Location C...	Pipe Use Combined
Upstream MH SSMH-2931	Total Length 240	Year Laid	Shape Circular		Location Details	
Downstream MH SSMH-4620	Length surveyed 211.7	Year Renewed	Height 8	Width 8	Pipe Joint...	

SPR 43	MPR 6	PO Number		Customer	
SPRI 3.3	MPRI 0.5	Work Order		City of Portland ME	
QSR 5441	QMR 2300			Purpose Routine Assessment	
OPR 49	Surveyed By Jon_Latham	Direction Downstream	Date 20190522		Media label
OPRI 2	Certificate Number U-1116-07006130	Pre-Cleaning No Pre-Cleaning	Time 13:32	Weather Dry	
Date Cleaned			End Time 13:52	Additional Info	

Normal Defects	Structural Ratings			O & M Ratings			Combined Ratings				
	Grade Rating	No. Occur.	Rating	Grade Rating	No. Occur.	Rating	Grade Rating	No. Occur.	Rating		
	1	2	2	1	0	0	1	2	2		
	2	1	2	2	3	6	2	4	8		
	3	5	15	3	0	0	3	5	15		
	4	1	4	4	0	0	4	1	4		
	5	4	20	5	0	0	5	4	20		
Continuous Defects											
Code	ID	Length									
IS	F01	39.4	0	0	0	0	8	0	0	8	0
Subtotals			13	Subtotals			3	Subtotals			16
SUMMARY			Pipe Rating	43	Pipe Rating	6	Overall Pipe Rating		49		
			Structural Index	3.3	O&M Index	2.0	Overall Index		3.1		
			Str. Quick Rating	5441	O&M Quick Rating	2300	Ovrl. Quick Rating		5441		

Defect Listing Plot Left

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	
SPR 5	MPR 10	PO Number		Customer	
SPRI 1.7	MPRI 1.4	Work Order		City of Portland ME	
QSR 2211	QMR 2314	M-19-0028004		Purpose	
OPR 15	Surveyed By	Direction	Date	Media label	
	Austin_Henault	Upstream	20190607		
OPRI 1.5	Certificate Number	Pre-Cleaning	Time	Weather	
	U-0218-070300735	Not Known	09:49	Damp	
	Date Cleaned		End Time	Additional Info	
			10:13		



SSMH-2931

Code:	Continuous:	Pos:	Val 1 / 2 :	% :	Gallons:
0.0 ft. Access Point Manhole SSMH-2931		0 - 0			
0.0 ft. Water Level		0 - 0		5	
6.0 ft. Deposits Attached Encrustation		9 - 0		5	
17.6 ft. Tap Factory Made Capped		10 - 0	4		
19.7 ft. Tap Factory Made Capped		2 - 0	4		
41.8 ft. Tap Factory Made Active		10 - 0	4		
43.9 ft. Tap Factory Made Capped		2 - 0	4		
58.0 ft. Tap Break-In Intruding		2 - 0	4 / 1		
62.9 ft. General Observation Mortar		0 - 0			
65.0 ft. General Observation Mortar		0 - 0			
68.2 ft. Tap Factory Made Capped		10 - 0	4		
70.5 ft. Tap Break-In		2 - 0	4		
73.0 ft. Infiltration Stain		9 - 0			
77.0 ft. Infiltration Stain		8 - 0			

Defect Listing Plot Left

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	

	Code:	Continuous:	Pos:	Val 1 / 2 :	% :	Gallons:
79.0 ft.	Infiltration Stain		5 - 0			
2	92.4 ft. Tap Break-In Intruding		9 - 0	4 / 1		
94.9 ft.	Tap Factory Made Capped		2 - 0	4		
2	101.0 ft. Crack Longitudinal		12 - 0			
119.0 ft.	Tap Factory Made Capped		10 - 0	4		
121.2 ft.	Tap Factory Made Capped		3 - 0	4		
141.1 ft.	Tap Factory Made Capped		9 - 0	4		
143.3 ft.	Tap Factory Made Capped		3 - 0	4		
2	147.7 ft. Crack Spiral		8 - 5			
167.7 ft.	Tap Factory Made Capped		9 - 0	4		
169.7 ft.	Tap Factory Made Capped		2 - 0	4		
1	170.3 ft. Roots Fine Joint		3 - 0			
1	172.4 ft. Roots Fine Joint		12 - 0			
1	174.4 ft. Roots Fine Joint		2 - 0			
174.4 ft.	Infiltration Stain		8 - 0			
176.3 ft.	Tap Factory Made		2 - 0	4		
1	176.3 ft. Roots Fine Joint		12 - 0			
1	176.6 ft. Crack Circumferential		10 - 2			
180.5 ft.	Access Point Manhole SSMH-2932		0 - 0			

Defect Listing Plot Left

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	

Code:

Continuous: Pos: Val 1 / 2 : % : Gallons:



SSMH-2932

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	



Distance: 0.0 ft. Grade: 0
Condition: Access Point Manhole
Remarks: SSMH-2931



Distance: 0.0 ft. Grade: 0
Condition: Water Level
Remarks: N/A



Distance: 6.0 ft. Grade: 2
Condition: Deposits Attached Encrustation
Remarks: N/A



Distance: 17.6 ft. Grade: 0
Condition: Tap Factory Made Capped
Remarks: N/A

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Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	



Distance: 19.7 ft. Grade: 0
Condition: Tap Factory Made Capped
Remarks: N/A



Distance: 41.8 ft. Grade: 0
Condition: Tap Factory Made Active
Remarks: N/A



Distance: 43.9 ft. Grade: 0
Condition: Tap Factory Made Capped
Remarks: N/A



Distance: 58.0 ft. Grade: 2
Condition: Tap Break-In Intruding
Remarks: N/A

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Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	



Distance: 62.9 ft. Grade: 0
 Condition: General Observation
 Remarks: Mortar



Distance: 65.0 ft. Grade: 0
 Condition: General Observation
 Remarks: Mortar



Distance: 68.2 ft. Grade: 0
 Condition: Tap Factory Made Capped
 Remarks: N/A



Distance: 70.5 ft. Grade: 0
 Condition: Tap Break-In
 Remarks: N/A

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Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	



Distance: 73.0 ft. Grade: 0
 Condition: Infiltration Stain
 Remarks: N/A



Distance: 77.0 ft. Grade: 0
 Condition: Infiltration Stain
 Remarks: N/A



Distance: 79.0 ft. Grade: 0
 Condition: Infiltration Stain
 Remarks: N/A



Distance: 92.4 ft. Grade: 2
 Condition: Tap Break-In Intruding
 Remarks: N/A

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Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	



Distance: 94.9 ft. Grade: 0
Condition: Tap Factory Made Capped
Remarks: N/A



Distance: 101.0 ft. Grade: 2
Condition: Crack Longitudinal
Remarks: N/A



Distance: 119.0 ft. Grade: 0
Condition: Tap Factory Made Capped
Remarks: N/A



Distance: 121.2 ft. Grade: 0
Condition: Tap Factory Made Capped
Remarks: N/A

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	



Distance: 141.1 ft. Grade: 0
Condition: Tap Factory Made Capped
Remarks: N/A



Distance: 143.3 ft. Grade: 0
Condition: Tap Factory Made Capped
Remarks: N/A



Distance: 147.7 ft. Grade: 2
Condition: Crack Spiral
Remarks: N/A



Distance: 167.7 ft. Grade: 0
Condition: Tap Factory Made Capped
Remarks: N/A

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	



Distance: 169.7 ft. Grade: 0
Condition: Tap Factory Made Capped
Remarks: N/A



Distance: 170.3 ft. Grade: 1
Condition: Roots Fine Joint
Remarks: N/A



Distance: 172.4 ft. Grade: 1
Condition: Roots Fine Joint
Remarks: N/A



Distance: 174.4 ft. Grade: 1
Condition: Roots Fine Joint
Remarks: N/A

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	



Distance: 174.4 ft. Grade: 0
Condition: Infiltration Stain
Remarks: N/A



Distance: 176.3 ft. Grade: 0
Condition: Tap Factory Made
Remarks: N/A



Distance: 176.3 ft. Grade: 1
Condition: Roots Fine Joint
Remarks: N/A



Distance: 176.6 ft. Grade: 1
Condition: Crack Circumferential
Remarks: N/A

Image Report 4/Page

Pipe Segment Refere...	City	Street	Pipe Material	Location C...	Pipe Use
SSGM-02911	Portland ME	Motley St	Vitrified Clay Pipe		Sanitary
Upstream MH	Total Length	Year Laid	Shape	Location Details	
SSMH-2932	180.5		Circular		
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...
SSMH-2931	180.5		8	8	



Distance: 180.5 ft. Grade: 0
 Condition: Access Point Manhole
 Remarks: SSMH-2932

