CITY OF PORTLAND, MAINE

DEPARTMENT OF PUBLIC SERVICES

CONTRACT AND SPECIFICATIONS

for

Morse Street Sewer Separation Project

Bid Number: 915

STATE OF MAINE
OWENS
A.
McCULLOUGH
No. 7122
LICENSED
PROFESSIONAL ENGINEER

Morse Street Sewer Separation

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ADVERTISEMENT: NOTICE TO CONTRACTORS

Bid No. 915
CITY OF PORTLAND, MAINE
DEPARTMENT OF PUBLIC SERVICES

Project Name: Morse Street Sewer Separation

Sealed proposals, addressed to Purchasing, Room 103, City Hall, 389 Congress Street, Portland, Maine 04101, and endorsed on the outside of the envelope with the name of the Bidder, Contract Name and Bid number will be received until 3:00 PM (prevailing time) on **August 21, 2014**, at which time they will be publicly opened and read.

Location: The Morse Street Sewer Separation (MSSS) is located along portions of Front Street, West Kidder Street, Fernald Street, Washington Avenue and Morse Street.

Outline of Work: The work includes the installation of 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. Work also includes (under separate contract with the Portland Water District) water renewal work in Washington Avenue and West Kidder Street.

Bid Note: The start of work for this project is anticipated to be September – October of 2014. Work that requires paving shall be completed through base paving by November 15, 2014. Work that cannot be completed by November 15, 2014 shall be completed through base paving by July 30, 2015. Surface paving must be completed by October 15, 2015 and the entire project ready for owner acceptance.

Bidders are required to complete the Portland Water District bid forms as provided in the Portland Water District Contract Documents. The selected Contractor will be required to enter into a separate contract with the Portland Water District and shall complete the required work in accordance with the Portland Water District Contract documents. The contactor shall coordinate, cooperate and schedule all work between the City of Portland and Portland Water District to ensure sewer separation work and water renewal work is completed in accordance with both the City of Portland and Portland Water District requirements.

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.

This project is being funded in part by the Clean Water State Revolving Loan Fund administered by the Maine DEP and the Maine Municipal Bond Bank. As such, the following additional requirements will apply to this contract:

MANDATORY PRE-BID CONFERENCE

There will be a mandatory Pre-Bid Conference for this project held at the Portland Department of **Public Services Training Room**, 55 Portland Street, Portland, Maine on **August 5, 2014 at 10:00 A.M**. Firms not represented at this meeting, or arriving late, will not be allowed to bid on this project.

BID BOND

A bid must be accompanied by Bid security made payable to the City 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.

AGENCY NOT A PARTY

This contract is expected to be funded in whole or in part by the State of Maine Department of Environmental Protection (DEP) Clean Water State Revolving Loan Fund (CWSRF) program. Neither the State of Maine nor any of its departments, agencies, or employees is or will be a party to this contract. The word "agency" in the contract documents refers to the DEP and all other involved funding agencies.

SRF DISADVANTAGED BUSINESS ENTERPRISES PROGRAM

The contractor must comply with the Disadvantaged Business Enterprises (DBE) SRF special requirements contained in the CWSRF Supplementary Conditions. Failure of the successful bidder to complete the pre-award requirements of this program may result in finding that the bidder is non-responsible and therefore not entitled to award of this contract.

FEDERAL REQUIREMENTS

The contractor must comply with all Federal Requirements per the CWSRF Supplementary Conditions, including submittal of pre-award certification regarding Lobbying.

DAVIS-BACON AND RELATED ACTS

The contractor must comply with Davis-Bacon (DB) and Davis-Bacon Related Acts (DBRA) as stated in the CWSRF Supplementary Conditions. All laborers and mechanics employed by the contractor and subcontractors on this project shall not be paid less than the prevailing wage rates contained in the wage determination published in the bidding documents. Any laborers and mechanics not listed in the wage determination shall be paid at least as much as the lowest wage rate for other similar trade classifications already contained in the wage determination published in the bidding documents.

AMERICAN IRON AND STEEL

The Contractor shall comply with the Use of American Iron and Steel requirements on this project.

GENERAL INFORMATION

Plans, specifications and proposal forms for the above named project may be seen at the City of Portland Engineering Office, Department of Public Services, 55 Portland Street, Portland, Maine or at the Purchasing Office, City Hall, Room 103, 389 Congress Street, Portland, Maine (phone

207-874-8654, fax 207-874-8652 or e-mail jrl@portlandmaine.gov). Plans and proposal books are available for purchase at the Purchasing Office, Room 103, City Hall, upon payment in advance of $100.00 or $125.00 to be mailed. Such payment will not be refunded. 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.

It is the custom of the City of Portland, Maine, to pay its bills 30 days after completion and acceptance of the work, and the receipt of properly documented invoices for that work covered under the contract. In submitting applications under these specifications, applicants should take into account all discounts, both trade and time, allowed in accordance with this payment policy and quote a net price.

CITY OF PORTLAND, MAINE by: Office of Budget & Purchasing

NOTICE TO BIDDERS

Bid No. 915
CITY OF PORTLAND, MAINE
DEPARTMENT OF PUBLIC SERVICES

PROJECT: MORSE STREET SEWER SEPARATION

Sealed bids for the above project, addressed to Purchasing office, City Hall, Room 103, 389 Congress Street, Portland, Maine 04101, and clearly marked on the outside of the envelope with the name of the bidder, project title and bid number, will be received until 3:00 PM on **August 21, 2014**, at which time they will be publicly opened. Late, unsigned bids or bids submitted electronically shall not be accepted. Bids shall remain open to acceptance for thirty days from their opening. Each bid shall be submitted on the forms provided and in an envelope plainly marked on the outside with the bid's title and number.

MANDATORY PRE-BID CONFERENCE

There will be a mandatory Pre-Bid Conference for this project held at the Portland Department of **Public Services Training Room**, 55 Portland Street, Portland, Maine on **August 5, 2014 at 10:00 A.M**. Firms not represented at this meeting, or arriving late, will not be allowed to bid on this project.

BID BOND

A bid must be accompanied by Bid security made payable to Owner 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.

AGENCY NOT A PARTY

This contract is expected to be funded in whole or in part by the State of Maine Department of Environmental Protection (DEP) Clean Water State Revolving Loan Fund (CWSRF) program. Neither the State of Maine nor any of its departments, agencies, or employees is or will be a party to this contract. The word "agency" in the contract documents refers to the DEP and all other involved funding agencies.

PERFORMANCE AND PAYMENT BOND

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

INSURANCE

The successful bidder shall agree to defend, indemnify and save the City harmless from all losses, costs or damages caused by its acts or those of its agents, and, before signing the contract, will produce evidence satisfactory to the City's Corporation Counsel of coverage for General Public and Automobile Liability insurance in amounts not less than $1,000,000 per person, for bodily injury, death and property damage, protecting the contractor and the City, and naming the City as an additional insured from such claims, and shall also procure Workers' Compensation insurance.

BASIS OF AWARD

Contract shall be awarded to the responsible bidder whose bid, complying with conditions and requirements provided in this Notice and bid form, is the lowest total base bid as identified on the bid form.

CONTRACT TIME

The start of work for this project is anticipated to be September – October of 2014. Work that requires paving shall be completed through base paving by November 15, 2014. Work that cannot be completed by November 15, 2014 shall be completed through base paving by July 30, 2015. Surface paving must be completed by October 15, 2015 and the entire project ready for owner acceptance

TAXES

The City is exempt from Maine state sales and use taxes on all materials to be incorporated in the work. Said taxes shall not be included in the bid. Detailed information can be found in the General Conditions and the CWSRF Supplementary Conditions.

AMERICAN IRON AND STEEL

The Contractor shall comply with the Use of American Iron and Steel in accordance with Public Law 113-76, Section 436. The law and its requirements and guidance, including certification forms, can be found in the SRF supplementary conditions.

SRF DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

The Contractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 40 CFR part 33, Disadvantaged Business Enterprises (DBE), in the award and administration of subcontracts. Failure by the Contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies.

1. During the bidding period, the Contractor is required to make the good faith efforts as described in the CWSRF Supplementary Conditions if they will be awarding subcontracts. Contractors should initiate solicitation efforts early in the bidding period.
2. The Contractor must comply with the following provisions when submitting their bid:
    a) The contractor must complete and submit EPA Form 6100–4, 'DBE Program Subcontractor Utilization Form' (**copy attached**) as part of the prime contractor's bid or proposal package to the Owner. Note, only DBE subcontractors should be listed. If no DBE subcontractors are to be used, the contractor must still complete and submit the form.
    b) The contractor must have each of its proposed DBE subcontractors complete the EPA Form 6100–3, 'DBE Program Subcontractor Performance Form' (**copy attached**). The completed forms must be submitted as part of the prime contractor's bid or proposal package to the Owner.
3. Prior to contract award, as the Successful Bidder, the Contractor must comply with the following provisions:
    a) The contractor must submit to the Owner documentation of its good faith efforts (such as copies of solicitation letters and emails) and data relied upon in

formulating its fair share objectives. Solicitation documentation must include proof of receipt. The records must be submitted to the Owner even if the goals were met.

b) The contractor must submit to the Owner a bidders list of all firms that bid or quote on subcontracts, including both MBE/WBEs and non-MBE/WBEs. The purpose of a bidders list is to provide contractors who conduct competitive bidding with as accurate a database as possible about the universe of MBE/WBE and non-MBE/WBE subcontractors. The list must include the following information:
   (1) Entity's name with point of contact;
   (2) Entity's mailing address, telephone number, and e-mail address;
   (3) The procurement on which the entity bid or quoted, and when; and
   (4) Entity's status as an MBE/WBE or non-MBE/WBE.

Additional information and forms may be found in the CWSRF Supplementary Conditions."

SUSPENSION AND DEBARMENT

The eligibility of successful bidder will be verified through the federal government's Excluded Parties List System prior to Maine Department of Environmental Protection approval of the contract award. Furthermore, by entering into the contract, the contractor shall certify that no part of the contract shall be subcontracted to a Debarred or Suspended person or firm. Detailed information may be found in the CWSRF Supplementary Conditions.

RESTRICTIONS ON LOBBYING

The successful bidder must submit certification regarding Lobbying (EPA form 6600-06) to the Owner prior to contract award. If applicable, the contractor shall also complete and submit the Disclosure of Lobbying Activities form (EPA Standard Form LLL) to the Owner prior to contract award. Detailed information and forms can be found in the CWSRF Supplementary Conditions.

DAVIS-BACON AND RELATED ACTS

The contractor must comply with Davis-Bacon (DB) and Davis-Bacon Related Acts (DBRA). All laborers and mechanics employed by the contractor and subcontractors on this project shall not be paid less than the prevailing wage rates contained in the wage determination published in these bidding documents. Any laborers and mechanics not listed in the wage determination but employed by the contractor and subcontractors on this project shall be paid at least as much as the lowest wage rate for other similar trade classifications already contained in the wage determination published in these bidding documents. A form 1444 submission will be required to obtain additional employee rate classifications, after contract award. No allowances or extra considerations on behalf of any contractor or subcontractor will be permitted subsequently by reason of error or oversight on account of Department of Labor wage determinations. The contractor and subcontractors shall pay all employees weekly. The contractor and subcontractors shall submit weekly certified payrolls to the owner or designated representative, including a payroll summary with signed certification form WH-347. Detailed information and forms can be found in the CWSRF Supplementary Conditions.

FEDERAL REQUIREMENTS

The contractor must comply with all Federal requirements found in the CWSRF Supplementary Conditions.

STATE MINIMUM WAGES

All laborers and mechanics employed or working upon the construction site of the project shall be paid not less than the prevailing State minimum wage rate regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

BID PROTESTS

All protests arising from the City's procurement practices must be submitted to the City as soon as practical. The City will investigate the basis for the protest, seek the advice of legal counsel, document all meetings and actions, and attempt to resolve the protest promptly and equitably.

MODIFYING OR WITHDRAWING OF BID

Bids may be modified or withdrawn as follows:

1. Before the time for bid opening:
   a. A bidder may modify a bid at any time by delivering an original, written notice of the modification signed by the bidder. The modification must be set forth clearly.
   b. Upon providing proof of identity, a bidder may withdraw a bid at any time by physically retrieving the bid, or by delivering an original, signed notice that the bid is withdrawn. Any bid security shall be returned to the bidder.
   c. It is solely the bidder's responsibility to properly deliver any written modification or withdrawal. Delivery must be made to the Procurement Official with responsibility for the bid.

2. After the time for bid opening:
   a. Bids may only be modified as determined by the City.
   b. Bids may only be withdrawn with the consent of a Procurement Official. The official has sole discretion to determine whether to permit the withdrawal of a bid or the release of any bid security.

EQUAL EMPLOYMENT OPPORTUNITIES

Vendor shall comply fully with the Nondiscrimination and Equal Opportunity Provisions of 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.

COORDINATION OF CITY AND PWD RENEWAL WORK

Bidders are required to complete the Portland Water District bid forms as provided in the Portland Water District Contract Documents. The selected Contractor will be required to enter into a separate contract with the Portland Water District and shall complete the required work in accordance with the Portland Water District Contract documents. The contactor shall coordinate, cooperate and schedule all work between the City of Portland and Portland Water District to ensure sewer separation work and water renewal work is completed in accordance with both the City of Portland and Portland Water District requirements.

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.

SUBMISSION OF BIDS

All Bids shall be submitted on the attached form and are to remain open for sixty (60) days after their opening. Late bids, bids without the required amount or form of surety, bids not signed and facsimile bids will not be accepted.

REJECTION OF BID

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.

LIEN WAIVERS

Prior to any payment by the City, the Contractor may be required to supply the City with a Waiver of Lien – Material and Labor for the total awarded contract cost, guaranteeing payment in full for all labor and materials used or required in connection with the work described in this bid. The City may also require waivers of lien, signed by individual subcontractors and materials suppliers, with requests for progress payments.

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 City) and promptly discharged by the Contractor at its own expense. If the Contractor should fail either to defend the City against the lien or to discharge it, then the City may do so at the Contractor's expense. In the event of such an undertaking by the City, the Contractor will promptly reimburse the City for all its costs and expenses in so doing including, but not limited to, reimbursement of the City's reasonable counsel fees and costs which may be incurred by it in substituting a bond in place of the lien.

CONTRACTOR RESPONSIBILITIES

The Contractor shall furnish all labor, materials, fixtures, supplies, equipment and transportation necessary to do the work as specified. Work shall be conducted in an orderly manner and all work shall be performed in accordance with best trade policy and in conformance with pertinent OSHA, Local, State and Federal Government regulations. Contractors will be responsible for acquiring all necessary permits, licenses and pay all associated fees (including dump disposal fees and disposal taxes, if applicable), unless otherwise specified herein.

The Contractor shall erect, and maintain at all times, any and all safeguards necessary for the protection of life and property of all maritime, pedestrian and vehicular traffic, where applicable.

GENERAL INFORMATION

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.

DISCLAIMER

The City disclaims any and all responsibility for injury to contractors, their agents or others while examining the job or at any other time.

July, 2014
Matthew F. Fitzgerald
Purchasing Agent

PROPOSAL

Bid No. 915
CITY OF PORTLAND, MAINE
DEPARTMENT OF PUBLIC SERVICES

PROJECT: MORSE STREET SEWER SEPARATION

The UNDERSIGNED hereby declares that he/she or they are the only person(s), firm or corporation interested in this application as principal, that it is made without any connection with any other person(s), firm or corporation submitting an application for the same.

The UNDERSIGNED hereby declares that they have read and understand all conditions as outlined in the invitation, and that the application is made in accordance with same.

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

The proposer acknowledges the receipt of Addenda numbered_____ (if applicable)

COMPANY NAME:_____
(Individual, Partnership, Corporation, Joint Venture)

AUTHORIZED SIGNATURE: _____ DATE: _____
(Officer, Authorized Individual or Owner)

PRINT NAME & TITLE: _____

ADDRESS:
_____

_____
Zip Code

TELEPHONE: _____ FAX: _____

24 HOUR #: _____

E-MAIL ADDRESS: _____

FEDERAL TAX I.D. NUMBER: _____
NOTE: All applications must bear the handwritten signature of a duly authorized member or employee of the organization making the application. This sheet must be signed and returned with proposal page..

		BASE BID	Unit Price		Amount	
Item No.	**Quantity**	**Item with Unit Bid Price Written in Words**	**Dollars**	**Cents**	**Dollars**	**Cents**
201.10	1 Lump Sum	Clearing @_____ _____ Per Lump Sum				
202.128	1 Lump Sum	Removing of existing curb, concrete sidewalks, and all other surfaces @_____ _____ Per Lump Sum				
202.20	1 Lump Sum	Removing Bituminous Concrete Pavement @_____ _____ Per Lump Sum				
203.20	3,800* Cubic Yard	Common Excavation @_____ _____ Per Cubic Yard				
203.21	500* Cubic Yard	Rock Excavation @_____ _____ Per Cubic Yard				
203.24	100* Cubic Yard	Common Borrow @_____ _____ Per Cubic Yard				
203.25	500* Cubic Yard	Granular Borrow @_____ _____ Per Cubic Yard				
203.28	160* Vertical Feet	Test Pit Excavation @_____ _____ Per Vertical Foot				

		BASE BID	Unit Price		Amount	
203.30	650* Cubic Yard	Contaminated Excavation, Transport & Disposal @_____ _____ Per Cubic Yard				
203.31	100* Cubic Yard	Crushed Stone 703.31 (Overdepth) @_____ _____ Per Cubic Yard				
203.32	1 Lump Sum	Extract, Treat and Dispose of Contaminated Groundwater @_____ _____ Per Lump Sum				
206.061	100* Cubic Yard	Structural Earth Excavation, Drainage & Minor Structures (Overdepth) @_____ _____ Per Cubic Yard				
206.07	600* Cubic Yard	Structural Rock Excavation @_____ _____ Per Cubic Yard				
304.09	1100 Cubic Yard	Aggregate Base Course - Crushed, Type “B” @_____ _____ Per Cubic Yard				
304.10	2400 Cubic Yard	Aggregate Subbase Course - Gravel, Type “D” – Non-SRF (associated West Kidder St. and other non-associated pay items as order by Engineer) @_____ _____ Per Cubic Yard				
403.207	1600 Ton	Hot Bituminous Pavement – HMA (19.0 mm) @_____ _____ Per Ton				

		BASE BID	Unit Price		Amount	
403.208	900 Ton	Hot Bituminous Pavement – HMA (12.5 mm) @_____ _____ Per Ton				
534.80	2 Each	6'x10' Precast Concrete Box Drain Manhole @_____ _____ Per Each				
603.79	1 Lump Sum	Clean Sewer Line and Remove Debris @_____ _____ Per Lump Sum				
603.80	1325 Linear Feet	8 Inch Diameter PVC Sewer Pipe (All Depths) @_____ _____ Per Linear Foot				
603.81	250 Linear Feet	12 Inch Diameter PVC Sewer Pipe (All Depths) @_____ _____ Per Linear Foot				
603.82	750 Linear Feet	15 Inch Diameter PVC Sewer Pipe (All Depths) @_____ _____ Per Linear Foot				
603.83	30 Linear Feet	21 Inch Diameter PVC Sewer Pipe (All Depths) @_____ _____ Per Linear Foot				
603.835	330 Linear Feet	10 Inch Diameter Storm Drain Pipe (All Depths) @_____ _____ Per Linear Foot				
603.84	420 Linear Feet	12 Inch Diameter Storm Drain Pipe (All Depths) @_____ _____ Per Linear Foot				

		BASE BID	Unit Price		Amount	
603.85	40 Linear Feet	15 Inch Diameter Storm Drain Pipe (All Depths) @_____ _____ Per Linear Foot				
603.86	1100 Linear Feet	18 Inch Diameter Storm Drain Pipe (All Depths) @_____ _____ Per Linear Foot				
603.87	400 Linear Feet	30 Inch Diameter Storm Drain Pipe (All Depths @_____ _____ Per Linear Foot				
603.88	750 Linear Feet	36 Inch Diameter Storm Drain Pipe (All Depths) @_____ _____ Per Linear Foot				
603.89	965 Linear Feet	42 Inch Diameter Storm Drain Pipe (All Depths) @_____ _____ Per Linear Foot				
603.90	760 Linear Feet	48 Inch Diameter Storm Drain Pipe (All Depths) @_____ _____ Per Linear Foot				
603.91	1 Each	12” CheckMate Backflow Valve by Tideflex Technologies @_____ _____ Per Each				
604.13	30 Each	Install 4 Foot Diameter Catch Basin, Type “E” @_____ _____ Per Each				
604.150	13 Each	Install 4 Foot Diameter Sewer Manhole @_____ _____ Per Each				

		BASE BID	Unit Price		Amount	
604.151	7 Each	Install 4 Foot Diameter Drain Manhole @_____ _____ Per Each				
604.152	4 Each	Install 6 Foot Diameter Sewer Manhole @_____ _____ Per Each				
604.153	4 Each	Install 6 Foot Diameter Drain Manhole @_____ _____ Per Each				
604.154	5 Each	Install 8 Foot Diameter Drain Manhole @_____ _____ Per Each				
604.155	1 Each	Install 10 Foot Diameter Drain Manhole @_____ _____ Per Each				
604.17	2* Each	Altering Catch Basin and Manhole @_____ _____ Per Each				
604.18	20* Each	Adjusting Catch Basins and Manholes to Grade @_____ _____ Per Each				
604.19	30* Each	Winterization @_____ _____ Per Each				
605.09	200* Linear Feet	6 Inch Diameter Underdrain, Type “B” @_____ _____ Per Linear Foot				

		BASE BID	Unit Price		Amount	
607.174	1 Lump Sum	Remove & Replace with New Post and Rail Fence @_____ _____ Per Lump Sum				
608.09	4 Each	Concrete Pedestrian Ramp with Detectable Warning Surface @_____ _____ Per Each				
608.10	1 Lump Sum	Rebuild Concrete Steps @_____ _____ Lump Sum				
608.25	220 Square Yard	Hot Bituminous Concrete Sidewalk @_____ _____ Per Square Yard				
608.26	850 Square Yard	Hot Bituminous Concrete Driveway @_____ _____ Per Square Yard				
608.27	400 Square Yard	5' Wide Stone Dust Trail @_____ _____ Per Square Yard				
609.34	150 Linear Feet	Remove & Reset Granite Curb, Type 1 – Straight @_____ _____ Per Linear Foot				
614.14	10* Each	Masonry Plug ≥ 8" @_____ _____ Per Each				
614.16	50* Cubic Yard	Flowable Concrete Fill @_____ _____ Per Cubic Yard				

		BASE BID	Unit Price		Amount	
615.071	1 Lump Sum	Loam, Seed and Mulch @_____ _____ Per Lump Sum				
615.072	1000 Square Yard	Sod @_____ _____ Per Square Yard				
629.05	40* Hour	Hand Labor, Straight Time @_____ _____ Per Hour				
629.06	40* Hour	Mason, Straight Time @_____ _____ Per Hour				
631.105	40* Hour	Air Tool and Compressor (Including Operator) @_____ _____ Per Hour				
631.12	40* Hour	All-Purpose Large Capacity Excavator (Including Operator) @_____ _____ Per Hour				
631.13	40* Hour	Bulldozer (Including Operator) @_____ _____ Per Hour				
631.171	40* Hour	Truck-Small (Including Operator) @_____ _____ Per Hour				
631.22	40* Hour	Front End Loader (Including Operator) @_____ _____ Per Hour				

		BASE BID	Unit Price		Amount	
631.36	40* Hour	Foreman, Straight Time @_____ _____ Per Hour				
632.04	51 Each	Four (4”) and Six (6") Inch Wye Pipe Connections @_____ _____ Per Each				
632.061	5 Each	Ten (10") Inch Inserta-Tee Pipe Connection @_____ _____ Per Each				
632.062	5 Each	Ten (10") Inch Wye Pipe Connection @_____ _____ Per Each				
632.063	1 Each	Ten (10") Inch Inserta-Wye Pipe Connection @_____ _____ Per Each				
633.07	1600 Linear Feet	Four (4") Inch and/or Six (6") Inch Diameter Sewer Laterals @_____ _____ Per Linear Foot				
633.08	50 Linear Feet	Four (4") Inch and/or Six (6") Inch Diameter Storm Drain Laterals @_____ _____ Per Linear Foot				
637.071	1 Lump Sum	Dust Control @_____ _____ Per Lump Sum				
640.1	25* Each	Renew Water Service 1” Inch Diameter Copper Service @_____ _____ Per Each				

		BASE BID	Unit Price		Amount	
640.2	1 Each	Renew Water Service 2” Inch Diameter Copper Service @_____ _____ Per Each				
640.3	40 Linear Feet	Rebuild Water Main 4” Inch Diameter Ductile Iron @_____ _____ Per Linear Foot				
646.0	2 Each	Back Flow Prevention Pit – Non-SRF @_____ _____ Per Each				
646.1	1 Lump Sum	Ice Skating Rink Regrading & Storm Drainage Basin – Non-SRF @_____ _____ Per Lump Sum				
652.39	1 Lump Sum	Work Zone Traffic Control @_____ _____ Per Lump Sum				
652.40	600 Hour	Flagger @_____ _____ Per Hour				
654.08	75* Each	Trench Density Test @_____ _____ Per Each				
654.09	75* Each	Roadway Density Test @_____ _____ Per Each				
656.75	1 Lump Sum	Temporary Soil Erosion and Water Pollution Control @_____ _____ Per Lump Sum				

		BASE BID	Unit Price		Amount	
670.10	1 Each	8'x16' Baffle Box @_____ _____ Per Each				
		TOTAL AMOUNT OF BASE BID PROPOSAL, WRITTEN AND IN FIGURES BASED ON ESTIMATE OF QUANTITIES. _____ _____ _____ _____				

The pay items with quantities marked with an asterisk (*) on the bid sheets are for quantities that are indeterminate. Some pay items with an asterisk (*) maybe for work that is not anticipated at time of bid. These items are part of the Contract Proposal and will also be used should any extra work be necessary. Actual quantities will be measured in the field or calculated from the contract drawings. The unit price will be used regardless of final quantity.

Washington Avenue and West Kidder Street Water Main Replacement, Portland

– Portland Water District

Item No.	Estimated Quantity	Item with Unit Bid Price Written in Words	Unit Price		Amount	
			Dollars	Cents	Dollars	Cents
W-1	1,235 l.f.	12-inch Ductile Iron Water Main @ _____ _____ Per Linear Foot				
W-2	450 l.f.	8-inch Ductile Iron Water Main @_____ _____ Per Linear Foot				
W-3	485 l.f.	4-inch Ductile Iron Water Main @_____ _____ Per Linear Foot				
W-4	2 ea	Hydrant Assembly @_____ _____ Per Each				

Item No.	Estimated Quantity	Item with Unit Bid Price Written in Words	Unit Price		Amount	
			Dollars	Cents	Dollars	Cents
W-5	4 ea	12-inch MJ Gate Valve @_____ _____ Per Each				
W-6	1 ea	8-inch Cut-In MJ Gate Valve @_____ _____ Per Each				
W-7	3 ea	8-inch MJ Gate Valve @_____ _____ Per Each				
W-8	1 ea	4-inch MJ Gate Valve @_____ _____ Per Each				
		Amount Carried Forward				
W-9	Lump Sum	Remove Existing Valve & Install 8-inch Cap @_____ _____ Lump Sum				
W-10	10 ea	1-inch Air Release Valve @_____ _____ Per Each				
W-11	1 ea	2-inch Blow-Off Assembly @_____ _____ Per Each				
W-12	1 ea	2-inch Copper Service - Shortside @_____ _____ Per Each				

Item No.	Estimated Quantity	Item with Unit Bid Price Written in Words	Unit Price		Amount	
			Dollars	Cents	Dollars	Cents
W-13	19 ea	1-inch Copper Service - Shortside @_____ _____ Per Each				
W-14	18 ea	1-inch Copper Service - Longside @_____ _____ Per Each				
W-15	200 c.y.	Gravel Borrow @_____ _____ Per Cubic Yard				
W-16	100 c.y.	Rock Excavation @_____ _____ Per Cubic Yard				
		Amount Carried Forward				
W-17	100 c.y.	Unsuitable Material Excav. Below Grade @_____ _____ Per Cubic Yard				
W-18	1,000 hr	Flagger @_____ _____ Per Hour				
W-19	100 hr	Uniformed Police Officer @_____ _____ Per Hour				
W-20	10 hr	Foreman @_____ _____ Per Hour				

Item No.	Estimated Quantity	Item with Unit Bid Price Written in Words	Unit Price		Amount	
			Dollars	Cents	Dollars	Cents
W-21	10 hr	Laborer @_____ _____ Per Hour				
W-22	10 hr	Excavator w/Operator @_____ _____ Per Hour				
W-23	10 hr	Loader w/Operator @_____ _____ Per Hour				
W-24	10 hr	Dump Truck w/Driver @_____ _____ Per Hour				
TOTAL AMOUNT WRITTEN IN NUMBERS						

Sewer Separation Bid = $_____

Water Main Replacement Bid = $_____

Sewer Separation Bid + Water Main Replacement Bid = $_____
(Basis of Award)

The undersigned also agrees as follows:

FIRST: To do any extra work, not covered by the above schedule of items, which may be ordered, and to accept as full compensation therefore such prices as may be agreed upon in writing by the Engineer and the Contractor; or in case no agreement is made, to accept as full compensation the amount determined upon a "force account" basis as provided in the M.D.O.T. Standard Specifications, Revision of December 2002.

SECOND: To begin work on the date specified in the Engineer's "Notice to Commence Work" and to prosecute said work in such a manner as to complete it within the time limits given in the

Special Provisions. Further, that monies will be deducted as liquidated damages at the rate specified in Subsection 107.7.2 "Schedule of Liquidated Damages" for each day that the work shall remain uncompleted after the time herein specified for completion of the work.

THIRD: That this offer is to continue open to acceptance until the formal contract is executed by the successful bidder of this work, and the City may at any time without notice accept this proposal whether any other proposal has previously been accepted or not. Provided, however, that the City will accept, in writing, one of the proposals made, or reject all proposals made, within sixty (60) calendar days after the date of opening of the proposals.

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

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

Respectfully submitted this _____ day of _____, 20 _____

IF AN INDIVIDUAL, SIGN HERE

Signature of Bidder_____

Address_____

_____

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

PROPOSAL (continued)

IF A FIRM OR PARTNERSHIP, SIGN HERE

Signature of Bidder_____

Name of Firm or Partnership_____

Business Address_____

Telephone Number_____ Fax Number_____

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

Names and Addresses of Members of Firm or Partnership:

_____

_____

_____

IF A CORPORATION, SIGN HERE

Name of Bidder_____

Authorized Signature_____
(name) (title)

Business Address_____

Telephone Number_____ Fax Number_____

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

Incorporated under the Laws of the State of_____

Names and Addresses of Officers of the Corporation:

President_____

Secretary _____

Treasurer _____ss

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

Date: _____

_____
Notary Public - Signature and Seal

ALL CORPORATIONS MUST SIGN THIS FORM
AND SUBMIT WITH THE BID PROPOSAL

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

_____

_____

_____

_____

_____
(date)

The above is a true copy of the records of the_____

Corporation, which records are in my legal custody.

_____
Officer having custody of the records

_____ss

Before me appeared, _____

_____ of the _____ Corporation, and

made oath that the above statement is true.

_____
Notary Public - Signature and Seal

NOTICE

(This Must Be Filled Out)

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

_____ _____

_____ _____

_____ _____

ALL CONTRACTORS SHALL FILL IN THE FOLLOWING INFORMATION
BEFORE SUBMITTING BID

	Name and Address of Contractor	Products to be Supplied
1		
2		
3		
4		
5		
6		
7		

	Name and Address of Contractor	Service or Trades to be Supplied	Anticipated $ Amount
1			
2			
3			
4			
5			
6			
7			

This contract document is for informational/sample purposes. The City may use the contract enclosed, but reserves the right to modify the contract agreement prior to its execution.

SAMPLE AGREEMENT
BETWEEN THE CITY OF PORTLAND
AND
_____

AGREEMENT entered into this _____ day of _____, 2014, by and between the **CITY OF PORTLAND**, a body politic and corporate, (hereinafter the "**CITY**"), and_____, a corporation with a mailing address of_____ (hereinafter the "**CONTRACTOR**").

W I T N E S S E T H

WHEREAS, the **CITY** did advertise for Requests for Bids by Bid #____ titled

_____;

and

WHEREAS, the **CONTRACTOR** did under date of _____

_____, 2014, submit a bid for such work; and

WHEREAS, after due consideration of all of the bids the **CITY** did award the bid to the

CONTRACTOR; and

NOW, THEREFORE, in consideration of the mutual promises made by each party to the other, the parties covenant and agree as follows:

1. The **CONTRACTOR** will furnish the materials, supplies, equipment and labor and will perform all work required to construct separated storm and sewer infrastructure_(hereinafter the "Work"), in accordance with the specifications contained in the Notice and Specifications issued to the Contractors under date of _____ by the Purchasing Manager for the City of Portland, and also in accordance with **CONTRACTOR**'s Proposal dated _____ _____.

   A copy of said Notice and Specifications, including all items in TABLE OF CONTENTS, ADDENDUMS, and **CONTRACTOR**'s Proposal are attached to this Agreement and made a part herein to include, but not limited to:

Standard General Conditions of the Construction Contract (EJCDC)
CWSRF Supplementary Conditions

Portland Water District (PWD) Construction Documents
Boring Logs

Attached Plans:

Contract Drawings Pages 1 through 29

The restatement of any of the terms contained in the Notice and Specifications or Proposal shall not be deemed to waive any terms not so restated. If a disagreement is found between the said attachments and this document, then this document shall govern; provided, however, that this document and its attachments shall be construed to be supplemental to one another to the extent possible.

2. **CONTRACTOR** covenants and agrees that all work performed and materials used shall be free from all defects, and that all work shall be performed in a good workmanlike manner. Unless a longer warranty period is specified in the attachments hereto, all Work provided hereunder shall be warranted by **CONTRACTOR** for one (1) full year from the date of completion of all Work hereunder and acceptance thereof by the **CITY**. Notwithstanding the foregoing, any longer period specified in the attachments shall stay in effect. **CONTRACTOR** shall perform in compliance with all applicable federal, state and local laws and rules and shall obtain at its own cost all necessary permits.

3. Prior to the execution of this Agreement, **CONTRACTOR** will procure and maintain Public Liability Insurance coverage and Automobile Insurance coverage for the Work agreed to under this Agreement and as outlined within the contract documents, whether such operations be by themselves or by any subcontractor under them, with a limit of liability of not less than $1,000,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than $1,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than $500,000 for all property damage sustained by any one person in any one accident-, and a limit of liability of not less than $500,000 aggregate for any such damage sustained by two or more persons in any one accident. Name **CITY** as an additional insured on the policy, and provide the **CITY** a certificate of insurance evidencing such coverage, in this way: certificate must say either: A) “the policy actually been endorsed to name the City of Portland as an Additional Insured” and copy of the endorsement must come to the City of Portland with the certificate, or B) “the policy already includes an endorsement, such as the General Liability Expansion Endorsement, by which the City of Portland is, in fact, automatically made an additional insured.” A Certificate which merely has a box checked under ‘Addl Insr,” or the like, or which merely states The City of Portland is named an Additional Insured, will not be acceptable. **CONTRACTOR**

shall furnish and thereafter maintain certificates evidencing such coverage, which certificates shall guarantee thirty (30) days' notice to **CITY** of termination of insurance from insurance company or agent.

4. The **CONTRACTOR** shall furnish to the **CITY**, upon execution of this Agreement, a Contract Performance Bond and a Contract Labor and Material Payment Bond each in the amount of _____ _____Dollars ($_____.00), guaranteeing one hundred percent (100%) performance of this Agreement, including the guarantee period, and free and clear of any and all liens, attachments and encumbrances.

   The Bonds shall remain in effect for one (1) year after final acceptance of the Work, and protect the **CITY**'s interest in the one (1) year guaranty of workmanship and materials, and also shall insure settlement of claims, for the payment of all bills for labor, materials and equipment by the **CONTRACTOR**.

5. To the fullest extent permitted by law, the **CONTRACTOR** shall defend, indemnify and hold harmless the **CITY**, its officers and employees, from and against all claims, damages, losses, and expenses, just or unjust, including but not limited to the costs of defense and attorney's fees arising out of or resulting from the performance of this Agreement, provided that any such claims, damage, loss or expense (1) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, including the loss of use therefrom, and (2) is caused in whole or in part by any negligent act or omission of the **CONTRACTOR**, anyone directly or indirectly employed by it, or anyone for whose act it may be liable.

   CONTRACTOR shall further defend, indemnify and hold the **CITY** harmless from any claim or lien of any nature filed against the **CITY** or its property as a result of services performed or materials provided under this Agreement by a subcontractor, supplier or anyone employed by **CONTRACTOR.** In the event such claim or lien is filed against **CITY, CONTRACTOR** shall defend such claim on behalf of **CITY** by counsel acceptable to **CITY** or shall otherwise discharge such claim or lien by a means acceptable to **CITY**. **CITY**'s acceptance hereunder shall not be unreasonably withheld.

6. **CONTRACTOR** shall begin Work upon issuance of a notice to proceed issued by the **CITY**'s Director of Public Services (hereinafter "Director") and shall complete the Work no later than _____. Placement of final surface course pavement shall be completed after _____. The time for performance may be extended by the written consent of the Director or her designee.

7. The **CONTRACTOR** shall perform the work to the satisfaction of the responsible **CITY** official who will have the right of inspection at all times, and whose approval and acceptance of the work will be a condition precedent to payments by the **CITY** under this Contract. **Engineers** will have the authority to stop work in progress if such work is being done contrary to the plans, specifications, or engineering practice. In the event that any dispute arises as to the amount,

nature or scope of the Work required under this Contract, the decision and judgment of the responsible **CITY** official will be final and binding.

8. Upon performance of all the terms and conditions of this Agreement, **CITY** will pay **CONTRACTOR** _____ _____Dollars ($_____.00), in full payment for the **CONTRACTOR**'s performance.

9. **CONTRACTOR** shall keep accurate records of all Work performed and furnished under this Agreement and shall submit such information on monthly invoices. Payment for such Work shall be made to **CONTRACTOR** not more than thirty (30) days after receipt of an invoice and acceptance of the Work by the **CITY**.

10. **CITY** reserves the right to require **CONTRACTOR** to provide waivers of lien for labor and materials prior to the issuance of final payment by the **CITY**.

11. Payment shall be in accordance with Section 108 – 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 the **CITY** may determine or may withhold, including but not limited to liquidated damages in accordance with general conditions:
    a. 95 percent of work completed (with balance being retainage); and
    b. 95 percent of cost of materials and equipment not incorporated in the work (with balance being retainage)

    Upon substantial completion, the **CITY** shall pay an amount sufficient to increase total payments to the **CONTRACTOR** to 98 percent of the work completed, less such amounts as the **CITY** 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.

12. The **CITY** may terminate this Agreement for cause by written Notice to the **CONTRACTOR**. In the event of such termination, **CONTRACTOR** shall receive compensation for any satisfactory work completed prior to termination.

13. The **CITY** shall have the right to terminate this Agreement at any time for its convenience on prior written Notice to **CONTRACTOR**. If Agreement is terminated by the **CITY** for convenience, the **CITY** shall pay the **CONTRACTOR** for any unpaid, unrecovered, or unrecoverable out-of-pocket costs for supplies, materials and/or services provided or amounts expended or incurred in reliance on this Agreement prior to the effective date of such notice.

14. Any disputes arising out of or in the course of this Agreement, which are not settled by mutual agreement of the parties, shall be resolved in the courts of the State of Maine.

15. Out of concern for the public, **CITY** employees and **CONTRACTOR**'s employees, all work performed by **CONTRACTOR** shall be in conformance with pertinent OSHA, local, state and federal government regulations.

16. Winter construction will be permitted along Front Street in areas that are not paved and does not impact water services. The start of work for this project is anticipated to be August - September of 2014. Work that requires paving shall be completed through base paving by November 15, 2014. Work that cannot be completed by November 15, 2014 shall be completed through base paving by July 30, 2015. Surface paving must be completed by October 15, 2015 and the entire project ready for owner acceptance.

    Work may occur simultaneously in both Front Street, West Kidder Street, Fernald Street, Washington Avenue and Morse Street; however, all roads must be open to traffic no later than October 21, 2014.

    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.

    CONTRACTOR shall provide a minimum of one loader and necessary personnel for the project site which shall be used for the removal of ice and/or snow during the winter period. CONTRACTOR shall plow and remove snow and ice within the area of the project's winter work including but not limited to maintaining access to driveways and side streets, crosswalks and sidewalks. All areas shall have snow and ice removed within 6 hours of start of any storm event. CONTRACTOR shall clear the access to driveways and road crossings of snow within the area impacted by the project's winter work. CONTRACTOR shall remove stockpiled snow from the project area when it is necessary for work progress (when the stockpiled snow impacts traffic or when the stockpiled snow impacts sidewalks and school routes).

    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.

    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. The Contractor shall be reasonable for this work which shall be considered incidental to the project.

    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.

    The City will not be reimbursed for sand/salt treatment, snow plowing, or snow and ice removal operations associated with this project.

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. Any shut-down shall not relieve the contractor of the required completion dates. The contractor shall not be entitled to any claims or extra costs.

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.

IN WITNESS WHEREOF, the said **CITY OF PORTLAND** has caused this Agreement to be signed and sealed by Mark H. Rees, its City Manager, thereunto duly authorized, and _____has caused this Agreement to be signed and sealed by _____, its _____ thereunto duly authorized, the day and year first above written.

WITNESS:

_____

WITNESS:

_____

CITY OF PORTLAND

By:_____
Mark H. Rees
It's City Manager

_____

By:_____

_____
(Print or type name)

Its_____

Approved as to form:

_____
Corporation Counsel's Office

Approved as to funds:

_____
Budget Office

SAMPLE CONTRACT ADDENDUM

ADDENDUM #X
To Contract Documents For:

City of Portland Bid Number:
Project Dated:

Current Date: XXXX
The attention of firms submitting proposals for the work named in the above Invitation is called to the following modifications to the documents as were issued.

The items set forth herein, whether of clarification, omission, addition and/or substitution, shall be included and form a part of the Contractor's submitted material and the corresponding Contract when executed. No claim for additional compensation, due to lack of knowledge of the contents of this Addendum will be considered.

****

ALL BIDDERS ARE ADVISED THAT RECEIPT OF THIS NOTICE MUST BE DULY ACKNOWLEDGED ON THE BID PROPOSAL FORM OR BY THE INSERTION OF THIS SHEET, SIGNED, AND SUBMITTED WITH YOUR PROPOSAL.

****

MATTHEW F. FITZGERALD
PURCHASING MANAGER

NOTE: Questions and Answers are listed on the following pages.

Receipt of **Addendum No. X** to the City of Portland's **BID #____:**
_____ is hereby acknowledged.

COMPANY:
_____

NAME:
_____

SIGNED BY:
_____DATE:_____

PRINT NAME & TITLE:
_____

ADDRESS:
_____

_____
Zip Code

SAMPLE NOTICE OF AWARD

Date

Addressee

RE: NOTICE OF AWARD

Dear

Your firm has been awarded the contract for the subject project for your total low bid of $_____. This letter will serve as notice of award and that the contract documents are ready for signature.

A pre-construction conference will be scheduled for a later date, in the Engineering Office, 55 Portland Street. Please be prepared to execute the contract within twelve (12) calendar days of this letter, as per the contract documents. You must have your firm's corporate seal on your person at the time of execution.

Separate performance and payment bonds in the full amount of the bid and the following insurance certificates shall be executed and presented for approval: insurance coverages for Contractor's Public Liability Insurance shall have $1,000,000 limits. The standard Certificate of Insurance forms shall have the cancellation statement edited. The words "endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company" shall be crossed out. Evidence of proper Workers' Compensation Insurance and Blast Damage Insurance, if applicable, must also be presented for approval.

Should you have any questions pertaining to the above, please contact me at 874-8846.

Very truly yours,
CITY OF PORTLAND

Project Engineer

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged and a copy returned to the City of Portland.

By _____ Title _____

This, the _____ day of _____, 2012.

SAMPLE NOTICE TO COMMENCE WORK

Date

Addressee

RE: NOTICE TO COMMENCE WORK

Dear

You are hereby notified to commence work in accordance with the Agreement dated _____, 2014, on or before _____, 2014, and you are to complete the work by ____, 2014 with finish paving compete by ____, 2014. The date of completion of all work is therefore _____.

Very truly yours,
CITY OF PORTLAND

Project Engineer

ACCEPTANCE OF NOTICE

Receipt of the Above NOTICE TO COMMENCE WORK is hereby acknowledged by:

_____ this, the _____ day of _____, 2012.

By:_____

Title:_____

SAMPLE NOTICE OF FINAL COMPLETION

Date

Addressee

RE: NOTICE OF FINAL COMPLETION

Dear

The subject project was inspected on _____, by _____ _____, and was found to be fully completed in accordance with the contract plans and specifications.

The work is hereby approved and accepted by the City of Portland as of _____, which begins the one year guarantee period. At this point it is essential that the city is provided with the attached statement and lien waiver *(as well as subcontractor/supplier lien waivers) certifying that all the obligations for equipment rentals, materials and supplies purchased, and labor employed on this project have been discharged. If you have any questions please feel free to call me at 874-8846.

Yours truly,
CITY OF PORTLAND

Project Engineer

WAIVER OF LIEN - MATERIAL OR LABOR

State of _____

County of _____

To all whom it may concern:

The undersigned _____ has been employed to furnish _____ for the project known as _____,

City of Portland, County of Cumberland, State of Maine.

The undersigned for and in consideration of the sum of $ _____ and other good and valuable consideration the receipt whereof is hereby acknowledged, do hereby waive and release any and all rights and liens, or claim of right to lien on said above described project under the statutes of the State of Maine relating to Mechanic's Lien on account of Labor or Material or both furnished or which may be furnished by the undersigned to or on account of said _____ for said building and premises.

This Waiver of Lien shall become effective upon the issuance of a check by the City of Portland payable to _____ and _____ in the amount of _____.

Given under oath, my hand and seal this _____ day of _____, 20 _____.

By:_____

_____

(Print or type name)

Its_____

Notarized: _____ this _____ day of _____, 20 _____.

My commission expires

WAIVER OF LIEN - (Subcontractor/Supplier/Employee)

The undersigned _____ has
(Sub-Contractor)
performed labor and furnished materials and/or performed services for _____ on behalf of the City of Portland, in
(Contractor)
performance of the contractor's agreement of _____ with the City
(Date)
of Portland for the _____
(Project name)
at _____
(Address)

In consideration of the sum of $ _____, the undersigned hereby waives all rights and liens, including, but not limited to, liens pursuant to 10 M.R.S.A. Sec. 3251, et. seq., which the undersigned may now or hereafter claim or assert against the above described building, appurtenance, wharf, pier and/or land; the above-described project; and the City of Portland.

This Waiver of Lien shall become effective upon the issuance of a check by the City of Portland payable to _____ in the amount of $_____.

IN WITNESS WHEREOF the undersigned has hereto set its hand this _____ day of _____, 20_____.

By:_____
(print or type name)

Its_____

State of Maine
_____,ss

Before me appeared _____ and acknowledged that the signature to the preceding waiver is his/her signature in his/her official capacity.

Date:_____

_____
(Notary Public)

SAMPLE CONTRACTOR'S FINAL AFFIDAVIT

STATE OF MAINE

COUNTY OF CUMBERLAND

Before me, the undersigned, a _____
(Notary Public/Justice of the Peace/Alderman)

in and for said County and State personally appeared:

(Printed Name) _____
(Individual, Partner or duly authorized representative of corporate contractor)

Who being duly sworn according to law deposes and says that the cost of all the Work, and outstanding claims and indebtedness of whatever nature arising out of the performance of the contract between

Owner: CITY OF PORTLAND

And Contractor: _____

Of (Address): _____

Dated (Agreement Date): _____

For the construction of (Project): _____

and necessary appurtenant installations have been paid in full.

Signature: _____
(Individual, Partner, or duly authorized representative of corporate contractor)

Sworn to and subscribed before me this _____ day of _____, 2012.

Signature: _____

SAMPLE SOLICITATION LETTER TO MBE/WBE FIRMS *(See *)*

Date: _____

From: _____
(Name of Contractor)

_____ _____
(Street Address) (Fax #)

_____ _____
(City, State and Zip Code) (E-mail Address)

To: _____
(Name of MBE or WBE firm)

_____ _____
(Street Address of MBE or WBE firm) (Fax #)

_____ _____
(City, State and Zip Code) (E-mail Address)

Please be advised that the City of Portland, Maine; Department of Public Services, has solicited contractor's bids for the construction of the Project: _____
(Project Name)

The City of Portland will open bids for said project on: _____
(Bid Opening Date)

We hereby invite you and solicit from you, as an MBE or WBE subcontractor and/or materialman, a sub-bid and/or materials price quote for all labor, services and/or materials which you are capable of providing to us for said project. We expect the amount of any such sub-bid and/or materials price quote to be both reasonable and competitive or we will not accept it.

Our name, business address and phone number are shown above. You may review the plans, specifications and other pertinent Contract Documents at our offices at above address at any time, during usual business hours, prior to the bid opening date.

We must receive your sub-bid and/or materials price quote, in writing, early enough, prior to the bid opening date, to permit us to reasonable review it and to act upon it.

If you need any information pertaining to the project or to a sub-bid and/or materials price quote to be submitted, please contact:

_____at our offices during usual business hours.
(Contact & Phone Number)

* If letter is mailed it must be sent USPS Certified Mail

Please respond by fax or email back to this office as soon as possible.

_____ _____will ____will not be bidding on the above referenced project.
(Name of Bidder)

By: _____
(Signature) (Printed Name) (Date)

CONTRACT DOCUMENTS AND SPECIFICATIONS

The City of Portland, Maine has chosen to pursue funding of this contract under the Clean Water State Revolving Loan Fund (CWSRF) administered by the Maine Department of Environmental Protection (MDEP). As such, several modifications have been made to the contract to incorporated language used as a guideline under the CWSRF program. This includes the Standard General Conditions of the Construction Contract, as prepared by the Engineers Joint Contract Documents Committee (EJCDC C-700). Please note that there are also CWSRF Supplementary Conditions attached to the rear of that document which will impact this contract.

The City of Portland, Maine has also adopted for this project the "State of Maine, Department of Transportation, Standard Specifications, Revision of December, 2002", including all current additions or modifications thereof, including the most resent version of the MDOT "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 http://www.state.me.us/mdot/contractor-consultant-information/contractor cons.php. The exceptions being Section 401 – Plant Mix Pavements and Section 403 – Hot Bituminous Pavement, which shall be in accordance with the MaineDOT's April 1995 Standard Specifications.

It is the intent of the EJCDC C-700 guideline to replace Division 100 – General Conditions and Division 100 – Appendix A of the MDOT Standard Specifications.

The City of Portland has also made specific changes to the MDOT Standard Specifications to incorporate the City of Portland's Technical and Design Standards and Guidelines, Revision December 2002. As such, the Contract Agreement, Special Provisions and Supplemental Specifications contained hereinafter shall take precedence and shall govern in any case of conflict with the MDOT Standard Specification. Supplemental Specifications are modifications, additions and deletions to the Standard Specifications. Special Provisions are specifications in the contract that are for additional items not covered in the Standard Specifications.

PRIORITY OF CONFLICTING CONTRACT DOCUMENTS

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 MDOT Standard Specifications).

In the case of ambiguity, etc., the following components of the Contract Documents shall control in the following descending order of priority:

City of Portland Bid Addendum (most recent to least recent)
Project Specific Permit Requirements
City of Portland Special Provisions
City of Portland Notes on Plans
City of Portland Plans
City of Portland Supplemental Specifications
City of Portland Supplemental Standard Details
City of Portland Standard Details
EJCDC C-700 Standard General Conditions
MDOT Repair Specifications
MDOT Standard Specifications
CWSRF Supplementary Conditions

SPECIAL PROVISIONS

The following Supplemental Specifications and Special Provisions shall amend the "State of Maine, Department of Transportation, Standard Specifications, Revision of December, 2002". In case of conflicts, these Supplemental Specifications (1) and Special Provisions (2) shall take precedence and shall govern.

(1) Supplemental Specifications - modifications, additions and deletions to the existing Standard Specifications.
(2) Special Provisions - specifications in the contract which are for additional items not covered in the Standard Specifications.

1. <u>Working Hours</u>

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

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. 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.

2. <u>Utility Coordination</u>

The sewer separation project includes construction in proximity to electrical, water and gas 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.

3. <u>Notification of Residents</u>

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.

4. <u>Traffic Signs</u>

All existing traffic signs which are to be removed during construction shall be carefully dismounted and the posts removed and shall be stacked in an area approved by the Engineer. The Contractor shall protect the signs from damage while in his possession and shall repair, at no additional cost to the City, any damages cause by his operations.

Stop signs are to be maintained at their original locations at all times during the progress of the work.

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.

Contractor shall provide, install and maintain the required signage meeting the requirements of the Clean Water State Revolving Fund (CWSRF) requirements described in the contract documents.

This work shall be considered as subsidiary obligation of the contract for which no specific payment will be made.

5. <u>Protection of Trees</u>

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.

a) Tree protection standards - This shall include construction fencing / protection of the tree root zone, no storage of construction equipment or materials within the drip line area of existing trees. Pro-active tree pruning prior to construction activities is required and shall be coordinated with the City Arborist. This cost shall be incidental to the costs of construction.

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

6. <u>Maintenance and Protection of Traffic</u>

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 shall provide and maintain electronic variable message boards (VMB's) throughout construction. The Contractor shall provide up to five VMB's two weeks prior to and for the first two weeks of construction at locations designated by the City of Portland. During construction, the Contractor shall provide and maintain two VMB's at locations stipulated by the City of Portland.

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 City provided traffic control plan and contract documents together with any additional 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 traffic maintenance requirements which shall be the contractor's sole responsibility to provide and maintain at the contractors 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.

7. Materials

Materials shall meet the requirements specified in the specifications. Equals may 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.

8. Survey

The City of Portland, Department of Public Services will establish a single construction layout. This layout will include PK Nails at control points tied into the project work. The Contractor shall be responsible for maintaining these controls during construction and providing all additional survey required, which shall be done by a competent Engineer or Surveyor.

9. Sheeting and Bracing

Any sheeting and/or bracing required for the satisfactory installation of drainage and/or sanitary sewerage structures 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.

10. Waste Areas

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.

11. Occupational Safety and Health

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.

12. Preconstruction Conference

A conference will be held at 55 Portland Street, 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.

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.

13. Schedule of Operations

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.

14. Setting of Pipes to Line and Grade

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.

15. Extent of Open Excavation

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.

16. Traffic Officers

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.

17. Limitation of Operations

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. 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.

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

Waste and surplus material shall not be stockpiled, but shall be disposed of in areas as designated in Section 203.06, Waste Areas, of the Supplemental Specifications.

18. Dust Control For Street

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

19. Trench Pavement Replacement

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.

20. City of Portland's Street Excavation Ordinance

The Contractor is hereby advised that all work shall conform to the regulations of Chapter 25 of the Municipal Code, "Excavations in 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.

21. Questions Regarding Plan and Documents

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.

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 this contract will not be binding. Receipt of any addenda must be acknowledged in writing as part of a proposal. Each bidder shall be responsible for ensuring that they have received any and all addenda. The City shall not assume responsibility for the receipt by the Contractor for any addenda.

22. Record Drawings

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. 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. 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.

23. Waste Material

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.

24. Quality Assurance

The Contractor shall be responsible at all times for maintaining top 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.

If required, 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. A minimum of one density test per 100 feet of trench may be required. The Contractor shall be responsible for procuring and paying for the testing services. Satisfactory compaction shall be a minimum of 90% of the maximum density for the embankment and a minimum of 95% of the maximum density for gravel base course and subbase gravel course.

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.

25. Sanitary Facilities

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

26. Bids

No bids shall be withdrawn within a period of sixty (60) days after the opening of the bids.

27. Subsurface Soils Information

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.

28. Unauthorized Use of Fire Hydrants

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. Private contractors providing services to the City for, street sweepers, jet machines, and lining services, are required to apply to the Portland Water District for a hydrant meter and back flow device installations. The approved applicants will pay for the installation and removal of the hydrant meter and back flow device and all water recorded by the meter. 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. 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.

29. Project Funding

The proposed project is part of the City of Portland Combined Sewer Overflow (CSO) Abatement plan and is subject to Portland City Council review and funding approval. The project is financed through the State of Maine Clean Water State Revolving Fund (CWSRF) and shall be subject to the conditions outlined herein, including the Engineers Joint Contract Documents Committee (EJCDC) Standard General Conditions C-700 and CWSRF supplemental conditions.

30. Combined Sewer Flows

The project work will involve combined sewers. As such the Contactor shall take all necessary health and safety precautions when working in and around this line.

31. Anti-Idling Policy

Please note, following the Special Provisions of the Bid Document is a copy of the City's Administrative Regulation #25 regarding 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.

32. Working Drawings

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 105.7 of the Standard Specifications.

32. 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 Services Department.

33. 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.

34. Excavation and Site Dewatering

Excavation and installation of storm drains, waterlines, sewers, services and associated structures will require continuous dewatering through-out construction. Contractor is responsible for preparing and implementing a dewatering plan meeting environmental regulations and requirements stipulated within the contract documents and plans. Prior to construction, the contractor shall submit a written dewatering plan and shall meet with City representatives to review the dewatering plan. 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. 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.

35. Winter Maintenance

Limited winter construction will be permitted on this Project as stipulated in contract documents.

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.

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.

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. The City shall consider reasonable payment for required hot mix asphalt or concrete if it is determined that roadway conditions require placement of such for maintenance of the project winter work area.

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.

The City will not reimburse for sand/salt treatment, snow plowing, or snow and ice removal operations associated with this project.

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.

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.

36. Bypass Pumping

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 and PWD review and approval. Bypass pumping and other required work to maintain flows shall be considered incidental to the related pipe pay item.

37. Removal of Existing Structures

Removal of existing structures encountered during excavation, storm drains, sewer pipes or other pipe 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.

38. Costs of Construction

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

CAD RELEASE FORM

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 Services Department
55 Portland Street
Portland, ME 04101

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/Land Desktop Version: 2006

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 2009. 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: _____

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 our 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.

STORM 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_____

_____

_____

_____

_____

_____

_____

SUPPLEMENTAL SPECIFICATIONS

SECTION 101 - CONTRACT INTERPRETATION

Scope of Section

This Section contains abbreviations, definitions, and general rules of interpretation and shall apply with the following additions or 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 Services 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 Services, 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 Services, City of Portland, Maine acting through its Director or through his duly authorized representative.

SECTION 102 - BIDDING

Scope of Section

This Section includes requirements related to eligibility to Bid and the Bidding process from advertisement to Bids, through Bid Opening, to the analysis of Bids.

102.1.4 Qualifications of Bidder

The following paragraph will be added as Section 102.1.4: The City reserves the right to reject any bid if the evidence submitted by, or the investigation of such bidder, fails to satisfy the City that such bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein. The City reserves the right to reject any or all bids if it would be in the public interest to do so. "The City reserves the right to substantiate bidder's qualifications, capability to perform, availability, past performance record and verify that the bidder is current in its financial obligations to the City."

102.3 Examination of documents, site and other information

This subsection shall be amended by the addition of the following paragraph: Plans, Specifications and Proposal Forms may be seen at the Engineering Office, Department of Public Services, 55 Portland Street, Portland, Maine; or may be obtained at the Purchasing Office (electronic format only), Room 103, City Hall, upon payment as specified in the published "Notice to Contractors".

102.5.1 Questions from Bidders

This subsection shall be amended to read as follows: Bidders shall direct all technical or Engineering questions including requests for explanations or interpretation or for the use of products or methods other than those described in the specifications in writing to the Purchasing Office not later than five (5) working days prior to the date designated for the opening of the bids. All answers to such requests will be made as addenda to the contract and will be issued in writing to all Bidders.

No oral interpretation will be given to the contract documents.

102.5.2 Bidder's Duty To Notify Department If Ambiguities Discovered

Bidders shall not take advantage of any ambiguity, error, omission, conflict, or discrepancy ("ambiguity, etc.") relating to the Bid Documents, Geotechnical Information, site conditions, or any other information that may significantly affect the cost, quality, Conformity, or timeliness of the Work. If a Bidder discovers any such ambiguity, etc., it must notify the Bid Contact Person immediately in writing. Failure to provide such notice constitutes a waiver of any claim for entitlement for additional compensation or time related to such ambiguity, etc.

102.7.1 Location and Time

This subsection shall be amended to read as follows: Each proposal shall be submitted, document intact, in a sealed envelope. The envelope shall be clearly marked to indicate the name of the Bidder, contract name, bid number and be addressed to Purchasing, Room 103, City Hall, 389 Congress Street, Portland, Maine 04101. Proposals may be mailed or delivered in person, but they shall be filed prior to

the time and at the place specified in the Notice to Contractors. Proposals received after the time for opening of bids will be returned to the bidder unopened.

102.7.2 Effects of Signing and Delivery of Bids

This subsection shall be amended by the addition of the following: Corporations will be required to affix their corporate seal on their proposals.

SECTION 103 - AWARD AND CONTRACTING

Scope of Section

This Section includes requirements related to the final determination of Bid responsiveness and Award and execution of the Contract.

103.3.2 Notice of Determination

This subsection shall be amended by the addition of the following paragraph: The City reserves the right to reject any bid if the evidence submitted by, or the investigation of such bidder, fails to satisfy the City that such bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein. The City reserves the right to reject any or all bids if it would be in the public interest to do so. A proposal which includes a combination of abnormally low and abnormally high unit prices, which results in an unbalanced bid, may be rejected. "The City reserves the right to substantiate bidder's qualifications, capability to perform, availability, past performance record and then verify that the bidder is current in its financial obligations to the City."

103.4 Notice of Award

This subsection shall be amended to read as follows: The award of contract, if it be awarded, shall be made within sixty (60) days after the opening of proposals to the lowest responsible and qualified bidder whose proposal complies with all the requirements prescribed. The successful bidder will be notified by mail at the address shown on his proposal, that his bid has been accepted and that he has been awarded the contract.

SECTION 104 - GENERAL RIGHTS AND RESPONSIBILITIES

Scope of Section

This Section sets forth certain rights and responsibilities of the Department and the Contractor that are generally applicable to all contracts. This Section is not all inclusive and additional rights and responsibilities are set forth elsewhere in the Contract.

104.2.3 Authority of Project Manager and Resident

This subsection shall be amended by the addition of the following paragraph: The Engineer will not be responsible for nor issue directions regarding the Contractor's safety precautions or programs; nor will they issue directions relative to, or assume control over any aspect of the methods, techniques or procedures of construction.

104.4.6 Utility coordination

This subsection shall be amended by the addition of the following paragraphs: 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.

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 shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangement operations in order that these operations may progress in a reasonable, and the duplication or rearrangement work may be reduced to a minimum, and that services rendered by those parties will not be unnecessarily interrupted.

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.

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.

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.

Bidders are required to complete the Portland Water District bid forms as provided in the Portland Water District Contract Documents. The selected Contractor will be required to enter into a separate contract with the Portland Water District and shall complete the required work in accordance with the Portland Water District Contract documents. The contactor shall coordinate, cooperate and schedule all work between the City of Portland and Portland Water District to ensure sewer separation work and water renewal work is completed in accordance with both the City of Portland and Portland Water District requirements.

The Contractor shall notify Dig Safe prior to the start of excavation.

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:

Electric:
Central Maine Power Company
162 Canco Road
Portland ME 04103
Attention:
Breanne Pierce
Tom Atwood

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:
John Caprio

Fire Alarm:
Portland Fire Department - Electric
109 Middle Street
Portland ME 04101
Attention:
Ben Diaz

Gas:
Unitil Corporation
1075 Forest Avenue
Portland ME 04103
Attention:
Matt Doughty
Craig Campbell

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

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

Sewer:
Dept. of Public Services
55 Portland Street
Portland ME 04101
Attention:
John Emerson

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

104.5.10 Warranty and Maintenance Bonds

This subsection shall be amended to read as follows: Warranty and Maintenance Bonds may be required of the Contractor or the subcontractor for specified items that the Department deems appropriate. The Bond must name the "City of Portland" as an obligee. The Contractor shall provide a copy of said bond to the Department as part of the projects closeout documentation prior to final acceptance. Should the subcontractor

be required to provide a Warranty or Maintenance Bond, the Contractor hereby authorizes the Department to directly contact Landscape Subcontractor and/or its Surety in the event of a failure of the bonded item to perform as specified. The amount and duration of the Warranty and Maintenance bond for each project will be stated in the contract agreement.

SECTION 105 - GENERAL SCOPE OF WORK

Scope of Section

This Section contains Work requirements that are generally within the scope of all Projects. These include provisions related to health and safety, traffic control, maintenance of Work, hauling of Materials and Equipment, construction surveying, Working Drawings, the environment, historic and archeological considerations, equal opportunity and civil rights, and other federal requirements. This Section is not all-inclusive. The scope of these items is often described more specifically and fully elsewhere in the Contract and in other specific items that appear elsewhere.

SECTION 106 – QUALITY

Scope of Section

This Section contains general provisions related to the Quality of Work including roles, standards, Materials, Quality Control, Acceptance, Non-conforming Work, and warranties.

SECTION 107 - TIME

The provisions of Section 107 of the Standard Specifications shall apply with the following additions.

107.1 Contract Time and Contract Completion Date

Work on this project shall be completed as specified in the Notice to Bidders and Agreement between the City of Portland and the Contractor.

107.7 Liquidated Damages

107.7.1 General

Except as expressly provided otherwise in this Contract, the Contractor shall owe the City the per diem amount specified in Section 107.7.2 – Schedule of Liquidated Damages for each day that any portion of the Work remains incomplete after the Contract Time has expired.

Liquidated Damages will be deducted from amounts otherwise due the Contractor. For related provisions, see Sections 107.1 – Contract Time, 107.5.1(D) – Winter Suspensions – Impact on Liquidated Damages, and Section 109.5 – Adjustments for Delay.

Permission for the Contractor or the Surety to continue and finish Work after the Contract Time has expired shall not waive the City's rights to assess Liquidated Damages.

107.7.2 Schedule of Liquidated Damages

The specific per diem rates for Liquidated Damages are set forth below. By executing the Contract, the Contractor acknowledges that such an amount in not a penalty and that the daily amount set forth in the Contract is reasonable per diem forecast of damages incurred by the City due to the Contractor's failure to complete the Work within the Contract Time.

Original Contract Amount		Per Diem Amount of Liquidated Damages
From More Than	To and Including	Calendar Day
$ 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

SECTION 108 - PAYMENT

Scope of Section

This Section contains general provisions related to payment including measurement of quantities, progress payment, retainage, the right to withhold payment, and other payment-related items.

108.3 Retainage

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:

A. 95 percent of work completed (with balance being retainage); and
B. 95 percent of cost of materials and equipment not incorporated in the work (with balance being retainage)

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.

108.4.1 Price Adjustment for Hot Mix Asphalt

This Subsection is revised by applying the following additions and modifications:

For all contracts with hot mix asphalt, a price adjustment for performance graded binder will be made for the following pay items:

Item 403.206 Hot Mix Asphalt - 25 mm
Item 403.207 Hot Mix Asphalt - 19 mm
Item 403.208 Hot Mix Asphalt - 12.5 mm
Item 403.209 Hot Mix Asphalt - 9.5 mm (sidewalks, drives, & incidentals)
Item 403.210 Hot Mix Asphalt - 9.5 mm
Item 403.211 Hot Mix Asphalt - Shim
Item 403.212 Hot Mix Asphalt - 4.75 mm
Item 403.213 Hot Mix Asphalt - 12.5 mm (base and intermediate course)

Price adjustments will be based on the variance in costs for the performance graded binder component of hot mix asphalt. They will be determined as follows:

The quantity of hot mix asphalt for each pay item will be multiplied by the performance graded binder percentages given in the table below times the difference in price between the base price and the period price of asphalt cement. Adjustments will be made upward or downward, as prices increase or decrease.

Item 403.206: 4.8%	Item 403.210: 6.2%
Item 403.207: 5.2%	Item 403.211: 6.2%
Item 403.208: 5.6%	Item 403.212: 6.8%
Item 403.209: 6.2%	Item 403.213: 5.6%

Hot Mix Asphalt: The quantity of hot mix asphalt will be determined from the quantity shown on the progress estimate for each pay period.

Base Price: The base price of performance graded binder to be used is the price per standard ton current with the bid opening date. This price is determined by using the average New England Selling Price, as listed in the Asphalt Weekly Monitor.

Period Price: The period price of performance graded binder will be determined by the Department by using the average New England Selling Price, listed in the Asphalt Weekly Monitor current with the date of asphalt placement. The maximum Period Price for paving after the adjusted Contract Completion Date will be the Period Price on the adjusted Contract Completion Date.

108.8 Final Payment

This subsection is revised by adding the following paragraphs: Prior to final payment the following shall be accomplished:

A. Contractor and the Engineer shall jointly inspect the project to assure completion of all items including Punch List.
B. Contractor shall submit Record Drawings indicating all changes and additions made during construction.
C. Waivers of Lien shall be provided to the City for the project.
D. Contractor shall submit the Warranty and Maintenance Bonds in the amount specified in the contract.
E. Contractor shall submit all Service Lateral Records.
F. 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.
G. Final Acceptance Notification will be prepared by the City and forwarded to the Contractor for the project along with Final Payment.
H. Final Contractor Lien Waiver needs to be signed and forwarded to the City.

CONTRACTOR'S FINAL AFFIDAVIT

STATE OF MAINE

COUNTY OF CUMBERLAND

Before me, the undersigned, a _____
(Notary Public/Justice of Peace/Alderman)

in and for said County and State personally appeared:

(Printed Name) _____
(Individual, Partner or duly authorized representative of corporate contractor)

Who being duly sworn according to law deposes and says that the cost of all the Work, and outstanding claims and indebtedness of whatever nature arising out of the performance of the contract between

Owner: CITY OF PORTLAND

And Contractor: _____

Of (Address): _____

Dated (Agreement Date): _____

For the construction of (Project): Morse Street Sewer Separation
and necessary appurtenant installations have been paid in full.

Signature: _____
(Individual, Partner, or duly authorized representative of corporate contractor)

Sworn to and subscribed before me this _____ day of _____, 2012.

Signature: _____

SECTION 109 - CHANGES

Scope of Section

This Section contains general provisions related to changes in quantities, scope, time and payment.

SECTION 110 - INDEMNIFICATION, BONDING, AND INSURANCE

Scope of Section

This Section contains general requirements for indemnification, bonding, and insurance by the Contractor.

A pre-construction video survey of the roadway work area shall be completed. The Contractor shall utilize digital photographs and video to obtain a visual record of the project area. Notify Engineer at least three (3) working days prior to photographing or videoing the project area so Engineer may, at his option, observe. Quality shall be such that the condition of existing pavement, curbing, driveway entrances, sidewalks, etc. can be readily determined. 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. Submit hard copy prints and electronic files on CD ROM, and video electronic files on DVD to the Engineer and Owner prior to any construction work.

110.2 Bonding

This subsection is amended by the addition of the following: whenever the word "Treasurer of the State of Maine" appears in the Standard Specifications, it shall mean the City of Portland, Maine.

110.3 Insurance

This subsection shall be amended to read as follows: Before work is started under the contract, the Contractor will be required to file with the City of Portland, a Certificate of Insurance, executed by an insurance company or companies satisfactory to the City and licensed by the State of Maine Insurance Department to do business in the State of Maine, stating that the Contractor carries insurance in accordance with the following requirements and stipulations:

A. 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.

B. Commercial General Liability: Operations under the CONTRACT DOCUMENTS, whether such operations be by themselves or by any SUBCONTRACTOR under them, requires insurance to be written with a limit of liability of not less than $1,000,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than $1,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of

liability of not less than $500,000 for all property damage sustained by any one person in any one accident-, and a limit of liability of not less than $500,000 aggregate for any such damage sustained by two or more persons in any one accident. The insurance certificate shall also name the City as additional insured on Liability portions (not W/C). The standard Certificate of Insurance forms shall have the cancellation statement edited. The words “endeavor to” and “but failure to mail such notice shall impose no obligation or liability of any kind upon the company” shall be crossed out.

C. Public Liability and Automobile Liability Insurance: CONTRACTOR will procure and maintain Public Liability Insurance coverage and Automobile Insurance coverage for the Work agreed to under this Agreement and as outlined within the contract documents, whether such operations be by themselves or by any subcontractor under them, with a limit of liability of not less than $1,000,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than $1,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than $500,000 for all property damage sustained by any one person in any one accident-, and a limit of liability of not less than $500,000 aggregate for any such damage sustained by two or more persons in any one accident. Name CITY as an additional insured on the policy, and provide the CITY a certificate of insurance evidencing such coverage, in this way: certificate must say either: A) “the policy actually been endorsed to name the City of Portland as an Additional Insured” and copy of the endorsement must come to the City of Portland with the certificate, or B) “the policy already includes an endorsement, such as the General Liability Expansion Endorsement, by which the City of Portland is, in fact, automatically made an additional insured.” A Certificate which merely has a box checked under ‘Addl Insr,” or the like, or which merely states The City of Portland is named an Additional Insured, will not be acceptable. CONTRACTOR shall furnish and thereafter maintain certificates evidencing such coverage, which certificates shall guarantee thirty (30) days' notice to CITY of termination of insurance from insurance company or agent.

D. Blasting: When explosives are to be used in the prosecution of the work, the insurance required under paragraphs (a), (b), and (c) above shall also contain provisions for protection, in the amounts stated, against damage claims due to such use of explosives.

E. Execution and Limitation: Each policy shall be signed by the President and Secretary of the insurance company and shall be countersigned by a licensed resident agent in the State of Maine as an authorized representative of the company.

F. Claims: 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.

G. Compliance: with the requirements of this subsection may be met by procurement of insurance covering all work under contract with the City or may be met by procurement of separate insurance for each individual contract. In either case a Certificate of Insurance shall be filed for each contract to show evidence that all required insurance has been obtained.

H. Termination or Change of Insurance: Each insurance policy shall be endorsed to provide that the insurance company shall notify the City by certified mail at least 30

days in advance of cancellations or of any change in the policy. No change shall be made without prior written approval of the City. The Contractor shall keep all the required insurances in continuous effect until 31 days after the date of final acceptance of the project or until such time as may be established by the City.

I. Contractual Liability Insurance: The Contractor shall carry Contractual Liability Insurance covering the liability Contractor has assumed under the contact to indemnify and save harmless the City of Portland, its officers and employees with respect to bodily injuries in or death of any person or persons or injury to or destruction of property. The limits for such insurance shall be not less than those specified for Commercial General Liability Insurance in paragraph (b) above.

SECTION 111 - RESOLUTION OF DISPUTES

Scope of Section

This Section is replaced with EJCDC C-700.

SECTION 112 - DEFAULT AND TERMINATION

Scope of Section

This Section is replaced with EJCDC C-700.

SECTION 201 - CLEARING

The provisions of Section 201 of the Standard Specifications shall apply with the following additions and modifications.

201.10 Description

The accepted quantity for clearing shall be at the contract lump sum price which price will be full compensation for clearing and stump removal of all work areas.

The contractor shall contact the City Arborist, Jeff Tarling, Parks and Forestry Operations Manager, (207) 874-8793, in the case that a determination is necessary for removal of trees or other vegetation beyond those identified on the plans.

The contractor shall protect trees of all diameters and all shrubs, unless specifically noted for removal.

Payment will be made under:

Pay Item		Pay Unit
201.10	Clearing	Lump Sum

SECTION 202 - REMOVING STRUCTURES AND OBSTRUCTIONS

The provisions of Section 202 of the Standard Specifications shall apply with the following additions and modifications:

202.03 Removing Existing Superstructure, Structural Concrete, Railings, Curbs, 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.

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.

202.05 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 (Milling)

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.

202.07 Method of Measurement

Driveway butt joints are incidental to the contract 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.

Saw cutting pavement is incidental to the contract and shall not require measurement.

202.08 Basis of Payment

The accepted quantity of removal of existing bituminous pavement surface shall be at the contract unit price per lump sum which price will be full compensation for removal of the pavement surface by a milling operation, excavation or other method, dust control, hauling, placement of a bituminous leveling course, temporary removal of detrimental objects and all tools, equipment, labor and other materials necessary to satisfactorily complete the work.

Payment will be made under:

Pay Item		Pay Unit
202.128	Removing of existing curb, concrete sidewalks, and all other surfaces	Lump Sum
202.20	Removing Bituminous Concrete Pavement	Lump Sum

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."

The second sentence of Paragraph (a) shall be modified by deleting "when each is less than 2 m^3 (2 yd^3) in volume."

Paragraph (b) shall be modified to read by deleting "each having a volume of 2 m^3 (2 yd^3) or more and substituting the following: "each having a volume of ½ m^3 (½ yd^3) 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 203.30.

Contaminated Groundwater:

The treatment and disposal of groundwater shall be the contractor's responsibility. Groundwater suspected to be contaminated will be sampled and tested by the City of Portland. It is anticipated that contaminated groundwater may include high VOC's and contain metals exceeding regulatory limits. If contaminated groundwater above regulatory limits is encountered, contractor shall stop excavation activities until the environmental impact and disposal requirements are determined. This work shall be considered incidental to the costs of construction. Any delays or work stoppage to allow for analytical testing shall be considered incidental to construction and no extra payment or claim shall be allowed.

Contaminated groundwater shall become the contractor's responsibility. The Contractor shall implement the following Groundwater Management Program.

Treatment System: The Contractor shall treat contaminated groundwater using bag filters and granular activated carbon (GAC) filters before discharge to the onsite sewer manhole. Groundwater from the excavation shall be pumped to one 21,000 gallon frac tank before treatment. The frac tank will provide residence time which aids in settling of suspended solids. A gas powered centrifugal pump shall pump water from the frac tank through 25, 10 micron bag filters followed by two 2,000 lb GAC units installed in series.

The bag filter provides removal of suspended solids and the GAC provides VOC removal. For uninterrupted dewatering and treatment, the bag filter skid unit shall have two housings piped in parallel with each housing unit sized to handle the maximum design flow of 100 gpm. The treated effluent from the GAC shall run through a mechanical flow meter and a totalizer and discharge to the on-site site sewer manhole. The expected dewatering flow rate range is 20-70 gpm. At a flow rate of 68 gpm, 2 x 2,000 pound carbon provides a contact time of 15 minutes. Prior to the start of construction, the contractor shall provide the Engineer with drawings and material specifications for the treatment system.

Operation: During discharge activities, the treatment system will be manned by the Contractor who will operate and maintain the treatment system. The Contractor shall notify the City of Portland Engineering Division each day that sewer discharge is expected. Discharge to the sewer during a rain event will not occur unless special approval is granted by the City of Portland Engineering Division.

The treatment of contaminated groundwater will be paid for under pay item 203.32.

Contaminated groundwater determined to be within acceptable limits as approved by the PWD and City of Portland shall be directed into the sanitary sewer system. The contractor shall implement dewatering including sedimentation removal into the sanitary sewer with approval by the PWD and City of Portland. Work required for conveying groundwater into the City sanitary sewer system shall be considered incidental to the cost of construction.

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. Rock backfill shall not be placed within 18 inches of the surface of the finish grade.

2. 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.

   The Contractor shall be responsible to provide evidence of a fill permit if the disposal location is in the City of Portland.

2. 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.

Cobble stones, bricks and curbing removed shall remain the property of the City and shall be disposed of, after removing all excess granular materials there from, at a site to be determined at the time of construction and as directed by the project 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.

In the fourth paragraph of this section, the sentence stating, "when measured in vehicles, the quantity for payment shall be 90 per cent of the quantity determined for earth", the 90 shall be amended to 80.

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:

Pay Item		Pay Unit
203.20	Common Excavation	Cubic Yard
203.21	Rock Excavation	Cubic Yard
203.24	Common Borrow	Cubic Yard
203.25	Granular Borrow	Cubic Yard
203.28	Test Pit Excavation	Vertical Foot
203.30	Contaminated Excavation, Transport & Disposal	Cubic Yard
203.31	Crushed Stone 703.31 (Overdepth)	Cubic Yard
203.32	Extract, Treat and Dispose of Contaminated Groundwater	Lump Sum

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 concrete box structure conduit item. For Structural Rock Excavation, Pay limits for rock excavation in trenches shall be limited to the actual pipe/conduit width plus 24” on each side and 24” below the bottom of the pipe or conduit. 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 203.31.

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.

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.

Payment will be made under:

Pay Item		Pay Unit
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 304.09 – Aggregate Base Course – Crushed Type “B”, and 304.10 – Aggregate Subbase Course – Gravel Type “D”.

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.

Payment will be made under:

Pay Item		Pay Unit
304.09	Aggregate Base Course - Crushed, Type "B"	Cubic Yard
304.10	Aggregate Subbase Course - Gravel, Type "D" - Non-SRF	Cubic Yard

SECTION 401 – PLANT MIX PAVEMENTS – GENERAL

The provisions of Section 401 of the "State of Maine, Department of Transportation, Standard Specifications (for) Highways and Bridges, Revisions of December 2002" 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 BITUMINOUS PAVEMENT

The provisions of Section 403 of the "State of Maine, Department of Transportation, Standard Specifications (for) Highways and Bridges, Revisions of December 2002" shall apply with the following additions and modifications:

403.03 General

This section shall include Hot Bituminous Pavement – Grading “B” (19.0 mm) and Grading “C” (12.5 mm).

Work that requires paving shall be completed through base paving by November 15, 2014. Work that cannot be completed by November 15, 2014 shall be completed through base paving by July 30, 2015. Surface paving must be completed by October 15, 2015 and the entire project ready for owner acceptance. Temporary trench patch asphalt (Hot Bituminous Pavement – Grading “B” (19.0 mm) 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 Bituminous Pavement – Grading “B” (19.0 mm) and Grading “C” (12.5 mm) 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 Bituminous Pavement – Grading “B” (19.0 mm) and Grading “C” (12.5 mm) 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.

Payment will be made under:

Pay Item		Pay Unit
403.207	Hot Bituminous Pavement – Grading “B” (19.0 mm)	Ton
403.208	Hot Bituminous Pavement – Grading “C” (12.5 mm)	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 Bituminous 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 Bituminous Pavement.

SECTION 534 – PRECAST STRUCTURAL CONCRETE

534.10 Description

The Contractor shall design, manufacture, furnish, and install elements, precast structural structures and appurtenances, in accordance with the contract documents.

534.20 Materials

Structural precast elements shall meet the requirements of the following Subsection:

Structural Precast Concrete Units 712.061

Grout, concrete patching material, and geotextiles shall be one of the products listed on the Department's list of prequalified materials, unless otherwise approved by the Department.

534.30 Design Requirements

The Contractor shall design the precast structural concrete structure in accordance with the AASHTO Standard Specifications for Highway Bridges, current edition, by either the Load Factor Design (LFD) or Load and Resistance Factor Design (LRFD) method. The design live load shall be as follows: MS-22.5 (HS-25) for LFD method, *modified HL-93 Strength I for LRFD method. *(modify HL-93 by increasing all wheel loads by a factor of 1.25).

The Contractor shall submit design calculations and shop drawings for the precast structure to the Department for approval. A Registered Professional Engineer, licensed in accordance with State of Maine laws, shall sign and seal all design calculations and drawings. Drawings shall conform to Section 105.7 - Working Drawings of the Standard Specifications

The Contractor shall submit the following items for review by the Engineer at least ten working days prior to production:

1. The name and location of the manufacturer.

2. Method of manufacture and material certificates.

3. Description of method of handling, storing, transporting, and erecting the members.

4. Shop Drawings with the following minimum details:
   a. Fully dimensioned views showing the geometry of the members, including all projections, recesses, notches, openings, block outs, and keyways.
   b. Details and bending schedules of reinforcing steel including the size, spacing, and location. Reinforcing provided under lifting devices shall be shown in detail.
   c. Details and locations of all items to be embedded.
   d. Total mass (weight) of each member.
   e. Joint system.
   f. Special fabrication for mechanical/electrical components.
   g. Access covers and frames.
5. All structures shall be cast with a rust inhibitor equal to Rheocrete CNI Rust Inhibitor applied at 3 gallons/cubic yard of concrete.

6. In addition to the corrosion inhibitor described in item 5, coat exterior with waterproofing material suitable for marine environments. Coating shall not be bituminous. Submit manufacturer's literature for City approval.

534.40 Construction Requirements

The applicable provisions of Subsection 535.10 - Forms and Casting Beds and Subsection 535.20 – Finishing Concrete and Repairing Defects shall be met.

534.401 Manufacture of Precast Units

The internal dimensions shall not vary by more than 1 percent from the design dimensions or 38 mm [1 ½ in], whichever is less. The haunch dimensions shall not vary by more than 19 mm [¾ in] from the design dimension. The dimension of the legs shall not vary by more than 6 mm [¼ in] from the dimension shown on the approved shop drawings.

The slab and wall thickness shall not be less than the design thickness by more than 6 mm [¼ in]. A thickness greater than the design thickness shall not be cause for rejection.

Variations in laying lengths of two opposite surfaces shall not be more than 15 mm [⅝ in] in any section, except where beveled ends for laying of curves are specified.

The under-run in length of any section shall not be more than 12 mm [½ in].

The cover of concrete over the outside circumferential reinforcement shall be 50 mm [2 in] minimum. The concrete cover over the inside reinforcement shall be 38 mm [1 ½ in] minimum. The clear distance of the end of circumferential wires shall not be less than 25 mm [1 in] or more than 50 mm [2 in] from the end of the sections. Reinforcement shall be single or multiple layers of welded wire fabric or a single layer of deformed billet steel bars.

Welded wire fabric shall meet the space requirements and contain sufficient longitudinal wires extending through the section to maintain the shape and position of the reinforcement. Longitudinal distribution reinforcement may be welded wire fabric or deformed billet steel bars which meet the spacing requirements. The ends of the longitudinal distribution reinforcement shall be not more than 75 mm [3 in] from the ends of the sections.

The inside circumferential reinforcing steel for the haunch radii or fillet shall be bent to match the radii or fillets of the forms.

Tension splices in the reinforcement will not be permitted. For splices other than tension splices, the overlap shall be a minimum of 300 mm [12 in] for welded wire fabric or billet steel bars. The spacing center to center of the circumferential wires in a wire fabric sheet shall be not less than 50 mm [2 in] or more than 100 mm [4 in]. For the wire fabric, the spacing center to center of the longitudinal wires shall not be more than 200 mm [8 in]. The spacing center to center of the longitudinal distribution steel for either line of reinforcing in the top slab shall be not more than 375 mm [15 in].

The members shall be free of fractures. The ends of the members shall be normal to the

walls and centerline of the section, within the limits of variation provided, except where beveled ends are specified. The surfaces of the members shall be a smooth steel form or toweled surface finish, unless a form liner is specified. The ends and interior of the assembled structure shall make a continuous line of members with a smooth interior surface.

Defects which may cause rejection of precast units include the following:

1. Any discontinuity (crack or rock pocket etc.) of the concrete which could allow moisture to reach the reinforcing steel.

2. Rock pockets or honeycomb over 4000 mm² [6 in²] in area or over 25 mm [1 in] deep.

3. Edge or corner breakage exceeding 300 mm [12 in] in length or 25 mm [1 in] in depth.

4. Extensive fine hair cracks or checks.

5. Any other defect that clearly and substantially impacts the quality, durability, or maintainability of the structure as measured by accepted industry standards.

The Contractor shall store and transport members in a manner to prevent cracking or damage. The Contractor shall not place precast members in an upright position until a compressive strength of at least 30 MPa [4350 psi] is attained.

Precast structures shall be manufactured with CNI rust inhibitor admixture or approved equal incidental to the pay item.

534.402 Installation of Precast Units

The Contractor shall not ship precast members until sufficient strength has been attained to withstand shipping, handling and erection stresses without cracking, deformation, or spalling (but in no case less than 30 MPa [4350 psi].

The Contractor shall set precast members on 12 mm [½ in] neoprene pads during shipment to prevent damage to the section legs. The Contractor shall repair any damage to precast members resulting from shipping or handling by saw cutting a minimum of 12 mm [½ in] deep around the perimeter of the damaged area and placing a polymer-modified cementitious patching material.

When footings are required, the Contractor shall install the precast members on concrete footings that have reached a compressive strength of at least 20 MPa [2900 psi]. The Contractor shall construct the completed footing surface to the lines and grades shown on the plans. When checked with a 3 m [10 ft] straightedge, the surface shall not vary more than 6 mm [¼ in] in 3 meters [10 ft]. The footing keyway shall be filled with a non-shrink flowable cementitious grout with a design compressive strength of at least 35 MPa [5075 psi].

The Contractor shall fill holes that were cast in the units for handling, with either Portland cement mortar, or with precast plugs secured with Portland cement mortar or other approved adhesive. The Contractor shall completely fill the exterior face of joints between precast members with an approved material and cover with a minimum 300

mm [12 in] wide joint wrap. The surface shall be free of dirt and deleterious materials before applying the filler material and joint wrap. The Contractor shall install and tighten the bolts fastening the connection plate(s) between the elements that are designed to be fastened together as designated by the manufacturer.

The Contractor shall backfill the structure in accordance with the manufacturer's instructions and the Contract documents. The Contractor shall uniformly distribute backfill material in layers of not more than 200 mm [8 in] depth, loose measure, and thoroughly compact each layer using approved compactors before successive layers are placed. The Contractor shall compact gravel borrow backfill in accordance with Section 203.12 - Construction of Earth Embankment with Moisture and Density Control, except that the minimum required compaction shall be 95 percent of maximum density as determined by AASHTO T99, Method C or D. The Contractor shall place and compact backfill without disturbance or displacement of the wall units, keeping the fill at approximately the same elevation on both sides of the structure. Whenever a compaction test fails, the Contractor shall not place additional backfill over the area until the lift is re-compacted and a passing test achieved.

The Contractor shall use hand-operated compactors within 1.5 m [5 ft] of the precast structure as well as over the top until it is covered with at least 300 mm [12 in] of backfill. Equipment in excess of 11 Mg [12 ton] shall not use the structure until a minimum of 600 mm [24 in] of backfill cover is in place and compacted.

Precast structure sections shall be installed with water-tight gasket as approved by the engineer. Gaskets shall be considered incidental to the pay item.

534.50 Method of Measurement

The Department will measure for payment once precast concrete structure is completely installed in accordance with the plans and accepted.

534.60 Basis of Payment

Payment for the accepted quantity shall include all labor, equipment, materials, professional services, and incidentals for furnishing and installing the precast concrete elements and accessories. Formwork, reinforcing steel, jointing tape, grout, cast-in-place concrete fill or grout fill for precast appurtenances are incidental to the pay item for each precast structure, vault, pipe and buildings.

Access ports, including frames and covers or hatches, precast risers and cone sections, connection gaskets and boots, steps, cut-off walls, head walls, end caps, backfill and geotextile fabric are incidental to the cost of construction for the related pay item.

Testing, testing apparatus and repairs shall be considered incidental to the cost of construction. No extra payment will be made.

Payment for all trench excavation shall be considered incidental and included in the related precast structure pay items with the exception of structural rock excavation and pavement section removal.

All sheeting, shoring, temporary bracing and detwatering 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 shall be incidental to the related pay item.

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 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 registered in the State of Maine. No extra payment will be made for the engineered sheeting and shoring methods, materials or equipment used by the Contractor. All trench stabilization shall be considered incidental to the applicable pay items.

The 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.

Flowable fill utilized for precast structures shall be considered incidental to the related pay item.

Pipe bedding materials, geotextile, backfilling, backfill, roadway base and subbase materials is incidental to the pay items under this section.

Removal and resetting of existing electrical service is incidental to the pay items under this section.

Work associated with providing anti-floatation during installation of the precast concrete shall be the responsibility of the contractor and shall be considered incidental to the pay items under this section.

Temporary and permanent erosion control, loaming, seeding, mulching and restoration of all disturbed areas is incidental to pay item 615.071.

Payment will be made under:

Pay Item		Pay Unit
534.80	6’ x10’ Precast Concrete Box Drain Manhole	Each

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:

Materials shall meet the requirements specified for the various subsections of the specifications listed below:

Reinforced Concrete Pipe----------Stand. Spec---------- 706.02
PVC Ring Type Pipe – (SDR 35 or Equal)----------ASTM----------D3034
Profile Wall Polyethylene (PE) Pipe---------- ASTM----------D3350
High Density Polyethylene (HDPE) SaniTite Pipe----------ASTM---------- F2306
Aggregate Base - Screened or Crushed---------- Stand. Spec.--------703.06 (a)
Aggregate Subbase – Sand (Type E)---------- Stand. Spec.--------703.06 (b)
Crushed Stone for Pipe Bedding---------- Stand. Spec.----------703.22

603.013 Construction Requirements:

603.0132 Reinforced Concrete Sewer and Storm Drain Pipe:
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 pipe thirty-six inches in diameter or larger shall be sealed on the inside with cement mortar or with gunite 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.

603.0133 SDR 35 Poly Vinyl Chloride (PVC) Sewer and Storm Drain Pipe and Fittings:

Each pipe length shall be inspected before being laid. Pipe shall be laid to conform to the lines and grades indicated on the drawings. Each pipe shall be so laid as to form a close joint with the next adjoining pipe and bring the inverts continuously to the required grade.

Bell holes shall be excavated or provided in the base material to receive the bell or coupling so that only the barrel of the pipe receives bearing pressure from the supporting material.

When each pipe has been properly bedded, enough of the backfill material shall be placed and compacted between the pipe and the sides of the trench to hold the pipe in correct alignment.

No pipe or fitting shall be permanently supported on blocks, wedges, boards or stones.

All joints shall be made in a dry trench and in accordance with the manufacturer's recommendations.

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 a 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.

603.0134 Polyethylene (PE) Pipe Sewer and Storm Drain Pipe and Fittings:

The pipe shall be Weholite Profile Wall Polyethylene (PE), Class 250 pipe or approved equal and installed in accordance with the manufacturer's recommendations.

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 the 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.

603.0135 High Density Polyethylene (HDPE) SaniTite Pipe Storm Drain Pipe and Fittings:

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 shall not 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 a 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.

603.0136 Rigid Insulation:

Extruded closed-cell rigid foamed polystyrene, 2-inch thickness, width of trench, Styrofoam HI-60, by Dow Chemical, or approved equal.

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 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
B. Infiltration
C. Exfiltration

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:

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:

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.

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.

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:

Pipe Diameter (In Inches)	Minutes
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

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.)

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.

B. Infiltration

An infiltration test requires groundwater levels to be a minimum of one foot above the crown of the pipe of the high end of the section being tested. Infiltration test procedures are:

1. Engineer to determine length of sewer main and the connecting lines to be tested.

2. With all connecting pipes plugged (other than those included in test section) install a V notch weir in downstream end of pipe. The V notch weir must be constructed accurately and installed to maintain a watertight seal between weir and pipe.

3. Allow time for water to build up behind weir until steady, uniform flow passes through V notch.

4. Readings shall be taken and recorded.

C. Exfiltration

Exfiltration test procedures are:

1. Engineer to determine length of sewer to be tested.

2. Properly cap or plug and block service laterals, stubs and fittings into sewer lines being tested.

3. Plug upstream and downstream ends of test section providing a water supply connection downstream and standpipe in manhole upstream.

4. Fill test section and upstream standpipe and allow time for water absorption in manholes.

5. Measure drop in upstream standpipe over 3 or 4 -15 minute periods and compute leakage. Note: The upstream manhole may be used as the standpipe. Test sections shall be kept short enough to maintain a reasonably low head to prevent excess pressures.

Leakage in gravity sewers shall not exceed 300 gallons per inch diameter, per day, per mile of pipe when tested by either internal pressure or external pressure means. Should the pipe as laid fail to meet these requirements, the Contractor shall perform the necessary work, at no additional cost to the City, to meet these requirements.

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.

603.14 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 shall be considered incidental and included in the pay item with the exception of structural rock excavation and pavement section 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.

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 registered in the State of Maine. No extra payment will be made for the engineered sheeting and shoring methods, materials or equipment used by the Contractor. All trench stabilization shall be considered incidental to the applicable pay items.

The 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.

Pipe bedding materials, geotextile, backfilling, backfill, roadway base and subbase materials 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.

Temporary and permanent erosion control, Loaming, seeding, mulching and restoration of all disturbed areas 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 costs to install rigid insulation shall be considered incidental to the related pay item.

Removal of existing sewer and storm drain shall be considered incidental to the related pay item.

Trench Dams shall be incidental to the pipe installation cost.

Pay Item	Payment will be made under:	Pay Unit
603.79	Clean Sewer Line and Remove Debris	Lump Sum
603.80	8 Inch Diameter PVC Sewer Pipe (All Depths)	Linear Foot
603.81	12 Inch Diameter PVC Sewer Pipe (All Depths)	Linear Foot
603.82	15 Inch Diameter PVC Sewer Pipe (All Depths)	Linear Foot
603.83	21 Inch Diameter PVC Sewer Pipe (All Depths)	Linear Foot
603.835	10 Inch Diameter Storm Drain Pipe (All Depths)	Linear Foot
603.84	12 Inch Diameter Storm Drain Pipe (All Depths)	Linear Foot
603.85	15 Inch Diameter Storm Drain Pipe (All Depths)	Linear Foot
603.86	18 Inch Diameter Storm Drain Pipe (All Depths)	Linear Foot
603.87	30 Inch Diameter Storm Drain Pipe (All Depths)	Linear Foot
603.88	36 Inch Diameter Storm Drain Pipe (All Depths)	Linear Foot
603.89	42 Inch Diameter Storm Drain Pipe (All Depths)	Linear Foot
603.90	48 Inch Diameter Storm Drain Pipe (All Depths)	Linear Foot
603.91	12” CheckMate Backflow Valve by Tideflex	Each

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

Manhole covers used on this project shall be 24 inch bolted frame and cover in paved areas and 24 inch hinged frame and cover in unpaved (grassed) areas. Sewer covers shall have “Sewer” cast into the cover, and storm covers shall have “Drain” cast into the cover.

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.

Sanitary sewer inverts shall be constructed by brick masonry or approved fiberglass insert.

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 7 foot (7') granite tipdowns and Casco traps which shall be incidental to the contract unit price of the structure.

All sanitary sewers shall be constructed using solid manhole covers unless otherwise indicated.

Leakage tests may be required on each manhole. The tests, if ordered, shall be the exfiltration test made as described below:

After the manhole has been assembled in place, all lifting holes and all exterior joints shall be filled and pointed with an approved non-shrinking grout or approved bituminous mastic as shown on the construction drawings. The test shall be made prior to placing the shelf and invert and before filling and pointing the horizontal joints. If the groundwater table has been allowed to rise above the bottom of the manhole, it shall be lowered for the duration of the test. All pipes and other openings into the manhole shall be suitably plugged and the plugs braced to prevent blow out.

The manhole shall then be filled with water to the top of the cone section. If the excavation has not been backfilled and observation indicates no visible leakage, that is, no water visibly moving down the surface of the manhole, the manhole may be considered to be satisfactorily water-tight. If the test, as described above is unsatisfactory, or if the manhole excavation has been backfilled, the test shall be continued. A period of time may be permitted if the Contractor so wishes, to allow for absorption. At the end of this period, the manhole shall be refilled to the top of the cone, if necessary, and the measuring time of at least 8 hours begun. At the end of the test period, the manhole shall be refilled to the top of the cone, measuring the volume of water added. This amount shall be extrapolated to a 24-hour rate and the leakage determined on the basis of depth. The leakage for each manhole shall not exceed 1 gallon per vertical foot for a 24-hour period. If the test fails this requirement, but the leakage does not exceed 3 gallons per vertical foot per day, repairs by approved methods may be made to bring the leakage within the allowable rate of 1 gallon per foot per day.

Leakage due to a defective section or joint or exceeding the 3 gallon per vertical foot per day shall be the cause for the rejection of the manhole. It shall be the Contractor's responsibility to uncover the manhole as necessary and to disassemble, reconstruct or replace it. The manhole shall then be retested and, if satisfactory, interior joints shall be filled and pointed.

No adjustment in the leakage allowance will be made for unknown causes such as leaking plugs and absorptions. It will be assumed that all loss of water during the test is a result of leaks through the joints or through the concrete. Furthermore, the Contractor

shall take any steps necessary to assure the Engineer that the water table is below the bottom of the manhole throughout the test.

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

604.031 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.

Alter existing manhole and catch basin shall include making alterations as indicated on the plans or as required by field conditions. Alterations may include (as applicable) adjustments to manhole invert channel caused by new pipe connections, waterproofing, installation of new steps, replacement of inlet stone, replacement of frame and/or grate, 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 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.

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, tipdowns, frame, grate, Casco trap, adjustment to grade, connection of the underdrain 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 sentence:

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 following paragraphs shall be added:

The cost of excavation, gravel and backfill of all catch basins or manholes, either new, abandoned, or removed and/or replaced shall be included in the cost of the specific work for each type of structure.

The cost of resetting curb inlet stones shall be considered incidental to the cost of adjusting catch basins to grade and no separate payments will be made. The cost of delivering inlet stones and/or castings to the City or other approved sites shall be considered as incidental to the contract items involved.

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 City and Portland Water District. Work shall be coordinated with the Engineer and will require special consideration and work to maintain sewer, drainage and CSO's during project construction. This work shall be considered incidental to the costs of construction.

Removal and resetting of existing electrical service (where encountered) is incidental to the pay items under this section.

Payment will be made under:

Pay Item		Pay Unit
604.13	Install 4 Foot Diameter Catch Basin, Type “E”	Each
604.150	Install 4 Foot Diameter Sewer Manhole	Each
604.151	Install 4 Foot Diameter Drain Manhole	Each
604.152	Install 6 Foot Diameter Sewer Manhole	Each
604.153	Install 6 Foot Diameter Drain Manhole	Each
604.154	Install 8 Foot Diameter Drain Manhole	Each
604.155	Install 10 Foot Diameter Drain Manhole	Each
604.17	Altering Catch Basin and Manhole	Each
604.18	Adjusting Catch Basins and Manholes to Grade	Each
604.19	Winterization	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 or HDPE as shown on the details. Coiled pipes shall not be used.

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.

Payment will be made under:

Pay Item		Pay Unit
605.09	6 Inch Diameter Underdrain, Type "B"	Linear Foot

SECTION 607 - FENCES

The provisions of Section 607 of the Standard Specifications shall apply with the following additions and modifications.

607.03 General

The Contractor shall remove and replace existing post & rail fence. New materials to match existing. All costs and work associated with fencing including but not limited to any incidental materials for relocation of fencing shall be included in the lump sum pay item.

607.07 Basis of Payment

Payment will be made under:

Pay Item		Pay Unit
607.174	Remove & Replace with New Post and Rail Fence	Lump Sum

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 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.

608.04 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 "A".

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.

608.05 Method of Measurement

Hot bituminous concrete sidewalk shall be measured by square yard, complete in place.

Hot bituminous concrete driveway shall be measured by the square yard, complete in place.

608.06 Basis of Payment

The accepted quantity of hot bituminous concrete driveway/sidewalk and stone dust trail 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.

Non-SRF detectable warning surface locations are indicated on the plans.

Payment will be made under:

Pay Item		Pay Unit
608.09	Concrete Pedestrian Ramp with Detectable Warning Surface	Each
608.10	Rebuild Concrete Steps	Lump Sum
608.25	Hot Bituminous Concrete Sidewalk	Square Yard
608.26	Hot Bituminous Concrete Driveway	Square Yard
608.27	5’ Wide Stone Dust Trail	Square Yard

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

All existing curb to be reset shall be measured by the linear foot, complete in place. Terminal curb will be measured by each, complete in place. Curb removal and stacking be incidental to the contract.

609.10 Basis of Payment

The accepted quantity for curb reset and terminal 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.

Payment will be made under:

Pay Item		Pay Unit
609.34	Remove & Reset Granite Curb, Type 1 - Straight	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

Payment will be made under:

Pay Item		Pay Unit
614.14	Masonry Plug ≥ 8”	Each
614.16	Flowable Concrete Fill	Cubic Yard

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 Services, 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 Services.

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
Kentucky Bluegrass	50%	80
Perennial Ryegrass	20%	80
Creeping Red Fescue	30%	85

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 Services.

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 think 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

Lump sum based on percentage of work completed.

615.07 Basis of Payment:

Lump sum items shall be based on percentage of work completed under this Section. 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:

Pay Item		Pay Unit
615.071	Loam, Seed and Mulch	Lump Sum
615.072	Sod	Square Yard

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 in all areas where existing pavement markings are damaged or removed by Contractor's operations.

627.10 Basis of Payment

Striping shall be incidental to Section 403 Hot Bituminous Pavement.

SECTION 629 - HAND LABOR

The provisions of Section 629 of the Standard Specifications shall apply with the following additions and modifications:

Payment will be made under:

Pay Item		Pay Unit
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:

Payment will be made under:

Pay Item		Pay Unit
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
631.171	Truck – 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 Pipe Sections to the main sewer. 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. All proposed cores must be approved and witnessed by the Engineer.

632.02 Method of Measurement:

Wye pipe sections 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 the new lateral pipe at each connection will be paid for under Section 633, Pay Item 633.07.

Payment will be made under:

Pay Item		Pay Unit
632.04	Four (4”) and six (6") Inch Wye Pipe Connections	Each
632.061	Ten (10”) Inch Inserta-Tee Pipe Connection	Each
632.062	Ten (10”) Inch Wye Pipe Connection	Each
632.063	Ten (10”) Inch Inserta-Wye Pipe Connection	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 trench excavation, with the exception of structural rock excavation, will be included in this item. Pipe bedding materials, backfilling and backfilling materials shall also be included in this item for payment.

Payment will be made under:

Pay Item		Pay Unit
633.07	Four (4") Inch and/or Six (6") Inch Diameter Sewer Laterals	Linear Foot
633.08	Four (4") Inch and/or Six (6") Inch Diameter Storm Drain Laterals	Linear Foot

SECTION 637 - DUST CONTROL

The provisions of Section 637 of the Standard Specifications shall apply with no additions or modifications:

Payment will be made under:

Pay Item		Pay Unit
637.071	Dust Control	Lump Sum

SECTION 640 – Renew Water Services

640.01 Description:

This work shall consist of the satisfactory connection or reconnection of all proposed and existing water services to the water main as shown in the contract drawings. All connections shall be made in conformance with Portland Water District Standards and the Maine State Plumbing Code. The Contractor shall be responsible for locating and reconnecting existing water services to water main. The Contractor shall install locating/warning tape over the centerline of all water services. Services shall also include new corporation stops meeting Portland Water District standards and requirements.

640.02 Method of Measurement:

Water services will be measured per each complete in place.

640.03 Basis of Payment:

The accepted quantity of house laterals will be paid for at the contract unit price per each, complete in place. The amount bid for each service shall be full compensation for furnishing all labor, equipment, tools, adaptors, reducers, temporary water services, disinfection of water lines, corporation stops, valves 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 trench excavation, with the exception of structural rock excavation, will be included in this item. Pipe bedding materials, backfilling and backfilling materials shall also be included in this item for payment.

Payment will be made under:

Pay Item		Pay Unit
640.1	Renew Water Service 1” Inch Diameter Copper Service	Each
640.2	Renew Water Service 2” Inch Diameter Copper Service	Each
640.3	Rebuild Water Main 4” Inch Diameter Ductile Iron	Linear Foot

SECTION 645 – HIGHWAY SIGNING

The provisions of Section 645 of the Standard Specifications shall apply with additions or modifications:

All highway signing and related work shall be considered incidental to section 652, Maintenance of Traffic.

SECTION 646 –BACK FLOW PREVENTION PIT

646.01 Description:

This work shall consist of the satisfactory installation back flow pit as indicated on 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 all pipe connections, materials, and structure installation. The Contractor shall install locating/warning tape over the centerline of over water as required by City ordinance. This is a non-SRF eligible pay item.

A storm drain pipe will be extended from Front Street to a drainage basin at the ice skating rink area in Payson Park. In coordination with the engineer, the drainage basin shall be installed in a low spot of the ice skating rink and the surrounding area shall be regraded to drain. Associated disturbed areas shall be stabilized with loam and seed.

646.02 Method of Measurement:

Payson Park Back Flow Prevention Pit will be measured per each complete in place.

The accepted quantity for Ice Skating Rink Regrading and Storm Drainage Basin will be paid based upon a percentage of construction completed as agreed to by the Engineer.

646.03 Basis of Payment:

The accepted installation of back flow pit will be paid for at the contract per each complete in place. The amount bid shall be full compensation for furnishing all labor, equipment, tools, adaptors, reducers, piping, check valves, and materials necessary to satisfactorily installation back flow prevention pit and associated work described on contract drawings.

The cost of locating/warning tape including installation shall be considered incidental to the appropriate lateral.

Payment for excavation (cuts/fills/grading), with the exception of structural rock excavation, will be included in this item. Pipe bedding materials, backfilling and backfilling materials shall also be included in this item for payment.

Installation of storm drainage basin and regrading of ice skating rink area shall be paid for Lump Sum. Placement of loam and seed shall be considered incidental to this pay item.

Payment will be made under:

Pay Item		Pay Unit
646.0	Back Flow Prevention Pit – Non-SRF	Each
646.1	Ice Skating Rink Regrading & Storm Drainage Basin – Non-SRF	Lump Sum

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

A minimum one lane of traffic shall be maintained on Front Street, West Kidder Street, Morse Street and Fernald Street. A minimum two lanes of traffic shall be maintained on Washington Avenue unless otherwise approved by the City of Portland.

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 and meet the requirements of the City provided traffic control plan together with any additional 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 contractors expense. While the City has attempted to develop a general traffic control plan, the plan will 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 shall be incidental to pay item 652.39 and traffic control flaggers will be paid under pay item 652.40.

Contractor shall have available at all times two (2) portable Variable Electronic Message Boards (VMB) capable of providing messages 24 hours a day. The contractor will be required to place up to two (2) VMB’s at locations identified by the City’s Traffic Engineer two (2) weeks prior to the beginning of construction. After the start of construction, the contractor shall have available two (2) VMB’s for periodic use during construction as directed by the City Traffic Engineer. The variable electronic message boards shall be considered 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.

The accepted quantity of flagger time will be the number of hours the designated station is occupied. The number of hours authorized for payment will be measured to the nearest ¼ hour.

652.8 Basis of Payment

Preparation of traffic control plans, construction signage, 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 will be paid under a separate pay item.

The accepted quantity of flagger time shall be paid for per hour.

Payment will be made under:

Pay Item		Pay Unit
652.39	Work Zone Traffic Control	Lump Sum
652.40	Flagger	Hour

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%)

654.03 Method of Measurement

Density tests will be measured by each conducted. Roadway tests will be conducted at 50' 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:

Pay Item		Pay Unit
654.08	Trench Density Test	Each
654.09	Roadway 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. 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:

Pay Item		Pay Unit
656.75	Temporary Soil Erosion and Water Pollution Control	Lump Sum

SECTION 670 – BAFFLE BOX

670.01 Description

The baffle box structure is placed on-line and shall be sized so that the entire flow from the inflow pipe will receive treatment by passing it through the inside of the structure. The baffle box shall have a storm water drain filter system comprising of; a housing having an inlet there into and an outlet therefrom and having a plurality of chambers formed therein below said inlet; a housing cover for access into said housing; a filter screen mounted over each of a plurality of said housing chambers for collecting trash from said storm water passing there through, each said filter screen being movable to allow access to the housing chamber there beneath; an inlet filter screen movably mounted adjacent said housing inlet for filtering drain water entering said inlet; and an oil sorbent boom removable mounted in said housing above one said housing chamber for collecting oil in the drain water entering said housing inlet; whereby an in-line storm water drain filter system filters materials from drain water passing through said storm water drain.

672.02 Work Included

The Contractor shall furnish all labor, materials, tools, equipment and supervision required to provide and install the bending weir, as indicated on the drawings and specified herein.

Stormwater treatment components of the system shall be furnished by the baffle box manufacturer to insure the proper operation of the system and the validity of the manufacturer's warranty.

The equipment furnished and installed under this section shall be fabricated, assembled, tested, erected and placed in proper operating condition in full conformity with detailed drawings, specifications, engineering data and the instructions and recommendations of the equipment manufacturer as approved by the Engineer.

The concrete dimensions, tolerances, elevations and finish as shown on the contract drawings and described in the specifications are based on the Suntree Nutrient Separating Baffle Box Model Number: NSBB-8-16-138-MORSE STREET-1 and are required for the proper installation and operation of the baffle box system.

The Contractor shall be responsible for any changes, additions or deletions to the dimensions and their tolerances from the drawings, which may adversely affect the installation or operation of the system. These dimensions and their tolerances shall be clearly indicated on the manufacturer's shop drawings.

672.03 Related Sections

1. SECTION 534 – PRECAST STRUCTURAL CONCRETE

672.04 Equipment Description

Peak flows shall be based on site specific criteria and be able to pass through the stormwater treatment structure for treatment.

The stormwater treatment structure will be able to store captured solid debris such as leaves and litter in a dry state between rain events.

For access into the Nutrient Separating Baffle Box, Three 36" x 60" Openings for Aluminum Hatches will be cast into the top of the vault.

The inflow and outflow pipes will not intrude beyond flush with the inside surface of the Nutrient Separating Baffle Box. The space between the pipe holes in the ends of the Nutrient Separating Baffle Box and the outside surface of the pipe will be filled with non-shrink grout to form a water proof seal.

Steel shall be grade 304, Stainless Steel.

672.05 Submittals

The manufacturer shall submit general literature, illustrations, specifications and engineering data including but not limited to general component dimensions, materials, size and weight as well a list of any special tools required for installation, disassembly or routine maintenance of equipment.

Shop drawings must clearly show overall dimensions of the baffle box assembly, in plan and elevation view, of all pertinent and related equipment.

670.06 Manufacturer

The baffle box shall be manufactured by Suntree Technologies Inc. or another approved manufacturer.

If another manufacturer desires to be named an acceptable manufacturer, a complete submittal meeting the requirements of Section 670.05 must be provided for review to the Engineer a minimum of fifteen (15) days prior to the initial bid date. If the Engineer determines that the manufacturer is an acceptable equivalent, their name shall be added per addendum.

670.07 Warranty

Each baffle box and its mechanical components shall be guaranteed against manufacturing and design defects for a period of two (2) years from the date of owner's acceptance, not to exceed eighteen (18) months from the date of installation. Should any defects be found during the warranty period, the manufacturer shall be responsible for the modification and/or replacement of the defective components only, including parts and labor.

670.08 Method of Measurement

The Department will measure for payment once Baffle Box structure is completely installed in accordance with the plans and accepted.

670.09 Basis of Payment

Payment for the accepted quantity shall include all labor, equipment, materials, professional services, and incidentals for furnishing and installing the precast concrete elements and accessories. Formwork, reinforcing steel, jointing tape, grout, cast-in-place concrete fill or grout fill for precast appurtenances are incidental to the pay item for

each precast structure, vault, pipe and buildings.

Hatches, precast risers, connection gaskets and boots, steps, cut-off walls, head walls, end caps, backfill and geotextile fabric are incidental to the cost of construction for the related pay item.

Testing, testing apparatus and repairs shall be considered incidental to the cost of construction. No extra payment will be made
.
Payment for all trench excavation shall be considered incidental and included in the storage conduit and related precast structure pay items with the exception of structural rock excavation and pavement section 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 shall be incidental to the related pay item.

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 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 registered in the State of Maine. No extra payment will be made for the engineered sheeting and shoring methods, materials or equipment used by the Contractor. All trench stabilization shall be considered incidental to the applicable pay items.

The 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.

Pipe bedding materials, geotextile, backfilling, backfill, roadway base and subbase materials is incidental to the pay items under this section.

Removal and resetting of existing utilities is incidental to the pay items under this section.

Work associated with providing anti-floatation during installation of the precast concrete shall be the responsibility of the contractor and shall be considered incidental to the pay items under this section.

Temporary and permanent erosion control, loaming, seeding, mulching and restoration

of all disturbed areas is incidental to pay item 615.071.

Payment will be made under:

Pay Item		Pay Unit
670.10	8’x16’ Baffle Box	Each

DIVISION 700 - MATERIALS

The following are revisions and additions to the Material Details Division of the Standard Specifications, Highways and Bridges, Revision of December, 2002. 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

	Per Cent Passing Sieve				
Sieve Size	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 "A" shall not contain particles of rock which will not pass the two inch (2") square mesh sieve, and shall conform to the type "A" aggregate, as listed in the subsection of the Standard Specifications.

"Crushed" shall be defined as consisting of rock particles with at least 50 per cent of the portion retained on the 1/4 inch square mesh sieve, having a minimum of 2 fracture faces.

703.06 (b) Aggregate Subbase:

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.

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
3/4 – inch	100
3/8 – inch	20-55
No. 4	0-10

For pipe sizes 42 inches and larger:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
1-1/4 – inch	100
3/8 – inch	20-55
No. 4	0-10

The stone shall be free from vegetable matter, lumps or balls of clay, and other deleterious substances.

Standard General Conditions of the Construction Contract (EJCDC)

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

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

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

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

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

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

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

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

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

8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.

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

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

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

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

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

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

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

16. *Cost of the Work*—See Paragraph 11.01 for definition.

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

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

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

20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*—Sections of Division 1 of the Specifications.

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

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

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

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

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

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

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

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

30. *PCBs*—Polychlorinated biphenyls.

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

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

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

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

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

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

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

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

39. 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.

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

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

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

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

44. *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.

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

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

47. *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 Subcontractor.

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

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

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

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

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following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

A. The words and terms discussed in Paragraph 1.02.B through F 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 Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

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

D. *Defective:*

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

a. does not conform to the Contract Documents; or

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

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

E. *Furnish, Install, Perform, Provide:*

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

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete

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and ready for intended use.

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

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

F. Unless stated otherwise in the Contract Documents, words or phrases 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. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

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

2.02 *Copies of Documents*

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

2.03 *Commencement of Contract Times; Notice to Proceed*

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

2.04 *Starting the Work*

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

2.05 *Before Starting Construction*

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

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

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and 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.

2.06 *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 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, 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 instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

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

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

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ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

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

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

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

3.02 *Reference Standards*

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

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

2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, 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 Contract Documents.

3.03 *Reporting and Resolving Discrepancies A. Reporting Discrepancies:*

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

2. *Contractor's Review of Contract Documents During Performance of Work*: If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation , (b) any standard, specification, manual, or code, or (c) any instruction of

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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 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

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

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

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

3.04 *Amending and Supplementing Contract Documents*

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

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

1. A Field Order;

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

3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier 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

2. 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.

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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.

3.06 *Electronic Data*

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

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

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

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

4.01 *Availability of Lands*

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

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

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

4.02 *Subsurface and Physical Conditions*

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

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1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and

2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

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

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

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

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

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

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

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

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

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C. Possible Price and Times Adjustments:

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

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

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

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

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

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

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

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

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

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

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a. reviewing and checking all such information and data;

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

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

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

B. *Not Shown or Indicated:*

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

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

4.05 *Reference Points*

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

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.

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B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their 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 any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) 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 4.06.E.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. 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, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to

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or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, 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: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

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

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent 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 each bond.

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

5.02 *Licensed Sureties and Insurers*

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

5.03 *Certificates of Insurance*

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

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

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

D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.

E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

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

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

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

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

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

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

   b. by any other person for any other reason;

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

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

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

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, 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;

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

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

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

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

6. include completed operations coverage:

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a. Such insurance shall remain in effect for two years after final payment.

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

5.05 *Owner's Liability Insurance*

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

5.06 *Property Insurance*

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

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

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, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, 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.

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

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

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

6. include testing and startup; and

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

B. Owner shall purchase and maintain such equipment breakdown insurance or additional property

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insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

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

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their 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 Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (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 as trustee or otherwise payable under any policy so issued.

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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 utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

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

5.08 *Receipt and Application of Insurance Proceeds*

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

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

5.09 Acceptance of Bonds and Insurance; Option to Replace

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

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other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

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

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

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

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

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

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

6.03 *Services, Materials, and Equipment*

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

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified,

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shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

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

6.04 *Progress Schedule*

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

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

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

6.05 *Substitutes and "Or-Equals"*

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

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

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

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

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

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

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

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

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

2. *Substitute Items:*

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

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

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

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

1) shall certify that the proposed substitute item will:

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

b) be similar in substance to that specified, and

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

2) will state:

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

b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

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

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

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

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

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

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

E. Engineer's Cost Reimbursement: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute 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.

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

6.06 *Concerning Subcontractors, Suppliers, and Others*

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

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list

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thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or

other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

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

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

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

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

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

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

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (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 such policies and any other property insurance applicable to the Work. If the

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insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

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

B. To the fullest extent permitted by Laws and Regulations, 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.

6.08 *Permits*

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

6.09 *Laws and Regulations*

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

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B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all

court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

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

6.10 *Taxes*

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

6.11 *Use of Site and Other Areas*

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

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

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

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials,

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rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

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

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

6.12 *Record Documents*

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

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. 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, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

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

C. 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.

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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 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or 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 for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

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

6.15 *Hazard Communication Programs*

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

6.16 *Emergencies*

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

6.17 *Shop Drawings and Samples*

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

1. Shop Drawings:

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

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

2. *Samples:*

a. Submit number of Samples specified in the Specifications.

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

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

C. Submittal Procedures:

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

a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

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 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 and approval of that submittal.

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

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the

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

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

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

E. *Resubmittal Procedures:*

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

6.18 *Continuing the Work*

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

6.19 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.

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

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

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is

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not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

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

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

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

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

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

7. any correction of defective Work by Owner.

6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor,

   Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, 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

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2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

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

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

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

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

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

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

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

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

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B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering 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. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

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

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

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

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

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

7.03 *Legal Relationships*

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

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

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

ARTICLE 8 – OWNER'S RESPONSIBILITIES

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8.01 *Communications to Contractor*

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

8.02 *Replacement of Engineer*

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

8.03 *Furnish Data*

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

8.04 *Pay When Due*

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

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

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

8.07 *Change Orders*

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

8.08 *Inspections, Tests, and Approvals*

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

8.09 *Limitations on Owner's Responsibilities*

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

8.10 *Undisclosed Hazardous Environmental Condition*

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A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *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.

8.12 *Compliance with Safety Program*

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 pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

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

9.02 *Visits to Site*

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

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

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as

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provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

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

9.05 *Rejecting Defective Work*

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

9.06 *Shop Drawings, Change Orders and Payments*

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

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

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

9.07 *Determinations for Unit Price Work*

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

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

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

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

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

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

9.09 *Limitations on Engineer's Authority and Responsibilities*

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

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

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

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

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

9.10 *Compliance with Safety Program*

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A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

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

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

10.02 *Unauthorized Changes in the Work*

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

10.03 *Execution of Change Orders*

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

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

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

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

10.04 *Notification to Surety*

A. If 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

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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.

10.05 *Claims*

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

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

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

1. deny the Claim in whole or in part;

2. approve the Claim; or

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

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

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

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

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ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

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

   Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

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

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

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

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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 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

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

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

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

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

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and

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not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

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

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

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

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

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

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

11.02 *Allowances*

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

B. *Cash Allowances:*

1. Contractor agrees that:

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

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

C. *Contingency Allowance:*

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

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

11.03 *Unit Price Work*

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

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

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

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

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

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

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

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

12.01 *Change of Contract Price*

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

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

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

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

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

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

1. a mutually acceptable fixed fee; or

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

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

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

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

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

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

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

12.02 *Change of Contract Times*

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

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this

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Article 12.

12.03 *Delays*

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

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

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

D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

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

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

13.01 *Notice of Defects*

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

13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and

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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.

13.03 *Tests and Inspections*

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

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

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

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

3. as otherwise specifically provided in the Contract Documents.

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

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

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

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

13.04 *Uncovering Work*

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

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

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

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

13.05 *Owner May Stop the Work*

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

13.06 *Correction or Removal of Defective Work*

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

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

13.07 *Correction Period*

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

1. repair such defective land or areas; or

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2. correct such defective Work; or

3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

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

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

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

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

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct

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

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

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

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

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

14.02 *Progress Payments*

A. *Applications for Payments:*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at

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another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

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

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

B. *Review of Applications:*

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

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations 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 9.07, 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 Documents; 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.

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

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

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

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

   d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

   e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

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

   a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

   b. the Contract Price has been reduced by Change Orders;

   c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

   d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due:

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

D. Reduction in Payment:

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

   a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

   b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of

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such Liens;

c. there are other items entitling Owner to a set-off against the amount recommended; or

d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

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

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 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

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

14.04 *Substantial Completion*

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

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

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

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D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

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

14.05 *Partial Utilization*

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

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.

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

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

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

14.06 *Final Inspection*

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

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14.07 *Final Payment*

A. *Application for Payment:*

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

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

   a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;

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

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

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

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner 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.

B. *Engineer's Review of Application and Acceptance:*

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

C. *Payment Becomes Due:*

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

14.08 *Final Completion Delayed*

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

14.09 *Waiver of Claims*

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

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

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

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

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

15.02 *Owner May Terminate for Cause*

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

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established

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under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

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

3. Contractor's repeated disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);

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

3. complete the Work as Owner may deem expedient.

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

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

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

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

15.03 *Owner May Terminate For Convenience*

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

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

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

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

4. reasonable expenses directly attributable to termination.

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

15.04 *Contractor May Stop Work or Terminate*

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

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

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration

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Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

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

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

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

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

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

ARTICLE 17 – MISCELLANEOUS

17.01 *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 to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

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

17.03 *Cumulative Remedies*

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

17.04 *Survival of Obligations*

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

17.05 *Controlling Law*

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

17.06 *Headings*

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

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CWSRF Supplementary Conditions

1. Agency Not a Party

"This contract is expected to be funded in whole or in part by the State of Maine Department of Environmental Protection (DEP) Clean Water State Revolving Loan Fund (CWSRF) program. Neither the State of Maine nor any of its departments, agencies, or employees is or will be a party to this contract. The word "agency" in the contract documents refers to the DEP and all other involved funding agencies."

2. Contract Award Approval

> "The Owner and Contractor shall furnish the documents as required by this contract to the State of Maine Department of Environmental Protection (DEP) Clean Water State Revolving Loan Fund (CWSRF) program for contract award approval. Concurrence by the Agency in the award of the Contract is required before the Contract is effective."

3. Conflict of Interest

"Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the plans and specifications has a corporate or financial affiliation with the supplier or manufacturer. Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors."

4. Gratuities

"If Owner finds after a notice and hearing that Contractor, or any of Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner may, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract. In the event this Contract is terminated as provided in above paragraph, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary damages in an amount (as

determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee."

5. Audit and Access to Records

"Owner, Agency, the Comptroller General, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Contractor, which are pertinent to the Contract, for the purpose of making audits, examinations, excerpts and transcriptions. Contractor shall maintain all required records for three years after final payment is made and all other pending matters are closed."

6. Anti-Kickback

"Contractor shall comply with the Copeland Anti-Kickback Act (18 USC 874 and 40 USC 276c) as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency."

7. Clean Air and Pollution Control Acts

"If this Contract exceeds $100,000, Contractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 USC 7401 *et seq.*) and the Federal Water Pollution Control Act as amended (33 USC 1251 *et seq*.). Contractor will report violations to the Agency and the Regional Office of the EPA."

8. State Energy Policy

"Contractor shall comply with the Energy Policy and Conservation Act (P.L. 94-163). Mandatory standards and policies relating to energy efficiency, contained in any applicable State Energy Conservation Plan, shall be utilized."

9. Equal Opportunity Requirements

> "If this Contract exceeds $10,000, Contractor shall comply with Executive Order 11246, "Equal Employment Opportunity," as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

"Contractor's compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative active obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographical area where the Contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract, and in each trade, and Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor's goals shall be a violation of the Contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed."

"Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the Contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the Contract is to be performed."

10. Restrictions on Lobbying

"Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-121, Section 319) as supplemented by applicable Agency regulations. This Law applies to the recipients of contracts and subcontracts that exceed $100,000 at any tier under a Federal loan that exceeds $150,000 or a Federal grant that exceeds $100,000. If applicable, Contractor must complete a certification form on lobbying activities related to a specific Federal loan or grant that is a funding source for this Contract. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 USC 1352. Each tier shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Certifications and disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms are attached to these supplementary conditions."

11. Environmental Requirements

A. "When constructing a project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental constraints:

1. Wetlands – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.

2. Floodplains – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, i.e., alluvial soils on NRCS Soil Survey Maps.

3. Historic Preservation – Any excavation by Contractor that uncovers an historical or archaeological artifact shall be immediately reported to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the State Historic Preservation Officer (SHPO).

4. Endangered Species – Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service."

12. Suspension and Debarment

"The Contractor must comply with Subpart B and Subpart C of 2 CFR Part 180 and Part 1532. By entering into this contract, the contractor certifies that neither the contractor's firm, nor any person or firm who has an interest in the contractor firm, is a Debarred or Suspended person or firm. Furthermore, by entering into this contract, the contractor shall certify that no part of this contract shall be subcontracted to a Debarred or Suspended person or firm. Contractors may access the federal government's Excluded Parties List System on the internet for verification of excluded parties"

13. Taxes

Add the following language to General Conditions Article 6.10:

"The Owner is exempt from Maine state sales and use taxes on all materials to be incorporated in the work. The 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. The Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased or leased by Contractor or to supplies or materials not incorporated into the work."

14. State Minimum wages

"All laborers and mechanics employed or working upon the construction site of the project shall be paid not less than the prevailing State minimum wage rate regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. The most current version of the State of Maine poster for Minimum Wage (as per the Department of Labor website) must be posted where it can be easily seen by employees."

15. Posting Documents

"The contractor shall post documents in accordance with all applicable state and federal labor and employment laws. Posters shall be located and maintained by the Contractor at such place or places on the project site where employees can easily see them. Posters displayed outdoors must be laminated or otherwise protected from the weather. The most current version of workplace posters can be found on the internet on the state and federal Department of Labor websites."

16. SRF Project Sign

"At the start of the project, the Contractor shall provide and erect a project sign as detailed and specified in the attachment to these supplementary conditions. The location of the sign shall be as directed by the Engineer. No other contractor, subcontractor, or material signs will be permitted on the sign. The Contractor shall maintain and keep the project sign in good condition until the work is completed when the sign will be removed. Provide adequate supports for the sign as site conditions may require and keep sign a proper distance above prevailing grade to permit public viewing."

17. SRF Disadvantaged Business Enterprises Program

"The Contractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 40 CFR part 33, Disadvantaged Business Enterprises (DBE), in the award and administration of subcontracts. Failure by the Contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies.

The goals for this project are a minimum of 0.64% certified Minority Business Enterprise (MBE) and a minimum of 1.64% certified Women's Business Enterprise (WBE) participation. Lists of certified businesses may be found on the following internet websites: EPA Office of Small and Disadvantaged Business Utilization (OSDBU), State of Maine Department of Transportation (DOT), and the United States Small Business Administration (SBA).

The contractor must maintain all records documenting its compliance with the requirements of this part, including documentation of its good faith efforts (such as copies of solicitation letters and emails) and data relied upon in formulating its fair share objectives.

1. During the bidding period, the Contractor is required to make the following good faith efforts if they will be awarding subcontracts:
    (a) Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. This will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
    (b) Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
    (c) Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. This will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
    (d) Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
    (e) Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.
    (f) Employ the good faith efforts described above even if the prime contractor has achieved its fair share objectives under subpart D of this part.

2. The Contractor must comply with the following provisions when submitting their bid:
    (a) The contractor must complete and submit EPA Form 6100–4, 'DBE Program Subcontractor Utilization Form' (**copy attached**) as part of the prime contractor's bid or proposal package to the Owner. Note, only DBE subcontractors should be listed. If no DBE subcontractors are to be used, the contractor must still complete and submit the form.
    (b) The contractor must have each of its proposed DBE subcontractors complete the EPA Form 6100–3, 'DBE Program Subcontractor Performance Form' (**copy attached**). The completed forms must be submitted as part of the prime contractor's bid or proposal package to the Owner.

3. Prior to contract award, as the Successful Bidder, the Contractor must comply with the following provisions:
    (a) The contractor must submit to the Owner documentation of its good faith efforts (such as copies of solicitation letters and emails) and data relied upon in formulating its fair share objectives. Solicitation documentation must include proof of receipt. The records must be submitted to the Owner even if the goals were met.
    (b) The contractor must submit to the Owner a bidders list of all firms that bid or quote on subcontracts, including both MBE/WBEs and non-

MBE/WBEs. The purpose of a bidders list is to provide contractors who conduct competitive bidding with as accurate a database as possible about the universe of MBE/WBE and non-MBE/WBE subcontractors. The list must include the following information:

(1) Entity's name with point of contact;
(2) Entity's mailing address, telephone number, and e-mail address;
(3) The procurement on which the entity bid or quoted, and when; and
(4) Entity's status as an MBE/WBE or non-MBE/WBE.

4. Following contract award, the Contractor must comply with the following additional provisions:

(a) The contractor must provide EPA Form 6100–2, 'DBE Program Subcontractor Participation Form' (**copy attached**) to all DBE subcontractors listed on Form 6100-4. EPA Form 6100–2 gives a DBE subcontractor the opportunity to describe the work the DBE subcontractor received from the prime contractor, how much the DBE subcontractor was paid and any other concerns the DBE subcontractor might have during the course of the project, for example, reasons why the DBE subcontractor believes it was terminated by the prime contractor. If DBE subcontractors choose to complete this form, the completed form should be sent directly to the DEP DBE Coordinator. The address is: Maine Department of Environmental Protection, Attn: Ms. Kelly Stevens, DBE Coordinator, Bureau of Land and Water Quality, Division of Water Quality Management, 17 State House Station, Augusta, Maine 04333-0017.

(b) Complete the CWSRF DEP Progress Report of DBE Subcontractor Utilization Form (**copy attached**) for all contractor pay applications whether or not they include invoiced amounts from DBE subcontractors. The progress report should be attached to the corresponding pay application for processing through the Owner.

(c) Pay subcontractors for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the Owner.

(d) Notify the Owner in writing prior to any termination of a DBE subcontractor for convenience by the prime contractor.

(e) If a DBE subcontractor fails to complete work under the subcontract for any reason, the prime contractor must employ the good faith efforts described above if soliciting a replacement subcontractor. Documentation of good faith efforts shall be submitted to the Owner upon request."

18. Davis-Bacon and Related Acts

"The Contractor must comply with the following contract and subcontract provisions of the Davis-Bacon and Davis-Bacon Related acts. Attachments to these provisions include: the wage determination for this contract, four forms, and a poster.

1. Applicability of the Davis-Bacon (DB) prevailing wage requirements

Davis-Bacon prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund. If an Owner encounters a unique situation at a site that presents uncertainties regarding DB applicability, the Owner must discuss the situation with the State official before authorizing work on that site.

2. Obtaining Wage Determinations

(a) Owners shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the Owner shall monitor www.wdol.gov weekly to ensure that the wage determination contained in the solicitation remains current. The Owner shall amend the solicitation if DOL issues a modification more that 10 days prior to the closing date, the Owner may request a finding from the State official that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State official will provide a report of its findings to the Owner.

(ii) If the Owner does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State official, at the request of the Owner, obtains an extension of the 90 day period from DOL pursuant to 20 CFR 1.6(c)(3)(iv). The Owner shall monitor www.wdol.gov on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the Owner carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the Owner shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

(c) Owners shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a Owner's contract after the award of a contract or the issuance of an ordering instrument if

DOL determines that the Owner has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the Owner shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The Owner's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions

(a) The State official shall insure that the Owner(s) shall insert in full in any contract in excess of $2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321, attached) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. Additional copies of this poster can be obtained from the US Department of Labor website.

(ii)(A) Any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The EPA award official shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Owner agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), Form 1444 (attached) shall be completed and sent by the Owner to the State official. The State official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the State official or will notify the State official within the 30-day period that additional time is necessary. Additional copies of Form 1444 may be obtained from the US Department of Labor website.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the Owner do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the State official shall refer the questions, including the views of all interested parties and the recommendation of the State official, to the Administrator for determination. The request shall be sent to the EPA DB Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the State official or will notify the State official within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The Owner shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the State Official may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the Owner. Such documentation shall be available on request of the State Official or EPA. As to each payroll copy received, the Owner shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent

payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 (attached) is available for this purpose. Additional copies of the form are available from the US Department of Labor Wage and Hour Division Web site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Owner for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the Owner.

(B) Each payroll submitted shall be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 (page 2 of the form is attached) shall satisfy the requirement for submission of the “Statement of Compliance” required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such

representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees--

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every

trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may by appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Owner, State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of $100,000.

(a) Contract Work Hours and Safety Standards Act. The Owner shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The Owner**,** upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to

the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Owner shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Owner shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the State and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a). The Owner shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The Owner must use Standard Form 1445 or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are attached and are available from EPA on request.

(b) The Owner shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Owners must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. Owners shall immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c). The Owner shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The Owner shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the Owner must spot

check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Owners must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the Owner shall verify evidence of fringe benefit plans and payments there under by contractors and subcontractors who claim credit for fringe benefit contributions.

(d). The Owner shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Owners must immediately report potential violations of the DB prevailing wage requirements to the EPA DB Regional Coordinator, the State Official, and to the appropriate DOL Wage and Hour District Office listed at
http://www.dol.gov/esa/contacts/whd/america2.htm "

19. American Iron and Steel (AIS) Requirements

"The Contractor acknowledges, to and for the benefit of the Owner and the State (Maine Department of Environmental Protection), that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund (CWSRF) that have statutory requirements commonly known as "American Iron and Steel;" that requires all of the iron and steel products used in the project to be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contactor pursuant to this Agreement. See attached Public Law 113-76, Section 436. The Contractor hereby represents and warrants, to and for the benefit of the Owner and the State, that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Owner or the State. While the Contractor has no direct contractual privity with the State, as a lender to the Owner for the funding of its project, the Owner and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

The Owner shall maintain files on the project site for American Iron and Steel (AIS) manufacturer certifications. The Contractor and subcontractors shall provide step manufacturer certifications to the Owner for each AIS item delivered to the site. The files shall be made available to State and Federal officials for inspection upon request. See sample Step Manufacturer Certification attachment for information that should be included.

The Contractor and its subcontractors shall submit to the Owner, an AIS Compliance Certification (see form attached) with each contractor pay application. The Owner, shall in turn, submit this certification from the Contractor, with their AIS Compliance Certification (see form attached), to the State with the SRF pay requisition.

The nationwide waiver to the American Iron and Steel law permits the use of products when they occur in de minimis incidental components of such projects funded by the Act that may otherwise be prohibited under section 436(a). Funds used for such de minimis incidental components cumulatively may comprise no more than a total of 5 percent of the total cost of the materials used in and incorporated into a project; the cost of an individual item may not exceed 1 percent of the total cost of the materials used in and incorporated into a project. It is the State's interpretation that all CWSRF projects will contain incidental components that might not comply with the law and therefore it is likely that the Owner will use the deminimis waiver. The Contractor is required to provide the necessary documentation. Owners should, in consultation with their contractors, determine the items to be covered by this waiver, must retain relevant documentation (i.e., invoices) as to those items in their project files, and must summarize in reports the types and/or categories of items to which this waiver is applied, the total cost of incidental components covered by the waiver for each type or category, and the calculations by which they determined the total cost of materials used in and incorporated into the project. The Owner shall maintain files on the project site for this documentation. The files shall be made available to State and Federal officials for inspection upon request."

The Contractor shall refer to the attached guidance taken from an EPA Memorandum. Additional information regarding the AIS requirements can be found on this website http://water.epa.gov/grants_funding/aisrequirement.cfm

20. List of Attachments to the CWSRF Supplementary Conditions

- Lobbying certification - EPA form 6600-06
- Disclosure of Lobbying Activities Form - EPA standard form LLL
- SRF Project Sign Drawing
- DBE Program Subcontractor Utilization Form - EPA 6100-4
- DBE Program Subcontractor Performance Form - EPA 6100-3
- DBE Program Subcontractor Participation Form - EPA 6100-2
- Progress Report of DBE Subcontractor Utilization Form - DEP form
- Davis Bacon Project Wage Determination (to be made into a poster also)
- Davis Bacon Poster "Employee Rights" WH-1321
- Davis Bacon DOL Form 1444
- Davis Bacon DOL Form 1445
- Davis Bacon DOL form WH-347 page 1 (optional), and page 2 (mandatory)
- Owner's Davis Bacon Compliance Report
- AIS Covered Products Q &A
- AIS Law & Certifications
- AIS Step Manufacturer Certification

ATTACHMENT A

LOBBYING CERTIFICATION
EPA FORM 6600-06

United States Environmental Protection Agency

EPA Project Control Number_____

CERTIFICATION REGARDING LOBBYING

CERTIFICATION FOR CONTRACTS, GRANTS, **LOANS AND COOPERATIVE AGREEMENTS**

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including sub-contracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31 U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

_____

Typed Name & Title of Authorized Representative

_____

Signature and Date of Authorized Representative

ATTACHMENT B

DISCLOSURE OF LOBBYING ACTIVITIES FORM
EPA STANDARD FORM LL

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

1. Type of Federal Action:	2. Status of Federal Action:	3. Report Type:
☐ a. contract . grant . cooperative agreement . loan . loan guarantee loan insurance	a. ☐ bid/offer/application b. initial award c. post-award	☐ a. initial filing b. material change **For Material Change Only:** year _____ quarter _____ date of last report _____

4. Name and Address of Reporting Entity:	5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:
☐ **Prime** ☐ **Subawardee** Tier _____, *if known*: **Congressional District**, *if known*:	 **Congressional District**, *if known*:
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable*:_____
8. Federal Action Number, *if known*:	**9. Award Amount,** *if known*: $
10. a. Name and Address of Lobbying Registrant (*if individual, last name, first name, MI*):	**b. Individuals Performing Services** (*including address if different from No. 10a*) (*last name, first name, MI*):
ation requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less that $10,000 and not more than $100,000 for each such failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____Date: _____
Federal Use Only:	Authorized for Local Reproduction Standard Form LLL (Rev. 4/2012

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).

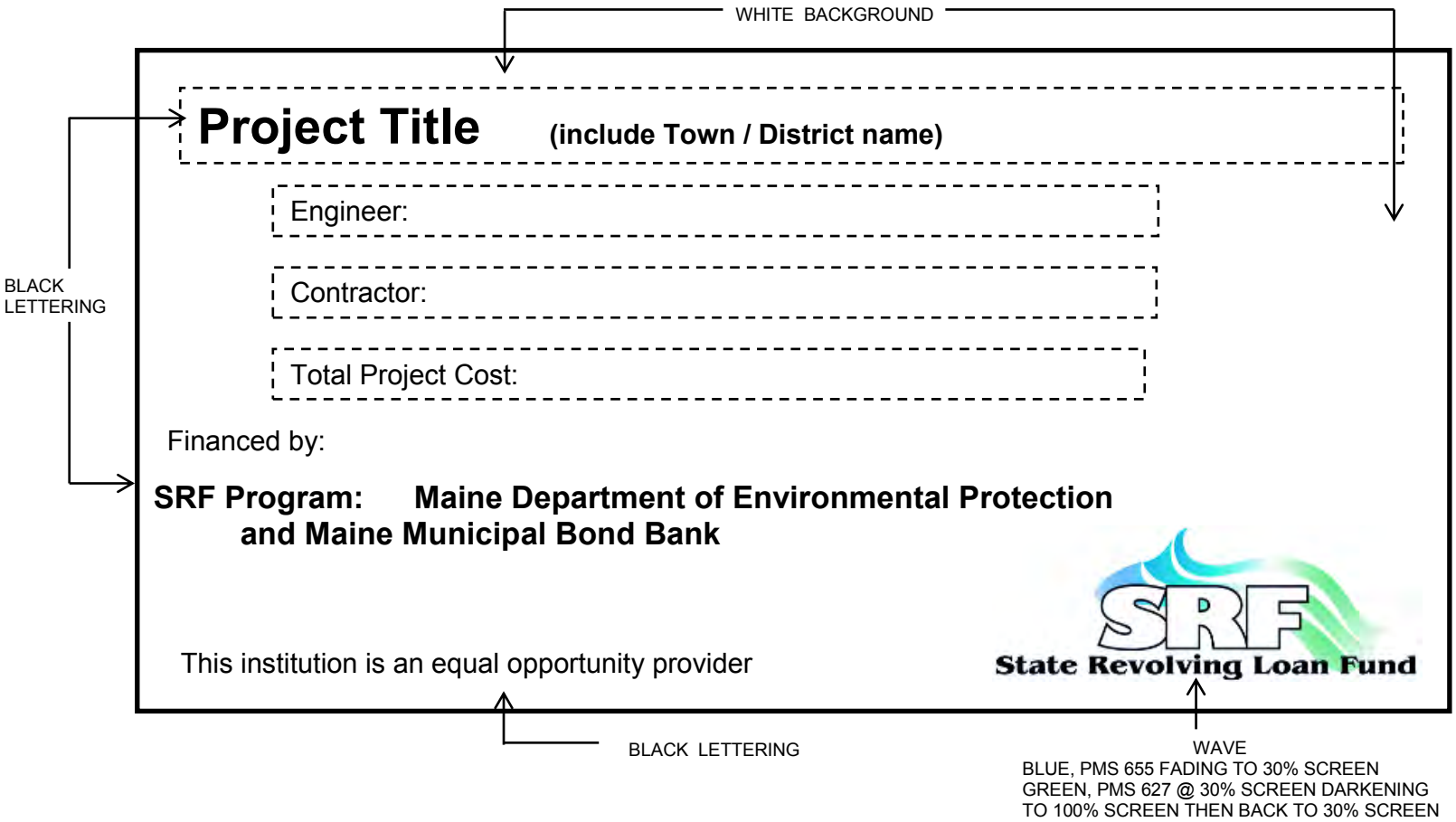
11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.

ATTACHMENT C

SRF PROJECT SIGN DRAWING

Temporary Construction Sign for CWSRF Projects



MINIMUM SIGN DIMENSIONS: 1200 x 2400 x 19 MM (4' x 8' x 3/4") EXTERIOR PLYWOOD (A-B GRADE)
MINIMUM LETTERING SIZE: 5 CM (2-INCHES)

ATTACHMENT D

DBE PROGRAM SUBCONTRACTOR UTILIZATION FORM
EPA 6100-4

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE[1] subcontractors[2] and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name		Project Name
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact
Address		
Telephone No.		Email Address
Issuing/Funding Entity:		

I have identified potential DBE certified subcontractors	__ YES	__ NO
If yes, please complete the table below. If no, please explain:		

Subcontractor Name/ Company Name	**Company Address/ Phone/ Email**	**Est. Dollar Amt**	**Currently DBE Certified?**

Continue on back if needed

[1] A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

[2] Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	**Date**

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

ATTACHMENT E

DBE PROGRAM SUBCONTRACTOR PERFORMANCE FORM
EPA 6100-3

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form

This form is intended to capture the DBE[1] subcontractor's[2] description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name	Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact
Address		
Telephone No.	Email Address	
Prime Contractor Name	Issuing/Funding Entity:	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services , Equipment or Supplies	Price of Work Submitted to the Prime Contractor
DBE Certified By: ___ DOT ___ SBA ___ Other: _____	Meets/ exceeds EPA certification standards? ___ YES ___ NO ___ Unknown	

[1] A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

[2] Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	**Date**

Subcontractor Signature	Print Name
Title	**Date**

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

ATTACHMENT F

DBE PROGRAM SUBCONTRACTOR PARTICIPATION FORM
EPA 6100-2

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Participation Form

An EPA Financial Assistance Agreement Recipient must require its prime contractors to provide this form to its DBE subcontractors. This form gives a DBE[1] subcontractor[2] the opportunity to describe work received and/or report any concerns regarding the EPA-funded project (e.g., in areas such as termination by prime contractor, late payments, etc.). The DBE subcontractor can, as an option, complete and submit this form to the EPA DBE Coordinator at any time during the project period of performance.

Subcontractor Name		Project Name
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact
Address		
Telephone No.		Email Address
Prime Contractor Name		Issuing/Funding Entity:

Contract Item Number	Description of Work Received from the Prime Contractor Involving Construction, Services, Equipment or Supplies	Amount Received by Prime Contractor

[1] A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

[2] Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Participation Form

Please use the space below to report any concerns regarding the above EPA-funded project:

Subcontractor Signature	Print Name
Title	**Date**

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

ATTACHMENT G

PROGRESS REPORT OF DBE SUBCONTRACTOR UTILIZATION FORM – DEP FORM

STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
CWSRF DBE PROGRAM

PROGRESS REPORT OF DBE SUBCONTRACTOR UTILIZATION FORM

TO INSURE PROMPT PAYMENT THE FOLLOWING INFORMATION MUST BE SUBMITTED WITH ALL REIMBURSEMENT REQUESTS WHETHER THEY INCLUDE INVOICED AMOUNTS FROM A QUALIFYING WBE OR MBE PARTICIPANT OR NOT:

Municipality/District:_____ SRF #:_____

Name of Project:_____ Contractor:_____

Contractor's Payment Request No._____Period covered by the request_____

The accompanying Reimbursement Request includes the following WBE/MBE participation:

Name & Address of WBE/MBE firm to be paid	WBE	MBE	Source of Certification, i.e., DOT, EPA or SBA	Amount to be paid this request	Type of Work

This attachment must be signed by an authorized representative of the contractor.

Signature_____ Date_____

Name:_____ Title:_____

Address:_____

Phone:_____ E-Mail:_____

ATTACHMENT H

DAVIS BACON PROJECT WAGE DETERMINATION
(TO BE MADE INTO A POSTER)

Enclosed are the wage rate determinations for Heavy construction projects. Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)). Contractor shall not be entitled to any extra compensation for any wage determination changes or addition of classifications.

General Decision Number: ME140018 04/04/2014 ME18

Superseded General Decision Number: ME20130018

State: Maine

Construction Type: Heavy

County: Cumberland County in Maine.

HEAVY CONSTRUCTION PROJECTS including Water and Sewer Lines

Modification Number	Publication Date
0	01/03/2014
1	04/04/2014

* ELEC0567-005 03/01/2014

	Rates	Fringes
ELECTRICIAN.....	$ 31.03	13.78

LABO0976-004 12/01/2013

	Rates	Fringes
LABORER (CONCRETE WORKER).....	$ 19.71	16.42

SUME2011-013 03/16/2011

	Rates	Fringes
CARPENTER, Includes Form Work....	$ 18.00	1.94
CONCRETE FINISHER.....	$ 17.29	2.51
IRONWORKER, Reinforcing.....	$ 20.00	0.00
LABORER: Asphalt Raker.....	$ 16.93	1.91
LABORER: Common or General.....	$ 13.56	1.99
LABORER: Landscape.....	$ 15.00	0.58

LABORER: Pipelayer.....	$ 14.42	2.38
LABORER: Flagger.....	$ 12.43	0.95
LABORER: Wheelman.....	$ 18.74	2.86
OPERATOR: Asphalt Paver.....	$ 18.16	2.30
OPERATOR: Asphalt Roller.....	$ 15.70	1.62
OPERATOR: Backhoe.....	$ 22.22	6.48
OPERATOR: Bulldozer.....	$ 20.43	6.13
OPERATOR: Crane.....	$ 22.60	9.29
OPERATOR: Drill.....	$ 17.09	3.79
OPERATOR: Excavator.....	$ 19.88	5.06
OPERATOR: Loader.....	$ 16.93	3.51
OPERATOR: Mechanic.....	$ 24.35	6.66
OPERATOR: Roller.....	$ 15.99	6.31
TRUCK DRIVER: Low Bed Truck.....	$ 16.43	3.07
TRUCK DRIVER.....	$ 14.67	2.04

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination.

The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination

* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator
(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========
END OF GENERAL DECISION

ATTACHMENT I

DAVIS BACON POSTER “EMPLOYEE RIGHTS”
WH-1321

EMPLOYEE RIGHTS
UNDER THE DAVIS-BACON ACT

FOR LABORERS AND MECHANICS EMPLOYED ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

PREVAILING WAGES

You must be paid not less than the wage rate listed in the Davis-Bacon Wage Decision posted with this Notice for the work you perform.

OVERTIME

You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.

ENFORCEMENT

Contract payments can be withheld to ensure workers receive wages and overtime pay due, and liquidated damages may apply if overtime pay requirements are not met. Davis-Bacon contract clauses allow contract termination and debarment of contractors from future federal contracts for up to three years. A contractor who falsifies certified payroll records or induces wage kickbacks may be subject to civil or criminal prosecution, fines and/or imprisonment.

APPRENTICES

Apprentice rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.

PROPER PAY

If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Officer listed below:

or contact the U.S. Department of Labor's Wage and Hour Division.

For additional information:

1-866-4-USWAGE

(1-866-487-9243) TTY: 1-877-889-5627

WHD U.S. Wage and Hour Division

WWW.WAGEHOUR.DOL.GOV

ATTACHMENT J

DAVIS BACON DOL FORM 1444

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND RATE

CHECK APPROPRIATE BOX
☐ SERVICE CONTRACT
☐ CONSTRUCTION CONTRACT

OMB No.: 9000-0089
Expires: 02/28/96

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the FAR Secretariat (VRS), Office of Federal Acquisition Policy, GSA, Washington, DC 20405; and to the Office of Management and Budget, Paperwork Reduction Project (9000-0089), Washington, DC 20503.

NOTE: THE CONTRACTOR SHALL COMPLETE ITEMS 3 THROUGH 16 AND SUBMIT THE REQUEST, IN QUADRUPLICATE, TO THE CONTRACTING OFFICER

1. **TO:**	2. **FROM:** *(REPORTING OFFICE)*
ADMINISTRATOR, Employment Standards Administration WAGE AND HOUR DIVISION U.S. DEPARTMENT OF LABOR WASHINGTON, D.C. 20210	

3. CONTRACTOR	4. DATE OF REQUEST

5. CONTRACT NUMBER	6. DATE BID OPENED *(SEALED BIDDING)*	7. DATE OF AWARD	8. DATE CONTRACT WORK STARTED	9. DATE OPTION EXERCISED *(IF APPLICABLE) (SCA ONLY)*

10. SUBCONTRACTOR *(IF ANY)*

11. PROJECT AND DESCRIPTION OF WORK *(ATTACH ADDITIONAL SHEET IF NEEDED)*

12. LOCATION *(CITY, COUNTY AND STATE)*

13. IN ORDER TO COMPLETE THE WORK PROVIDED FOR UNDER THE ABOVE CONTRACT, IT IS NECESSARY TO ESTABLISH THE FOLLOWING RATE(S) FOR THE INDICATED CLASSIFICATION(S) NOT INCLUDED IN THE DEPARTMENT OF LABOR DETERMINATION

NUMBER: _____ DATED: _____

a. LIST IN ORDER: PROPOSED CLASSIFICATION TITLES(S); JOB DESCRIPTION(S); DUTIES; AND RATIONALE FOR PROPOSED CLASSIFICATIONS (SCA ONLY)	b. WAGE RATE(S)	c. FRINGE BENEFITS PAYMENTS
(Use reverse or attach additional sheets, if necessary)		

14. SIGNATURE AND TITLE OF SUBCONTRACTOR REPRESENTATIVE *(IF ANY)*	15. SIGNATURE AND TITLE OF PRIME CONTRACTOR REPRESENTATIVE	
16. SIGNATURE OF EMPLOYEE OR REPRESENTATIVE	TITLE	CHECK APPROPRIATE BOX-REFERENCING BLOCK 13. ☐ **AGREE** ☐ **DISAGREE**

TO BE COMPLETED BY CONTRACTING OFFICER *(CHECK AS APPROPRIATE - SEE FAR 22.1019 (SCA) OR FAR 22.406-3 (DBA))*

☐ THE INTERESTED PARTIES AGREE AND THE CONTRACTING OFFICER RECOMMENDS APPROVAL BY THE WAGE AND HOUR DIVISION. AVAILABLE INFORMATION AND RECOMMENDATIONS ARE ATTACHED.

☐ THE INTERESTED PARTIES CANNOT AGREE ON THE PROPOSED CLASSIFICATION AND WAGE RATE. A DETERMINATION OF THE QUESTION BY THE WAGE AND HOUR DIVISION IS THEREFORE REQUESTED. AVAILABLE INFORMATION AND RECOMMENDATIONS ARE ATTACHED.

(Send copies 1, 2, and 3 to Department of Labor)

SIGNATURE OF CONTRACTING OFFICER OR REPRESENTATIVE	TITLE AND COMMERCIAL TELEPHONE NO.	DATE SUBMITED

ATTACHMENT K

DAVIS BACON DOL FORM 1445

LABOR STANDARDS INTERVIEW

CONTRACT NUMBER	EMPLOYEE INFORMATION		
	LAST NAME	FIRST NAME	MI
NAME OF PRIME CONTRACTOR			
	STREET ADDRESS		
NAME OF EMPLOYER			
	CITY	STATE	ZIP CODE
SUPERVISOR'S NAME			
LAST NAME / FIRST NAME / MI	WORK CLASSIFICATION	WAGE RATE	

ACTION	CHECK BELOW YES	NO
Do you work over 8 hours per day?		
Do you work over 40 hours per week?		
Are you paid at least time and a half for overtime hours?		
Are you receiving any cash payments for fringe benefits required by the posted wage determination decision?		

WHAT DEDUCTIONS OTHER THAN TAXES AND SOCIAL SECURITY ARE MADE FROM YOUR PAY?

	TOOLS YOU USE	
HOW MANY HOURS DID YOU WORK ON YOUR LAST WORK DAY BEFORE THIS INTERVIEW?		
DATE OF LAST WORK DAY BEFORE INTERVIEW *(YYMMDD)*		
DATE YOU BEGAN WORK ON THIS PROJECT *(YYMMDD)*		

THE ABOVE IS CORRECT TO THE BEST OF MY KNOWLEDGE

EMPLOYEE'S SIGNATURE			DATE *(YYMMDD)*
INTERVIEWER	SIGNATURE	TYPED OR PRINTED NAME	DATE *(YYMMDD)*

INTERVIEWER'S COMMENTS

WORK EMPLOYEE WAS DOING WHEN INTERVIEWED	ACTION *(If explanation is needed, use comments section)*	YES	NO
	IS EMPLOYEE PROPERLY CLASSIFIED AND PAID?		
	ARE WAGE RATES AND POSTERS DISPLAYED?		

FOR USE BY PAYROLL CHECKER

IS ABOVE INFORMATION IN AGREEMENT WITH PAYROLL DATA?

☐ YES ☐ NO

COMMENTS

CHECKER

LAST NAME	FIRST NAME	MI	JOB TITLE
SIGNATURE			DATE *(YYMMDD)*

ATTACHMENT L

DAVIS BACON DOL FORM WH-347
OPTION PAYROLL FORM

U.S. Department of Labor
Wage and Hour Division

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

U.S. Wage and Hour Division

Rev. Dec. 2008

NAME OF CONTRACTOR ☐ OR SUBCONTRACTOR ☐	ADDRESS	OMB No.: 1215-0149 Expires: 12/31/2011
PAYROLL NO. / FOR WEEK ENDING	PROJECT AND LOCATION	PROJECT OR CONTRACT NO.

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT. OR ST.	(4) DAY AND DATE / HOURS WORKED EACH DAY							(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS FICA	WITH-HOLDING TAX			OTHER	TOTAL DEDUCTIONS	(9) NET WAGES PAID FOR WEEK
			O																	
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that is will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

(over)

ATTACHMENT M

DAVIS BACON DOL FORM WH-347
MANDATORY PAYROLL CERTIFICATE FORM

Date _____

I, _____ _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____; that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Start. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

_____

_____

_____

_____

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ – in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ – Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

ATTACHMENT N

DAVIS BACON WEEKLY PAYROLL COMPLIANCE FORM FOR OWNER

Owner's Davis-Bacon Compliance Report

State Revolving Loan Fund

List all weekly certified payrolls for the application period:

Contractor / Subcontractor Name	Week Ending	Compliant (Yes/ No)	Comments

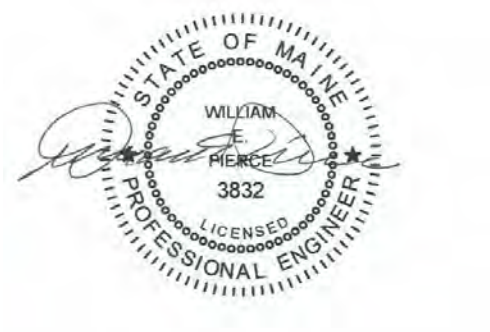
CONTRACT DOCUMENTS

FOR

2014
WATER MAIN REPLACEMENT

WASHINGTON AVENUE – PHASE III
(Inverness Street to Ocean Avenue)
&
WEST KIDDER STREET

Portland, Maine



June 2014

PORTLAND WATER DISTRICT
225 Douglass Street
Portland, Maine 04104

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SECTION 00020 - INVITATION TO BID

This section contains additional information applicable only to the Portland Water District work associated with the project.

Disclaimer

Any contract awarded under this Invitation to Bid is expected to be funded in part by a Maine Drinking Water State Revolving Loan. Neither the State of Maine nor any of its departments, agencies or employees is, or will be, a party to the Contract.

Notice to Bidders

Any person interested in Bidding on this contract must become thoroughly familiar with the DHS Supplemental Conditions. Failure to comply with any of these conditions may result in the bidder not being eligible for the award of this Contract.

Minority and Women Business Enterprise Requirements

Each bidder shall take special notice of the Guidance for use of Minority and Women Business Enterprises in the DHS Supplemental General Conditions. Failure to complete these requirements may result in finding the Bidder is non-responsive and therefore not eligible to be awarded this Contract. Complete requirements are located in the Bid Documents.

Nondiscrimination in Employment and Labor Standards

Bidders on this work will be required to comply with the President's Executive Order No. 11246 and amendments and supplements to that order. The requirements for Bidders and Contractors under this Order are located in the DHS Supplemental Conditions.

Federal Requirements

The Contractor must comply with the Department of Labor Relations relating to the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented by 29 CFR part 3, Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by 29 CFR part 5; and the Occupational Safety and Health Standards(OSHA)(29 CFR part 1910).

The Contractor must comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 U.S. C. 1857(H)), section 508 of the Clean Water Act (33 U.S.C. 1368), Safe Drinking Water Act, Executive Order 11738, Environmental Protection Agency regulations (40 CFR Part 15).

The Contractor must comply with all permits, restrictions and conditions, issued for the project by Federal Cross-Cutting Authorities.

Federal Davis Bacon wage rates apply on this project. The Federal Wage Determination is attached to the specifications or will be supplied as a separate document, issued as an addendum. It is the responsibility of the Contractor, before the bid opening, to request, if necessary, any additional information on Federal Wage Rates for those tradespeople who are not covered by the applicable Federal Wage Decision, but who may be employed for the proposed work under this contract.

Additional wage classifications and rates can only be added after bid opening. If required classifications are not listed in the wage determination, the contractor must list the classifications and the rates he proposes to pay. This list will be forwarded to the Department of Labor for approval. If the Department of Labor rejects any or all of the proposed rates as being too low, the contractor will be required to pay the higher rate at no increase in total

project cost. In any event, the rates the contractor proposes to pay to those unlisted classifications should not be lower than the rate paid to a laborer.

SECTION 00200 - INSTRUCTIONS TO BIDDERS

This section contains additional information applicable only to the Portland Water District work associated with the project.

1.01 Any contract awarded under these Instructions to Bidders is expected to be funded in part by a Maine Drinking Water State Revolving Fund loan. Neither the State of Maine nor any of its departments, agencies, or employees will be a party to the Contract.

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

1.03 Nondiscrimination in Employment:

a. Contracts for work under this proposal will obligate the contractors and the subcontractors not to discriminate in employment practices.
b. Bidders must submit with their initial bid a signed statement as to whether they have previously performed work subject to the President's Executive Order No. 11246, or any preceding similar Executive Order.
c. Bidders must, if requested, submit a compliance report concerning their employment practices and policies in order to maintain their eligibility to receive the award of the contract.
d. Successful bidders must, if requested, submit a list of all subcontractors who will perform work on the project, and written signed statements from authorized agents of labor pools with which they will or may deal for employees on the work together with supporting information to the effect that such labor pools' practices and polices are in conformity with Executive Order No. 11246; that they will affirmatively cooperate in or offer no hindrance to the recruitment, employment, and equal treatment of employees seeking employment and performing work under the contract or a certification as to what efforts have been made to serve such statements when such agents or labor pools have failed or refused to furnish them prior to award of the contact.
e. The successful bidder must be prepared to comply in all respects with the contract provisions regarding nondiscrimination.

1.04 Minority and Women Business Enterprise Requirements

a. The Contractor will take all necessary affirmative steps to assure that minority firms, women's business enterprises, and labor surplus area firms are used when possible.
b. Affirmative steps shall include: (i) placing qualified small and minority business and women's enterprises on solicitation lists; (ii) assuring that small and minority business and women's business enterprises are solicited whenever they are potential sources; (iii) dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises; (iv) establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises, and using the services of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.
c. The goals for this project are a minimum of 2.28% MBE and WBE participation (0.64% MBE and 1.64% WBE). If these goals are not met the successful bidder must demonstrate a good faith effort toward meeting the goals. The successful bidder must submit to the Owner, within 10 days of the bid opening, the appropriate one of either Attachment A (MBE/WBE goals having been met) or Attachment B (MBE/WBE goals not having been met) completed in its entirety. In addition, the Contractor shall submit to the Owner a compliance report (Attachment C) listing MBE's and WBE's, their work and the amount of payment to each, during each pay request period, for the duration of the contract. Attachments A, C and C are Exhibit 1 to this document. Note: The most recent copy of the Maine Department of Transportation's "Certified Disadvantaged Business Enterprise Directory" is available at the following

address: http://www.maine.gov/mdot/desadvantaged-business-enterprise/pdf/directory.pdf. (A hard copy will be provided upon request.

1.05 Davis Bacon Wages

a. Federal Davis Bacon wage rates apply to this project. The Federal Wage Determination is attached to these specifications. It is the responsibility of the Contractor, before bid opening, to request, if necessary, any additional information on Federal Wage Rates for those trades people who are not covered by the applicable Federal Wage Decision, but who may be employed for the proposed work under this contract.

1.06 Manufacturer's Experience

If an equipment manufacturer does not meet the specified period of experience with a product, the equipment can still be considered if the equipment supplier or manufacturer is willing to provide a bond or cash deposit for the duration of the specified time period which will guarantee equipment replacement.

END OF SECTION

SECTION 00420 – COMPLIANCE STATEMENT

EXECUTIVE ORDER 11246

Date:

This statement relates to a proposed contract with Portland Water District, who expects to finance the contract with assistance from an agency or agencies of the United States Government. I am the undersigned bidder or prospective contractor. I represent that ----

1. I ( ) have, ( ) have not, participated in a previous contact or subcontract subject to Executive Order 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.

2. If I have participated in such a contract or subcontract, I ( ) have, ( ) have not filed all compliance reports that I have been required to file in connection with the contract or subcontract.

I understand that if I fail to file any compliance reports that have been required of me, I am not eligible and will not be eligible to have my bid considered or to enter into the proposed contract unless and until I make an arrangement regarding such reports that is satisfactory to the office where the reports are required to be filed.

_____
Signature of Bidder or Prospective Contractor

_____
Street Address / P.O. Box

_____
City, State and Zip Code

END OF SECTION

SECTION 00510 – NOTICE OF AWARD

Dated _____

Project:	Owner:	Owner's Contract No.:
Contract:		Engineer's Project No.:
Bidder:		
Bidder's Address: (send Certified Mail, Return Receipt Requested)		

You are notified that your Bid dated _____ for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for Washington Avenue – Phase III and West Kidder Street Water Main Replacements, Portland, Maine.

The Contract Price of your Contract is _____.

(Insert appropriate data if Unit Prices are used.)

You must comply with the following conditions precedent within [15] days of the date you receive this Notice of Award.

1. Deliver to the Owner two (2) fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security [Bonds] as specified in the General Conditions (Paragraph 5.01) [and Supplementary Conditions (Paragraph SC-5.01).]
3. Deliver with the executed Contract Documents Certificates of Insurance as specified in Supplementary Conditions Paragraph 5.03.

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

PORTLAND WATER DISTRICT

By: _____
Ronald Miller, General Manager

SECTION 00520 -AGREEMENTBETWEEN OWNER AND CONTRACTORFOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between PORTLAND WATER DISTRICT ("Owner") and

_____ ("Contractor").

Owner and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 – WORK

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

Washington Avenue - Phase III and West Kidder Street Water Main Replacements, Portland, Maine

ARTICLE 2 – THE PROJECT

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

Washington Avenue – Phase III and West Kidder Street Water Main Replacements, Portland, Maine

ARTICLE 3 – ENGINEER

3.1 The Project has been designed by Portland Water District, who is to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.1 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.

4.2 Days to Achieve Substantial Completion and Final Payment

A. The Work must progress so as not to delay the completion of work under a separate contract between the Contractor and the City of Portland in the same general vicinity.

4.3 Liquidated Damages

A. There are no liquidated damages specified in this contract.

ARTICLE 5 – CONTRACT PRICE

5.1 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 5.01.A. below:

A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit

ARTICLE 6 – PAYMENT PROCEDURES

6.1 Submittal and Processing of Payments

A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.2 Progress Payments; Retainage

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 30th day of each month during performance of the Work as provided in Paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

B.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions:

    a. 90 percent of Work completed (with the balance being retainage). If the work has been 50 percent completed as determined by Engineer, and if the character and progress of the work has been satisfactory to Owner and Engineer, Owner, on recommendation of Engineer, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no additional retainage;

    b. No payment will be made for materials not incorporated in the work.

2. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 98 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions.

6.3 Final Payment

A. Upon receipt of the final Application for Payment accompanied by Engineer's recommendation of payment in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay Contractor as provided in Paragraph 14.07 of the General Conditions the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages.

ARTICLE 7 – INTEREST

7.1 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the maximum legal rate.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.1 In order to induce Owner to enter into this Agreement Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

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

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

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in Paragraph 4.06 of the General Conditions.

E. Contractor has obtained and carefully studied (or assumes responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto.

F. Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

I. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.1 Contents

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to 6, inclusive).

2. Performance bond (pages 1 to 2, inclusive).

3. Payment bond (pages 1 to 2, inclusive).

4. General Conditions (pages 1 to 51, inclusive).

5. Supplementary Conditions (pages 1 to 9, inclusive).

6. Specifications as listed in the table of contents of the Project Manual.

7. Drawings consisting of 6 sheets with each sheet bearing the following general title: Washington Avenue- Phase III and West Kidder Street Water Main Replacements, Portland, Maine.

8. Addenda (numbers _____to _____, inclusive).

9. Exhibits to this Agreement (enumerated as follows):

    a. Contractor's Bid (pages _ to _, inclusive).

    b. Executive Order 11246 Compliance Statement

    c. MBE/WBE Attachment ____ (A or B)

    d. Documentation submitted by Contractor prior to Notice of Award (pages _____ to _____, inclusive).

10. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

    a. Notice to Proceed

    b. Work Change Directive(s).

    c. Change Order(s).

B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.1 Terms

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

10.2 Assignment of Contract

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

10.3 Successors and Assigns

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

10.4 Severability

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

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

This Agreement will be effective on _____, 2014 (*which is the Effective Date of the Agreement*).

OWNER:	CONTRACTOR
PORTLAND WATER DISTRICT	_____
By: _____	By: _____
Title: GENERAL MANAGER	Title: _____
[CORPORATE SEAL]	[CORPORATE SEAL]
Attest: _____	Attest: _____
Title: _____	Title: _____
Address for giving notices:	Address for giving notices:
_____	_____
_____	_____
_____	_____
	Agent for service of process:
	_____
	(If Contractor is a corporation or a partnership, attach evidence of authority to sign.)

END OF SECTION

SECTION 00610 - PERFORMANCE BOND

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

CONTRACTOR (Name and Address):

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

OWNER (Name and Address):

PORTLAND WATER DISTRICT
225 Douglass Street
Portland, Maine 04104-3553

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

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

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

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

SURETY
_____ (Seal)
Surety's Name and Corporate Seal

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

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

Attest: _____
Signature and Title

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

SURETY
_____ (Seal)
Surety's Name and Corporate Seal

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

Attest: _____
Signature and Title

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

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

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

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

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

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

1. Surety in accordance with the terms of the Contract;

2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.

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

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

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

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

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

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

2. Deny liability in whole or in part and notify Owner citing reasons therefore.

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

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

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

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

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

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

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

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

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

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

12. Definitions.

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

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

12.3. Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

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

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

SECTION 00615 - PAYMENT BOND

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

CONTRACTOR (Name and Address):

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

OWNER (Name and Address):

PORTLAND WATER DISTRICT
225 Douglass Street
Portland, Maine 04104-3553

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

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

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

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

SURETY
_____ (Seal)
Surety's Name and Corporate Seal

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

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

Attest: _____
Signature and Title

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

SURETY
_____ (Seal)
Surety's Name and Corporate Seal

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

Attest: _____
Signature and Title

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.

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

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

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

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

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

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

4.2. Claimants who do not have a direct contract with Contractor:

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

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

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

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

6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:

6.1. Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2. Pay or arrange for payment of any undisputed amounts.

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

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

9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

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

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the 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.

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

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

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

15. DEFINITIONS

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

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

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

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

SECTION 00620 –CONTRACTOR'S APPLICATION FOR PAYMENT NO. _____

	Application Period:	Application Date:
To (Owner):	From (Contractor):	Via (Engineer)
Project:	Contract:	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.:

APPLICATION FOR PAYMENT

Change Order Summary

Approved Change Orders		
Number	Additions	Deductions
TOTALS		
NET CHANGE BY CHANGE ORDERS		

1. ORIGINAL CONTRACT PRICE	**$**	
2. Net change by Change Orders	**$**	
3. CURRENT CONTRACT PRICE (Line 1 ± 2)	**$**	
4. TOTAL COMPLETED TO DATE (Column G on Progress Estimate)	**$**	
5. RETAINAGE:		
a. _____ % x $_____ Work Completed	**$**	
6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5)	**$**	
7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)	**$**	
8. AMOUNT DUE THIS APPLICATION	**$**	

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that: (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

By:	Date:

Payment of: $_____
(Line 8 or other - attach explanation of other amount)

is recommended by: _____ _____
(Engineer) (Date)

Payment of: $_____
(Line 8 or other - attach explanation of other amount)

is approved by: _____ _____
(Owner) (Date)

Approved by: _____ _____
Funding Agency (if applicable) (Date)

Progress Estimate **Contractor's Application**

For (contract):	Application Number:
Application Period:	Application Date:

A		B	C	D	E	F	G	H
Bid Item No.	Description	Bid Quantity	Unit Price	Contract Amount	Quantity From Previous Applications	Quantity This Period	Total Value Completed to Date	% Complete
	Totals							

SECTION 00625 – CERTIFICATE OF SUBSTANTIAL COMPLETION

Project:	Owner:	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.:

This [tentative] [definitive] Certificate of Substantial Completion applies to:

☐ All Work under the Contract Documents: ☐ The following specified portions:

_____

_____

_____

_____

_____
Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

A [tentative] [revised tentative] [definitive] list of items to be completed or corrected, is attached hereto. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:

☐ Amended Responsibilities ☐ Not Amended

Owner's Amended Responsibilities: _____

_____

_____

Contractor's Amended Responsibilities: _____

_____

_____

The following documents are attached to and made part of this Certificate: _____

_____

_____

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Executed by Engineer	Date
Accepted by Contractor	Date
Accepted by Owner	Date

SECTION 00700 – STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.1 Defined Terms

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

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

2. *Agency* – The Federal or state agency named as such in the Agreement.

3. *Agreement* – The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

4. *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.

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

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

7. *Bidder* – The individual or entity who submits a Bid directly to Owner.

8. *Bidding Documents* – The Bidding Requirements and the proposed Contract Documents (including all Addenda).

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

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

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

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

13. *Contract Documents* – Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other

Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

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

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

16. *Contractor* – The individual or entity with whom Owner has entered into the Agreement.

17. *Cost of the Work* – See Paragraph 11.01.A for definition.

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

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

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 which does not involve a change in the Contract Price or the Contract Times.

22. *General Requirements* – Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

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

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

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

26. *Liens* – Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

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

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

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

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

31. *PCBs* – Polychlorinated biphenyls.

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

33. *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.

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

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

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

37. *Related Entity* – An officer, director, partner, employee, agent, consultant, or subcontractor.

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

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

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

41. *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.

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

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

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

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

46. *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.

47. *Successful Bidder* – The Bidder submitting a responsive Bid to whom Owner makes an award.

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

49. *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 any Subcontractor.

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

51. *Unit Price Work* – Work to be paid for on the basis of unit prices.

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

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

1.2 Terminology

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

B. Intent of Certain Terms or Adjectives

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

supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. Day

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

D. Defective

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

a. does not conform to the Contract Documents, or

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

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

E. Furnish, Install, Perform, Provide

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

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

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

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

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

ARTICLE 2 – PRELIMINARY MATTERS

2.1 Delivery of Bonds and Evidence of Insurance

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

B. Evidence of Insurance: Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional

insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.2 Copies of Documents

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

2.3 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement.

2.4 Starting the Work

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

2.5 Before Starting Construction

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

1. a preliminary Progress Schedule;

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.

2.6 Preconstruction Conference

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

2.7 Initial Acceptance of Schedules

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

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

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

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

ARTICLE 3 – CONTRACT DOCUMENTS, INTENT, AMENDING, REUSE

3.1 Intent

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

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

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

3.2 Reference Standards

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

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

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

3.3 Reporting and Resolving Discrepancies

A. Reporting Discrepancies

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

2. Contractor's Review of Contract Documents During Performance of Work: If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual

or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

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

B. Resolving Discrepancies

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

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

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

3.4 Amending and Supplementing Contract Documents

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

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

1. A Field Order;

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

3. Engineer's written interpretation or clarification.

3.5 Reuse of Documents

A. Contractor and any Subcontractor or Supplier shall not:

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

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

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

3.6 Electronic Data

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

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

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

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

4.1 Availability of Lands

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

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

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

4.2 Subsurface and Physical Conditions

A. Reports and Drawings: The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

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

B. Limited Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary

Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

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

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

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

4.3 Differing Subsurface or Physical Conditions

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

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

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

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

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

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

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

C. Possible Price and Times Adjustments

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

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

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

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

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

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

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

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

4.4 Underground Facilities

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

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

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

a. reviewing and checking all such information and data,

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

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

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

B. Not Shown or Indicated

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

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

4.5 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.

4.6 Hazardous Environmental Condition at Site

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

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

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

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

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 any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) 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.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. 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, either party may make a Claim therefore as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefore as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.1 Performance, Payment, and Other Bonds

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

Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

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

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

5.2 Licensed Sureties and Insurers

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

5.3 Certificates of Insurance

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

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

5.4 Contractor's Liability Insurance

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

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

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

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

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

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

6. by any other person for any other reason;

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

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

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

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

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

3. include completed operations insurance;

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

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

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

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

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

5.5 Owner's Liability Insurance

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

5.6 Property Insurance

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (Contractor shall be responsible for any deductible or self-insured retention.). This insurance shall:

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

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

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

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

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

6. include testing and startup; and

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

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

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

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

5.7 Waiver of Rights

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of

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

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

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

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

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

5.8 Receipt and Application of Insurance Proceeds

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

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

5.9 Acceptance of Bonds and Insurance; Option to Replace

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with

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

5.10 Partial Utilization, Acknowledgment of Property Insurer

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

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.1 Supervision and Superintendence

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

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

6.2 Labor; Working Hours

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

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

6.3 Services, Materials, and Equipment

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and

machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

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

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

6.4 Progress Schedule

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

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

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

6.5 Substitutes and "Or-Equals"

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

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

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

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

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

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

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

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

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

2. Substitute Items

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

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

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

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

1) shall certify that the proposed substitute item will:

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

be similar in substance to that specified, and

be suited to the same use as that specified;

2) will state:

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

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

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

3) will identify:

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

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

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

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

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

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

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

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

6.6 Concerning Subcontractors, Suppliers, and Others

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

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

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

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

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

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

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

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

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

6.7 Patent Fees and Royalties

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

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

6.8 Permits

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

6.9 Laws and Regulations

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

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

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

6.10 Taxes

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

6.11 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

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

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

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

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

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

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

6.12 Record Documents

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

6.13 Safety and Protection

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

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

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

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

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

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be

liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

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

6.14 Safety Representative

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

6.15 Hazard Communication Programs

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

6.16 Emergencies

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

6.17 Shop Drawings and Samples

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

1. Shop Drawings

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

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

2. Samples

   a. Submit number of Samples specified in the Specifications.

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

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

C. Submittal Procedures

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

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

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

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

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

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

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

D. Engineer's Review

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

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

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

E. Resubmittal Procedures

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

6.18 Continuing the Work

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

6.19 Contractor's General Warranty and Guarantee

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

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

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

2. normal wear and tear under normal usage.

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

1. observations by Engineer;

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

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

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

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

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

7. any correction of defective Work by Owner.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any

negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

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

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 Delegation of Professional Design Services

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

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

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

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

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

ARTICLE 7 – OTHER WORK AT THE SITE

7.1 Related Work at Site

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

1. written notice thereof will be given to Contractor prior to starting any such other work; and

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

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.2 Coordination

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

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

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

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

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

7.3 Legal Relationships

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

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

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

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.1 Communications to Contractor

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

8.2 Replacement of Engineer

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

8.3 Furnish Data

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

8.4 Pay When Due

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

8.5 Lands and Easements; Reports and Tests

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

8.6 Insurance

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

8.7 Change Orders

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

8.8 Inspections, Tests, and Approvals

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

8.9 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.

8.10 Undisclosed Hazardous Environmental Condition

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 Evidence of Financial Arrangements

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.1 Owner's Representative

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

9.2 Visits to Site

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

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

9.3 Project Representative

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

9.4 Authorized Variations in Work

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by

the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided in Paragraph 10.05.

9.5 Rejecting Defective Work

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

9.6 Shop Drawings, Change Orders and Payments

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

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

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

9.7 Determinations for Unit Price Work

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

9.8 Decisions on Requirements of Contract Documents and Acceptability of Work

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

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

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

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

9.9 Limitations on Engineer's Authority and Responsibilities

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

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

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

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

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

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.1 Authorized Changes in the Work

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

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

10.2 Unauthorized Changes in the Work

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

10.3 Execution of Change Orders

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

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

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

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

10.4 Notification to Surety

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

10.5 Claims

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

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

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

1. deny the Claim in whole or in part,

2. approve the Claim, or

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

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

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

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.1 Cost of the Work

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

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

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

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

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

5. Supplemental costs including the following:

   a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

   b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

   c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

   d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

   e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

   f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

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

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

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

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

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

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

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

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

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

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

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

11.2 Allowances

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

B. Cash Allowances

1. Contractor agrees that:

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

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

C. Contingency Allowance

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

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

11.3 Unit Price Work

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

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

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

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

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

1. the Bid price of a particular item of Unit Price Work amounts to more than 5 percent of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 25 percent from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect to any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.1 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. Contractor's Fee: The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.2 Change of Contract Times

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.3 Delays

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefore as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.1 Notice of Defects

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.2 Access to Work

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.3 Tests and Inspections

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.4 Uncovering Work

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefore as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefore as provided in Paragraph 10.05.

13.5 Owner May Stop the Work

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.6 Correction or Removal of Defective Work

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.7 Correction Period

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

   1. repair such defective land or areas; or

   2. correct such defective Work; or

   3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

   4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.8 Acceptance of Defective Work

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefore as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.9 Owner May Correct Defective Work

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefore as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 Schedule of Values

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.2 Progress Payments

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property

insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

   b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

   a. to supervise, direct, or control the Work, or

   b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

c. the Contractor's performance or furnishing of the Work is inconsistent with funding Agency requirements;

d. there are other items entitling Owner to a set-off against the amount recommended; or

e. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to

by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.3 Contractor's Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.4 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, Owner, Agency, Contractor, and Engineer shall make a prefinal inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefore.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefore. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.5 Partial Utilization

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefore. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.6 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, Agency, and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.7 Final Payment

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

   b. consent of the surety, if any, to final payment;

   c. a list of all Claims against Owner that Contractor believes are unsettled; and

   d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien

could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer's Review of Application and Acceptance

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.8 Final Completion Delayed

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims. The remaining balance of any sum included in the final Application for Payment but held by OWNER for Work not fully completed and accepted will become due when the Work is fully completed and accepted.

14.9 Waiver of Claims

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.1 Owner May Suspend Work

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefore as provided in Paragraph 10.05.

15.2 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.3 Owner May Terminate For Convenience

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.4 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, 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 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.1 Methods and Procedures

A. Owner and Contractor may mutually request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim to another dispute resolution process, or

3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.1 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 to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.2 Computation of Times

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.3 Cumulative Remedies

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.4 Survival of Obligations

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.5 Controlling Law

A. This Contract is to be governed by the law of the state in which the Project is located.

17.6 Headings

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SECTION 00810 – SUPPLEMENTARY CONDITIONS

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SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. C-710, 2002 Edition) 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.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

SC-1.01.A.4 Application for Payment

Add the following language to the end of Paragraph 1.01.A.4:
The Application for Payment form to be used on this project is EJCDC No. C-620. The Agency must approve all Applications for Payment before payment is made.

SC-1.01.A.10 Change Order

Add the following language to the end of Paragraph 1.01.A.10:
The Change Order form to be used on this project is EJCDC No. C-941. The Agency must approve all Change Orders before they become effective.

SC-1.01.A.43 Site

Add the following language after the first sentence of Paragraph 1.01.A.43:
The term "Site" may include locations within public streets wherein the OWNER'S utility plant is to be constructed and/or replaced.

SC-2.01.B Delivery of Bonds and Evidence of Insurance

Delete Paragraph 2.01.B in its entirety and insert the following in its place:

B. Evidence of Insurance: Before any Work at the Site is started, Contractor shall deliver to the Owner, with copies for each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which any additional insured may reasonably request) which Contractor is required to purchase and maintain in accordance with Article 5.

SC-2.02 Copies of Documents

Delete Paragraph 2.02.A in its entirety and insert the following in its place:

A. Owner shall furnish to Contractor One printed or hard copy of the Drawings and Project Manual and one set in electronic format. Additional copies will be furnished upon request at the cost of reproduction.

SC-2.05.A.3 Preliminary Schedules

Delete Paragraph 2.05.A.3 in its entirety and substitute the following:
3. A preliminary Schedule of Values is required for each lump sum item of the Work for which partial payment may be requested. Each required Schedule of Values shall include quantities and prices of items which when added together equal the Lump Sum Price for that item 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.

SC-4.01 Availability of Lands

Delete Paragraphs GC-4.01.C in its entirety and insert the following:
C. The CONTRACTOR shall provide at his own expense and without liability to the OWNER any land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials and equipment.

SC-4.02 Subsurface and Physical Conditions

Delete Paragraphs 4.02.A and 4.02.B in their entirety and insert the following:

A. No reports of explorations or tests of subsurface conditions at or contiguous to the Site are known to the Owner or Engineer.

SC-4.03.A Differing Subsurface or Physical Conditions

Delete Paragraphs 4.03.A in its entirety and insert the following:
A Notice: If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

SC-4.04.B.1 Underground Facilities – Not Shown or Indicated

Amend the first sentence of Paragraph 4.04.B.1 to read as follows:
If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

SC-4.04.B.2 Underground Facilities - Not Shown or Indicated

Amend the second sentence of Paragraph 4.04.B.2 to read as follows:
An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated.

SC-4.05 Reference Points

Delete the first sentence of paragraph A in its entirety. Modify the second sentence to read as follows:
Contractor shall be responsible for laying out the Work, shall protect and preserve any established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner.

SC-4.06 Hazardous Environmental Condition

Delete Paragraphs 4.06.A and 4.06.B in their entirety and insert the following:
A. No reports or drawings related to Hazardous Environmental Conditions are known to Owner or Engineer.
B. Not Used.

SC-5.02 Licensed Sureties and Insurers

Modify the first sentence of paragraph A by deleting the words: “Owner or”.

SC-5.03 Certificates of Insurance

SC-5.03.A: Delete paragraph 5.03.A in its entirety and substitute the following:

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required by this contract to purchase and maintain.
SC-5.03.B: Delete paragraph 5.03.B in its entirety and substitute the following:
B. Failure of Owner to demand such certificates or other evidence of full compliance with these insurance requirements or failure of Owner to identify a deficiency from evidence provided shall not be construed as a waiver of Contractor’s obligation to maintain such insurance.
SC-5.03.C: Add the following new paragraph immediately after Paragraph 5.03.B:

C. By requiring such insurance and insurance limits herein, Owner does not represent that coverage and limits will necessarily be adequate to protect Contractor, and such coverage and limits shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

SC-5.04 Contractor's Liability Insurance

SC-5.04.A: Delete paragraph 5.04.A in its entirety and substitute the following:
A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as required by the Supplemental Conditions, and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
SC-5.04.B.7: Amend the duration of coverage in this paragraph SC-5.04.B.7 to be at least three years.
SC-5.04.C: Add the following new paragraph immediately after Paragraph 5.04.B:
C. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs 5.04.A.1 and A.2 of the General Conditions:
   a. State of Maine Statutory
   b. Applicable Federal: Statutory
   c. Employers Liability: $2,000,000

2. Contractor's General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Contractor:

   a. General Aggregate: $2,000,000
   b. Products – Completed Operations Aggregate: 2,000,000
   c. Personal and Advertising Injury: $2,000,000
   d. Each Occurrence (Bodily Injury and Property Damage): $1,000,000
   e. Property Damage liability insurance will provide Explosion, Collapse, and Under-ground coverages where applicable.
   f. Excess or Umbrella Liability
      1) General Aggregate $1,000,000
      2) Each Occurrence $1,000,000

3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:

   a. Bodily Injury:
      Each person $1,000,000
      Each Accident $1,000,000
   b. Property Damage:
      Each Accident $1,000,000
   c. Combined Single Limit of $2,000,000

4. The Contractual Liability coverage required by Paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:

   a. Bodily Injury:
      Each Accident $1,000,000
      Annual Aggregate $2,000,000
   b. Property Damage:
      Each Accident $1,000,000
      Annual Aggregate $2,000,000

5. Additional insureds shall include: The Portland Water District.

SC-5.05 Owner's Liability Insurance

Delete Paragraph 5.05 in its entirety.

SC-5.06 Property Insurance

Delete Paragraph 5.06 in its entirety.

SC-5.07 Waiver of Rights

Delete paragraphs GC-5.07.B and GC-5.07.C in their entirety. (The terms of the District's insurance policies require that it transfer its rights of recovery against another party to the District's insurer.)

SC-5.09 Acceptance of Bonds and Insurance; Option to Replace

Delete paragraph GC-5.09 in its entirety.

SC-6.02 Labor; Working Hours

Insert the following Paragraph in it's entirety directly after 6.02.B
C. If the Contractor must Work beyond the regular Work week at anytime, all expenses, including labor costs, of the Engineer and personnel required for inspection or observation shall be deducted monthly from any sums due or which shall become due to the Contractor.

SC-6.03 Services Materials and Equipment

Insert the following Paragraphs in their entirety directly after 6.02.C
D. Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection.

E. No Chattel Mortgages: Materials, supplies, or equipment to be incorporated into the Work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale Contract or other agreement by which an interest is retained by the seller.

SC-6.06 Concerning Subcontractors, Suppliers, and Others

SC-6.06.B: Delete paragraph 6.06.B in its entirety and substitute the following:

B. Within 5 days of the Bid opening and before the Notice of Award, the apparent Successful Bidder is required to identify all Subcontractors, Suppliers, or other individuals or entities that will supply a work value equal to or greater than 10% of the total contract value, for acceptance by Owner.
1. Owner's acceptance will be indicated by issuance of a Notice of Award to the Contractor. Owner's objections if any, to any listed Subcontractors, Suppliers, or other individuals or entities will be communicated in writing to the apparent Successful Bidder.
2. Owner's acceptance of any Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. In the event that the Owner rejects a Subcontractor, Supplier, or other individual or entity, either before the Notice of Award, or after execution of the Agreement, the Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
SC-6.06.H. Add a new paragraph immediately after Paragraph 6.06.G:

H. Owner or Engineer 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 a particular Subcontractor or Supplier.
SC-6.06.I. Add a new paragraph immediately after Paragraph 6.06.H:

I. The Contractor shall not award Work to Subcontractor(s) in excess of fifty (50) percent of the Contract Price without prior written approval of the Owner.

SC-6.10 Taxes

Add a new paragraph immediately after Paragraph 6.10.A:
B. Owner is exempt from payment of sales and compensating use taxes of the State of Maine and of cities and counties thereof on all materials to be incorporated into the Work.

1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of equipment, supplies and materials to be physically incorporated into the Work such that they become a part of the real estate.

2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials consumed in, but not incorporated into, the Work.

SC-6.13 Safety and Protection

Add a new paragraph immediately after Paragraph 6.13.D:
E. Confined Space and Lock-out/Tag-out programs: The Contractor is advised that the Owner has clearly established on-going Confined Space and Lock-out/Tag-out programs. Where the Contractor's Work requires confined space entry into existing facilities and/or lock-out/tag-out of existing equipment and electrical controls, the Contractor shall strictly abide by the Owner's programs if they are more stringent than the Contractor's own procedures.

SC-6.17 Shop Drawings and Samples

SC 6.17.B Delete paragraph GC-6.17.B in its entirety and insert the following in its place:
B. Portions of the Work requiring a Shop Drawing or sample submission shall not begin until the Shop Drawing or submission has been approved by the Engineer. 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 all pertinent submittals will be at the sole risk, expense and responsibility of Contractor.
SC-6.17.C.4 Add the following paragraph after paragraph SC-6.17.C.3:
4. Each submittal shall be cataloged and identified individually according to the specification section, paragraph, sub paragraph, etc. to which it pertains. Submittals from various specifications shall not be grouped into one submittal pertaining to a larger piece of the Work or the work of a single supplier. For example, submittals for pumps, pipe of various types and fittings that are specified in separate sections of the Contract Documents may not be cataloged and identified as a single submittal pertaining to a pump station or other facility, or as a submittal from a single supplier.
SC-6.17.F: Add the following new paragraphs immediately after Paragraph 6.17.E:

F. Contractor shall furnish required submittals with sufficient information and accuracy in order to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing subsequent submittals of Shop Drawings, samples or other items requiring approval and Contractor shall reimburse Owner for Engineer's charges for such time.
SC-6.17.G: Add the following new paragraphs immediately after new Paragraph 6.17.F:

G. In the event that Contractor requests a substitution for a previously approved item, Contractor shall reimburse Owner for Engineer's charges for such time unless the need for such substitution is beyond the control of Contractor.
SC-6.19.B: Contractor's General Warranty and Guarantee
Delete Paragraphs B, B.1 and B.2 in their entirety and substitute the following:

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
1. abuse, modification, or improper maintenance or operation by persons or entities for whom the Contractor is not responsible; or
2. normal wear and tear under normal usage that occurs after Substantial Completion.

SC-7.01.A.2 Related Work at Site

Delete GC-7.01.A.2 in its entirety.

SC-8 Owner's Responsibilities

Delete Paragraphs 8.04, 8.05, 8.06, 8.07, 8.08, 8.10 and 8.11 in their entirety and substitute the following:
8.04 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-9 Engineer's Status during Construction

SC-9.01 Owner's Representative
Delete Paragraph 9.01.A in its entirety and substitute the following:
A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.
SC-9.03 Project Representative
Delete Paragraph 9.03.A in its entirety and substitute the following:

A. Owner will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the following paragraph SC-9.03.B, and limitations on the responsibilities thereof will be as provided in General Condition Paragraph 9.09.

B. Duties, Responsibilities and Limitations of Authority of Resident Project Representative.

1. General
a. Resident Project Representative is Owner's agent, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding his actions. Resident Project Representative's dealings in matters pertaining to the on-site work shall in general be only with ENGINEER and Contractor(s), and dealings with subcontractor(s) shall only be through or with the full knowledge of Contractor(s).
b. Resident Project Representative services shall be provided as the progress of construction necessitates.

2. Duties and Responsibilities - Resident Project Representative will:
a. Schedules: Review the progress schedule, schedule of Shop Drawing submissions and schedule of values prepared by Contractor(s) and consult with ENGINEER concerning their acceptability.
b. Conference: Attend preconstruction conferences. Arrange a schedule of progress meetings and other job conferences, as required, in consultation with ENGINEER and notify those expected to attend in advance. Attend meetings and maintain and circulate copies of minutes thereof.
c. Liaison: Serve as ENGINEER's liaison with Contractor(s), working principally through Contractor(s)' superintendent.
d. Shop Drawings and Samples:
1) Receive samples which are furnished at the site by Contractor(s), and notify ENGINEER of their availability for examination.
2) Advise ENGINEER and Contractor(s) or its superintendent immediately of the commencement of any work requiring a Shop Drawing or sample submission, if the submission has not been approved by ENGINEER.
e. Review of Work, Rejection of Defective Work, Inspections and Tests:
1) Conduct on-site observations of the work in progress to assist ENGINEER in determining if the work is proceeding in accordance with the Contract Documents and that completed work will conform to the Contract Documents.
2) Report to ENGINEER whenever he/she believes that any work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or does not meet the requirements of any inspections, tests or approval required to be made or has been damaged prior to final payment; and advise ENGINEER when he believes work should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
3) Verify that tests, equipment and system(s) startup(s) and operating and maintenance inspections are conducted as required by the Contract Documents and in presence of the required personnel, and that Contractor(s) maintains adequate records thereof; observe, record and report to ENGINEER appropriate details relative to the test procedures and startup(s).
4) Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the outcome of these inspections and report to ENGINEER.
f. Interpretation of Contract Documents: Transmit to Contractor(s) ENGINEER's clarifications and interpretations of the Contract Documents.
g. Modifications: Consider and evaluate Contractor(s)' suggestions for modifications in Drawings or Specifications and report them with recommendations to ENGINEER.
h. Records:
1) Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and samples submissions, reproductions of original Contract Documents including all Addenda, change orders, field orders, additional Drawings issued subsequent to the execution of the contract(s), ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, and other Project related documents.
2) Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions, list of visiting officials and representatives of manufacturers, fabricators, suppliers and distributors, daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures. Send copies to ENGINEER.

3) Record names, addresses and telephone numbers of all Contractors, subcontractors and major suppliers of materials and equipment.
i. Reports:
1) Furnish ENGINEER periodic reports as required of progress of the work and Contractor(s)' compliance with the approved progress schedule and schedule of Shop Drawing submissions.
2) Consult with ENGINEER in advance of scheduled major tests, inspections or start of important phases of the work.
3) Report immediately to ENGINEER upon the occurrence of any accident.
j. Payment Requisitions: Review applications for payment with Contractor(s) for compliance with the established procedure for their submission and forward them with recommendations to ENGINEER, noting particularly their relation to the schedule of values, work completed and materials and equipment delivered at the site but not incorporated in the work.
k. 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(s) are applicable to the items actually installed; and deliver this material to ENGINEER for its review and forwarding to OWNER prior to final acceptance of the work.
l. Completion:
1) Before ENGINEER issues a Certificate of Substantial Completion, submit to Contractor(s) a list of observed items requiring completion or correction.
2) Conduct final inspection in the company of ENGINEER, OWNER and Contractor(s) and prepare a final list of items to be completed or corrected.
3) Verify that all items on final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance.
3. Limitations of Authority: Resident Project Representative:
a. Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
b. Shall not exceed limitations on ENGINEER's authority as set forth in the Contract Documents.
c. Shall not undertake any of the responsibilities of Contractor(s), subcontractor(s) or Contractor(s)' superintendent, or expedite the work.
d. Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents.
e. Shall not advise on or issue directions as to safety precautions and programs in connection with the work.
f. Shall not participate in specialized field or laboratory tests.

SC-10.05.B. Notice of Claim

Add the following two sentences to the end of Paragraph GC-10.05.B:

The parties recognize that the Engineer is an employee of the Owner and as such may also prepare the Owner's notice of Claim envisioned in this paragraph. This fact shall not otherwise affect the process, responsibilities of the Engineer or the remedies available to the parties as set forth elsewhere in GC-10.05.

SC-11.02 Allowances

"Delete GC-11.02 in its entirety. There are no Allowances included in the Work of this Project."

SC-11.03 Unit Price Work

Delete Paragraph GC-11.03.D.1 in its entirety and insert the following in its place:

1. the Bid price of a particular item of Unit Price Work amounts to 10 percent or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 25 percent from the estimated quantity of such item indicated in the Agreement; and

SC-13.03 Tests and Inspections

SC-13.03.F. Add the following sentence to the end of GC-13.03.F: "For the purpose of this paragraph, the words 'timely notice' shall be construed as to mean not less than 48 hours prior to the event of the work being covered."
SC-13.04.E. Add the following paragraph after GC-13.04.D.:
E. Paragraphs B, C, and D, above shall apply only to the situation where work that has been covered by mutual agreement is subsequently determined to require uncovering for further observation.

SC-14 Payment to Contractor and Completion

SC-14.02.A.1: Modify the beginning of the first sentence of GC-14.02.A.1 to read as follows: "At least 10 days before the date established in the Agreement...." Delete the second sentence of GC-14.02.A.1.
SC-14.02.A.2: Delete Paragraph GC-14.A.2 in its entirety and substitute the following:
2. Beginning with the second Application for Payment, each Application shall include a lien release or other waiver acceptable to the Owner signed by the appropriate officer of each Subcontractor or Supplier that has provided labor, equipment or material to the Project during the period applicable to the previous Application for Payment.
SC-14.02.C.1 Modify the beginning of the first sentence of GC-14.02.C.1 to read as follows: "Twenty days after presentation of the Application for Payment...."
SC-14.07.A.3 Delete paragraph GC-14.07.A.3 in its entirety.

SC-15.04 Contractor May Stop Work or Terminate

Add the following paragraph after GC-15.04.B:
C. The parties recognize that the Engineer is an employee of the Owner and as such will be reviewing and recommending Applications for Payment by the Owner. Therefore, the Owner shall have no less than 60 days after the receipt of an Application for Payment by the Engineer to pay any amount finally determined to be due before the Contractor may invoke the actions contemplated in GC-15.04.

SC-16 Dispute Resolution

SC-16.01.C Delete GC-16.01.C in its entirety and insert the following in its place:
C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
1. gives to the other party written notice of intent to submit the Claim to a court of competent jurisdiction, or
2. agrees with the other party to submit the Claim to another dispute resolution process.

SC-16.01.D Add the following new paragraph immediately after Paragraph SC-16.01.C.
D. Notwithstanding any applicable statute of limitations, a party giving notice under Paragraph SC-16.01.C.1 shall commence an action on the Claim within one year of giving such notice. Failure to do so shall result in the Claim being time-barred and Engineer's action or denial shall become final and binding.

SC-17.01 Giving Notice

Delete GC-17.01.A.1 in its entirety and insert the following in its place:
1. intended for Owner: delivered in person to the individual named in the Agreement as Engineer; if intended for Contractor: given in person to the individual named in the Agreement as Agent for Service or Process.
Delete GC-17.01.A.2 in its entirety and insert the following in its place:
2. delivered at or sent by registered or certified mail, postage prepaid, to the "Address for Giving Notices" listed in the Agreement.

SC-17.07 Fill on Private Land

Insert GC-17.07 after GC-17.06 as follows:
17.07 Fill on Private Land
A. The Contractor shall not deposit any matter on private land for the purpose of fill without written permission of the land owner.

SC-17.08 Operation of Existing Facilities

Insert GC-17.08 after GC-17.07 as follows:
17.08 Operation of Existing Facilities
A. No valve, hydrant or other facility of the Portland Water District may be operated by the CONTRACTOR or his agents. The OWNER will, upon reasonable request of the CONTRACTOR, furnish men and equipment for such activity at no additional cost to the CONTRACTOR.

SC-17.09 Noise Control

Insert GC-17.09 after GC-17.08 as follows:
17.09 Noise Control
A. The project area is residential in nature. The CONTRACTOR shall provide adequate exhaust silencers on all equipment and shall generally endeavor to minimize noise throughout the term of construction. This shall be in addition to any

applicable ordinance or regulation pertaining to noise.

SC-17.10 Vehicle Idling Policy

Insert GC-17.10 after GC-17.09 as follows:
17.09 Vehicle Idling Policy
A. Purpose: Air pollution is a major public health concern in Portland Water District's Service Area. Air pollution can cause or aggravate lung illnesses as well as impose significant economic costs and negative impacts on our quality of life. Exhaust from both on- and off-road vehicles is a source of carbon monoxide, particulate matter, toxic air contaminants, and greenhouse gases. The Portland Water District can play an important role in improving air quality by limiting the amount of time the District vehicles are allowed to idle. As an environmental leader in the water and wastewater fields the District has the responsibility to be a leader by the adoption of effective policies to improve air quality. Under this policy, limitations and guidelines on engine idling are established by the District to reduce the idling of District and Contractor vehicles.

B. Definitions:
1. "Driver" means any person who drives, operates, or is in actual physical control of a vehicle.
2. "Emergency" means a sudden, urgent, usually unforeseen, occurrence.
3. "Equipment Operator" means any person who is in actual physical control of a piece of off-road equipment.
4. "Idling" means the engine is running while the vehicle is stationary or the piece of off-road equipment is not performing work.
5. "Traffic Control Device" means any sign, signal, marking or device placed or erected for the purpose of regulating, warning, or guiding traffic.
6. "Off-road Equipment" means all non-road equipment such as bulldozers, loaders, backhoes, compressors, etc.
7. "Vehicle" means any on-road, self-propelled vehicle that is required to be registered and have a license plate by the Department of Motor Vehicles.

C. Scope: This policy applies to all District and Contractor vehicles regardless of gross vehicle weight rating, all heavy-duty vehicles regardless of the fuel being used, all off-road diesel equipment regardless of horsepower rating, and all off-road equipment regardless of fuel being used, except as provided as specific exceptions stated in the policy.

D. Policy:
1. The driver of a vehicle shall turn off the engine upon stopping at a destination and shall not cause or allow an engine to idle at any location for:
a. More than ten consecutive minutes or
b. A period or periods totaling more than ten minutes in any one hour period.
2. An equipment operator of an off-road piece of equipment shall not cause or allow an engine to idle at any location for:
a. More than ten consecutive minutes or
b. A period or periods totaling more than ten minutes in any one hour period
3. This idling policy does not apply to a vehicle or a piece of equipment for the period or periods during which:
a. idling is necessary while stopped:
1) and the vehicle is being used for a traffic control device (Using strobe lights, light-bars, etc.) to protect employees while working in the street from traffic.
2) for traffic conditions over which the driver has no control, included but not limited to: stopped in a line of traffic, at a railroad crossing, etc.
3) at the direction of a law enforcement officer
b. idling is necessary to determine that the vehicle and / or the off-road equipment is in safe operating condition and equipped as required by all provisions of the law, and that all equipment is in good working order, either as part of the daily vehicle inspection, or as otherwise needed.
c. idling is necessary for the testing, servicing, repairing, and diagnostic purposes.
d. idling is necessary, for a period of 3 minutes or as recommended by the manufacturer, to cool down a turbo- charged vehicle before turning off the vehicle.
e. idling is necessary to accomplish work for which the vehicle / equipment was designed, other than transporting goods, for example: operating a lift, crane, pump, drill, hoist, or other auxiliary equipment other than a heater or air conditioner.
f. idling is necessary to operate defrosters, heaters, air conditioners, or other equipment to prevent a safety hazard such as melting ice on the windshield, but not solely for the comfort of the driver or passengers for a period not to exceed twenty minutes.
g. idling is necessary solely to recharge a battery or other energy storage unit of a hybrid electric vehicle / equipment.

h. idling is permitted when vehicles are occupied by personnel and being actively used as a work station, i.e. TV truck, using computers, etc.
i. idling is permitted to provide a habitable environment during breaks during extreme weather conditions, hot or cold (above 80 degrees F or below 32 degrees F)

END OF SECTION

DWSRF SUPPLEMENTAL GENERAL CONDITONS

The provisions of the Drinking Water State Revolving Loan Fund (DWSRF) Supplemental General Conditions as described below change, amend, or supplement the General Conditions an Supplementary Conditions on the preceding pages and shall supersede any conflicting provisions of the Contract. All provisions of the General Conditions, which are not changes, amended, or supplemented, remain in full force.

Contract Security

The Contractor shall within ten (10) days after receipt of the Notice of Award furnish the Owner with a performance bond in penal sum equal to the amount of the contract price, conditioned upon performance by the Contractor of all undertakings, covenants, terms, conditions and agreements of the contract documents; and a payment bod in penal sum equal to the amount of the contract price conditioned upon the prompt payment by the Contractor to all persons supplying labor and materials in the prosecution of the work provided by the contract documents. Such bonds shall be executed by the Contractor and a corporate bonding company licensed to transact such business in the State of Maine. The expense of these bonds shall be borne by the Contractor, If at any time a surety on any such bond is declared a bankrupt or loses its right to do business in the State of Maine, the Contractor shall within ten (10) days after notice from the Owner to do so, substitute an acceptable bond (or bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the Owner. The premiums on such bond shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable bond to the Owner.

Contractor's and Subcontractor's Insurance

The Contractor shall not commence work under this contract until he has obtained all the insurance required hereunder and such insurance has been approved by the Owner, or shall Contractor allow any Subcontractor to commence work on his subcontract until all similar insurance required of the Subcontractor has been so obtained and approved. Approval of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.

Operations under the Contract Documents, whether such operations be by himself or by any Subcontractor under him, requires insurance to be written with a limit of liability of no less than $1,000,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than $1,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than $500,000 for all property damage sustained by any one person in any one accident, and a limit of liability of not les than $500,000 aggregate for any such damages sustained by two or more persons in any one accident.

The Contractor shall acquire and maintain, if applicable, Fire and Extended Coverage insurance upon the Project to the full insurable value thereof for the benefit of the Owner, the Contractor, and Subcontractor as their interest may appear. This provision shall in no way release the Contractor or Contractor's surety from obligations under the Contract Documents to fully complete the Project.

The Contractor shall procure and maintain, at his expense, during the Contract Time, in accordance with the provisions of the laws of the State of Maine, Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees a t the site of the Project and in case any work is sublet, the Contractor shall require such Subcontractor similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous work under this contract at the site of the Project is not protected under

Workmen's Compensation statute, the Contractor shall provide adequate and suitable insurance for the protection of his employees not otherwise protected.

Time of Completion and Liquidated Damages

The Bid Proposal and the Contract Agreement must contain a paragraph specifying the time of completion stated as a number of calendar days following execution of the contract, and , the dollar amount of liquidated damages to be paid to the Owner for each calendar day beyond the specified completion period that he work remains uncompleted.

Bid Protests

All protests arising from the Owner's procurement practices must be submitted to the Owner as soon as practical. The Owner will investigate the basis for the protest, seek the advice of legal counsel, document all meetings and actions, and attempt to resolve the protest promptly and equitably. In the event that the protest is not settled, an appear may be filed with the Department of Human Services (DHS).

Contractor's Guaranty

The Contractor shall guarantee all materials and equipment furnished and work performed for a period of one (1) year from the date of Substantial Completion. The Contractor warrants and guarantees for a period of one (1) year from the date of substantial completion of the system that the completed system is free from all defects due to faulty materials or workmanship and the Contractor shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments, or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The performance bond shall remain in full force and effect throughout the guarantee period.

Inspection

Representatives of the Owner and the Department of Human Services (DHS) shall have access to the work wherever it is in preparation or progress an the Contractor shall provide proper facilities for such access and inspection.

Claims or Disputes

All claims or disputes between the Owner and the Contractor may be settled informally using the DHS as a mediator or formally in a court of law. All resolved disputes and claims must be submitted to the DHS by change order for approval before payment.

All claims, disputes, and other matters in question arising out of, or relating to, the Contract Documents or a breach thereof, shall be settled by litigation in a court of competent jurisdiction.

Posting Documents

The following documents must be posted and maintained by the CONTRACTOR at such place or places on the PROJECT site where they can be easily seen by employees. The posters may be obtained, free of charge, from "Business Answers" 1-800-872-3838.

"Notice to Labor Union or Other Organizations of Workers" (Exhibit 2)
"Equal Employment Opportunity is the Law" poster
"Job Safety and Health Protection" poster
"Fair Labor Standards Act" poster

"Employee Polygraph Protection Act" poster
"Family and Medical Leave Act" poster (applicable to employers of 50 or more employees)
"Notice Relative to the Regulation of Employment" (State Poster)
"Minimum Wage" (State Poster)
"Whistleblowers' Protection Act" (State Poster)
"Sexual Harassment Law" (State Poster)
"Workers Compensation" (State Poster)
"Maine Employment Security Law" (applicable to employers who must pay unemployment tax). Available from the Unemployment Compensation Division of the Maine Dept. of Labor.
"Notice to All Employees" (http://www.dol.gov/whd/regs/compliance/posters/fedprojc.pdf)
Davis-Bacon Wage Rates

Payment of Employees

Minimum Wages

All mechanics and labors employed or working upon the construction site work of the project, will be paid the full amounts due at time of payment computed at wage rates not less than State Minimum Wage regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Overtime Payments

An employer is obligate to make proper wage payments under the Fair Labor Standards Act and the Contract Work Hours Standards Act, for hours worked in excess of 40 hours in a work week. An employee must receive compensation at a rate not less than one and one-half times the regular rate of pay (basic hourly rate) for all hours worked in excess of 40 hours per week.

Davis-Bacon Wages

Davis-Bacon Wage Rates apply to projects with DWSRF funding. For Davis-Bacon wage determination purposes, work on most projects will be considered "heavy construction." Some projects may also include work under the "building construction" category. The wage decision that is current as of ten (10) days prior to the bid opening will be applied to DWSRF funded projects. The wage decision applicable to this project can be found within these project documents. It is the responsibility of the bidder to verify the applicable wage decision. For job classifications not listed in the applicable wage decision a project-specific wage determination request must be filed with the federal Department of labor. The Drinking Water Program will provide the wage determination request application form. The Drinking Water Program must review and sign the wage determination request application prior to its submittal. Wage determination request submittals are expected to be responded to within 30 days; however, some responses have taken longer than this. For each job classification needed for this project not listed in the applicable wage decision the successful bidder is encouraged to identify these job classifications and notify all parties early on in the project such as during the preconstruction meeting. The contractor bears all responsibility for reimbursing workers at Davis-Bacon rates. This includes for job classifications not listed in the wage decision that require wage determination requests.

Wage Record of Contractor

The Contractor and each subcontractor shall keep an accurate record showing the names, social security number, and occupation of each and all laborers, workmen, and mechanics employed by them in connection with the Project showing the hours worked, the title of the job, the hourly rate and the actual wages paid to each of them. A copy of such record shall be kept at the job site and shall be open at all reasonable hours to the inspection of the Bureau of Labor Standards, the Owner, and the Department of Human Services. A second copy shall be submitted to the Engineer each week work is performed on the contract.

Retention of Payroll Records

Payroll records, including original field notes and back up material will be maintained during the course of the work by the Contractor, including payroll of each Subcontractor for a period of three years after the completion of the project.

Violations of Labor Standards

In the event of a violation of the overtime payments clause the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of the clause in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages.

In the event of any violation by the Contractor or subcontractor of the labor standards provisions of their contract, the Owner may, after notice to the Contractor, suspend further payments until such violations have ceased.

Payment to Contractor

At least ten (10) days before each progress payment falls due (but not more often than once a month), the Contractor will submit to the Engineer a partial payment estimate filled out and signed by the Contractor covering the work during the period covered by the partial payment estimate and supported by such data as the Engineer may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the Owner, as will establish the Owner's title to the material and equipment and protect the Owner's interest therein, including applicable insurance. The Engineer will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing approval of payment, and present the partial payment estimate to the Owner, or return the partial payment estimate to the Contractor indicating in writing the reasons for refusing to approve payment. In the latter case, the Contractor may make the necessary corrections and resubmit the partial payment estimate. The Owner will, within ten (10) days of presentation of an approved partial payment estimate, pay the Contractor a progress payment on the basis of the approved partial payment estimate less the retainage. The retainage shall be an amount equal to ten percent (10%) of said estimate until fifty percent (50%) of the work has been completed. At fifty percent (50%) completion, further partial payments shall be made in full to the Contractor and no additional amounts retained unless the Engineer certifies that the job is not proceeding satisfactorily, but amounts previously retained shall not be paid to the Contractor. At fifty percent (50%) completion or any time thereafter when the progress of the work is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than ten percent (10%) of the value of the work completed. Upon substantial completion of the work the Owner shall retain an amount sufficient to cover the estimated cost of the work still to be completed.

The Contractor will indemnify and save the Owner harmless from all claims growing out of the lawful demand of subcontractors, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, tools, and all supplies incurred in the furtherance of the performance of the Work. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. Thais may be required on a monthly basis. If the Contractor fails to do so the Owner may, after having notified the Contractor, either pay unpaid bills or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed in accordance with the terms of the Contract Documents, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor, the Contractor's surety or any third party. In paying any unpaid bills of the Contractor, any payment so made

by the Owner shall be considered as a payment made under the Contract Documents by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments made in good faith.

Changes in the Work

The Owner may at any time, as the need arises, order changes within the scope of the Work without invalidating the Agreement. IF such changes increase or decrease the amount due under the contract documents, or the time required for performance of the work, an equitable adjustment shall be authorized by change order.

The Engineer, also, may at any time, by issuing a field order, make changes in the details of the work. The Contractor shall proceed with the performance of any changes in the work so ordered by the Engineer unless the Contractor believes that such field order entitles the Contractor to a change in contract price or time, or both, in which event the Contractor shall give the Engineer written notice thereof within seven (7) days after receipt of the ordered change. Thereafter the Contractor shall document the basis for the change in contract price or time within thirty (30) days. The Contractor shall not execute such changes pending the receipt of an executed change order or further instructions from the Owner.

Changes in Contract Price

The contract price may be changed only by a change order. The value of any work covered by a change order or of any claim for increase or decrease in the contract price shall be determined by one or more of the following methods in the order of procedure listed below:

a. Unit prices previously approved
b. An agreed lump sum
c. Time and materials

For all change order work performed under c, a fee for overhead and profit will be allowed over and above the "actual cost" of the work. For work performed by a subcontractor, this fee shall not exceed fifteen percent (15%) for the subcontractor and five percent (5%) for the general contractor. The general contractor's five percent (5%) is calculated on the subcontractor's actual cost before the fee is added. The total fee on "actual work" shall not exceed twenty percent (20%). For work performed by the general contractor, this fee shall not exceed fifteen percent (15%).

The "actual cost "of work includes the reasonable cost to the Contractor of the following:

a. Materials used as part of the work;
b. Common and skilled labor and foreman only;
c. Equipment rental for the period employed directly on the work at rates not exceeding the monthly rate contained in the current "Rental Rate Blue Book for Construction Equipment (published by the Equipment Guidebook Company);
d. Additional insurance if required, to cover public safety for injury to persons and property;
e. Workmen's compensation insurance, federal social security and any other costs associated with payrolls and required by law.

The "actual cost" of work does not include the following:

a. Purchase or rental of small tools and buildings;
b. Contractor's supervision of subcontractor (these cost are part of the fee outlined above);
c. Use of capital or premium on the bond unless the extra work includes an extension of time approved and authorized by the Owner.
d. Overhead and profit

Access to records

The Owner, DHS, Maine Municipal Bond Bank and the Comptroller General of the United States, or any of their authorized representatives, shall have the right of access to any pertinent books, documents, papers, or other records of Contractors which are pertinent to this project in order to make audits, examinations, excerpts, and transcripts.

Expiration of right of access: The right of access shall last as long as the records are retained. The minimum retention period is three years.

Project Sign

The CONTRACTOR shall provide and erect a PROJECT sign as detailed and specified. The location of the sign shall be as directed by the ENGINEER. No other CONTRACTOR, SUBCONTRACTOR or material signs will be permitted on the sign. The CONTRACTOR shall maintain and keep the PROJECT sign in good condition until the work is completed when the sign will be removed. All other signs to be erected on the site shall be approved by the ENGINEER. Provide adequate supports for sign as site conditions may require and keep sign a proper distance above prevailing grade to permit public viewing.

MBE/WBE
ATTACHMENT A

THE MBE/WBE GOAL HAVING BEEN MET, the following information must be submitted:

PUBLIC WATER SYSTEM: _____ STATE: _____

SRF PROJECT NO.: _____ CONTRACT NO.: _____

1. Total dollar amount of the contract: $_____
2. Total dollar amount of the MBE participation: $_____
3. Percentage of MBE participation: %_____
4. Total dollar amount of WBE participation: $_____
5. Percentage of WBE participation: %_____
6. List of MBE/WBE subcontractors (fill out for each of MBE/WBE used):

List of MBE/WBE firms to be used:

Company Name	Contact Person	Phone Number	Type of Work	Amount

This attachment must be signed by an authorized representative of the bidder.

Signature _____ Date _____

Name: _____

Title: _____

Address: _____

Phone: _____

MBE/WBE
ATTACHMENT B
(page 1 of 2)

THE MBE/WBE GOAL NOT HAVING BEEN MET, the following information must be submitted:

PUBLIC WATER SYSTEM: _____ STATE: _____

SRF PROJECT NO.: _____ CONTRACT NO.: _____

A. MBE/WBE Participation:

1. Total dollar amount of the contract: $_____
2. Total dollar amount of the MBE participation: $_____
3. Percentage of MBE participation: %_____
4. Total dollar amount of WBE participation: $_____
5. Percentage of WBE participation: %_____

B. MBE/WBE Solicitation:
List each minority and women-owned firm (whether or not on the Loanee's Project List) to which a letter of solicitation was sent. It is suggested that correspondence be sent by certified or registered mail since the burden or proof of positive efforts to utilize MBE/WBE firms rests with the bidder.

A copy of each solicitation letter MUST be attached.

Minority Owned Firm Contacted	Women Owned Firm Contacted
1.	1.
2.	2.
3.	3.
4.	4.
5	5.
6.	6.
7.	7.
8.	8
9.	9.
10.	10.

MBE/WBE
ATTACHMENT B
(page 2 of 2)

C. List all MBE/WBE firms to be used:

Company Name	Contact Person	Phone Number	Type of Work	Amount

D. List all MBE/WBE firms from which a bid or quotation was received which is not listed in Section C above and the reason the firm was not selected:

List of MBE/WBE firms not to be used:

Company Name	Contact Person	Phone Number	Reason Not Selected

This attachment must be signed by an authorized representative of the bidder.

Signature _____ Date _____

Name: _____

Title: _____

Address: _____

Phone: _____

ATTACHMENT C
UTILIZATION OF WBE/MBE FIRMS

THE FOLLOWING INFORMATION MUST BE SUBMITTED WITH REIMBURSEMENT REQUESTS THAT INCLUDE INVOICED AMOUNTS FROM A QUALIFYING WBE OR MBE PARTICIPANT:

PUBLIC WATER SYSTEM: _____

SRF PROJECT NO.: _____ CONTRACT NO.: _____

The accompanying Reimbursement Request includes the following WBE/MBE participation:

WBE/MBE firm to be paid	WBE	MBE	Amount to be paid this request

Payment Request No:_____Period covered by the request _____

This attachment must be signed by an authorized representative of the contractor.

Signature _____ Date _____

Name: _____

Title: _____

Address: _____

Phone: _____

Notice to Labor Union or Other Organization of Workers

Nondiscrimination in Employment

To: _____
(Name of Union or organization of workers)

The undersigned currently holds contract(s) with _____
(Name of Applicant)
involving funds or credit of the U.S. Government of (a) subcontract(s) with a prime CONTRACTOR holding such contract(s).

You are advised that under the provisions of the above contact(s) or subcontract(s) and in accordance with Executive Order 11246, dates September 24, 1965, the undersigned is obliged not to discriminate against any employee or applicant for employment because of race, color, creed, or national origin. This obligation not to discriminate in employment includes, but is not limited to the following:

HIRING, PLACEMENT, UPGRADING, TRANSFER, OR DEMOTION
RECRUITMENT, ADVERTISING, OR SOLICITATION FOR
EMPLOYMENT TRAINING DURING EMPLOYMENT, RATES OF
PAY OR OTHER FORMS OF COMPENSATION, SELECTION FOR TRAINING
INCLUDING APPRENTICESHIP, LAYOFF, OR TERMINATION.

This notice is furnished to you pursuant to the provisions of the above contract(s) or subcontract(s) and Executive Order 11246.

COPIES OF THIS NOTICE WILL BE POSTED BY THE UNDERSIGNED IN CONSPICUOUS PLACES AVAILABLE TO EMPLOYEES OR APPLICANT FOR EMPLOYMENT.

_____

_____
_____
/s/_____
(Contractor or Subcontractor)

_____
(Date)

General Decision Number: ME140018 01/03/2014 ME18

Superseded General Decision Number: ME20130018

State: Maine

Construction Type: Heavy

County: Cumberland County in Maine.

HEAVY CONSTRUCTION PROJECTS including Water and Sewer Lines

Modification Number	Publication Date
0	01/03/2014

ELEC0567-005 09/01/2013

	Rates	Fringes
ELECTRICIAN	$ 30.53	13.77

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* LABO0976-004 12/01/2013

	Rates	Fringes
LABORER (CONCRETE WORKER)	$ 19.71	16.42

SUME2011-013 03/16/2011

	Rates	Fringes
CARPENTER, Includes Form Work	$ 18.00	1.94
CONCRETE FINISHER	$ 17.29	2.51
IRONWORKER, Reinforcing	$ 20.00	0.00
LABORER: Asphalt Raker	$ 16.93	1.91
LABORER: Common or General	$ 13.56	1.99
LABORER: Landscape	$ 15.00	0.58
LABORER: Pipelayer	$ 14.42	2.38
LABORER: Flagger	$ 12.43	0.95
LABORER: Wheelman	$ 18.74	2.86
OPERATOR: Asphalt Paver	$ 18.16	2.30
OPERATOR: Asphalt Roller	$ 15.70	1.62
OPERATOR: Backhoe	$ 22.22	6.48
OPERATOR: Bulldozer	$ 20.43	6.13

OPERATOR: Crane.....$ 22.60 9.29

OPERATOR: Drill.....$ 17.09 3.79

OPERATOR: Excavator.....$ 19.88 5.06

OPERATOR: Loader.....$ 16.93 3.51

OPERATOR: Mechanic.....$ 24.35 6.66

OPERATOR: Roller.....$ 15.99 6.31

TRUCK DRIVER: Low Bed Truck.....$ 16.43 3.07

TRUCK DRIVER.....$ 14.67 2.04

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any

changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an

interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

01-21-2014

USE OF AMERICAN IRON AND STEEL

10 SEC. 436. (a)(1) None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C.16 300j–12) shall be used for a project for the construction, alteration, maintenance, or repair of a public water system or treatment works unless all of the iron and steel products used in the project are produced in the United States. (2) In this section, the term ‘‘iron and steel products’’ means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.
(b) Subsection (a) shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency (in this section referred to as the ‘‘Administrator’’) finds that—(1) applying subsection (a) would be inconsistent with the public interest; (2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent. (c) If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public on an informal basis a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the

request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency. (d) This section shall be applied in a manner consistent with United States obligations under international agreements. (e) The Administrator may retain up to 0.25 percent of the funds appropriated in this Act for the Clean and Drinking Water State Revolving Funds for carrying out the provisions described in subsection (a)(1) for management and oversight of the requirements of this section. (f) This section does not apply with respect to a project if a State agency approves the engineering plans and specifications for the project, in that agency's capacity to approve such plans and specifications prior to a project requesting bids, prior to the date of the enactment of this Act.

END OF SECTION

SECTION 00941 – CHANGE ORDER NO. _____

Date of Issuance: _____ Effective Date: _____

Project:	Owner:	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.:

The Contract Documents are modified as follows upon execution of this Change Order:

Description:

Attachments: (List documents supporting change):

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: $ _____	Original Contract Times: ☐ Working days ☐ Calendar days Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] from previous approved Change Orders No._____ to No._____: $ _____	[Increase] [Decrease] from previous approved Change Orders No._____ to No._____: Substantial completion (days): _____ Ready for final payment (days): _____
Contract Price prior to this Change Order: $ _____	Contract Times prior to this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] of this Change Order: $	[Increase] [Decrease] of this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
Contract Price incorporating this Change Order: $ _____	Contract Times with all approved Change Orders: Substantial completion (days or date): _____ Ready for final payment (days or date): _____

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____	By: _____	By: _____
Engineer (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)
Date: _____	Date: _____	Date: _____

DIVISION 1 – GENERAL REQUIREMENTS

SECTION 01001 - DESCRIPTION OF WORK

PART 1: GENERAL

1.1 SCOPE:

A. The CONTRACTOR shall furnish and install water main and appurtenances in Washington Avenue and West Kidder Street, Portland, Maine as shown on the drawings and specified herein.

B. The CONTRACTOR shall perform leakage and pressure tests and disinfect the installed water main as specified herein.

1.2 DUTIES OF THE OWNER:

A. The OWNER will locate the terminal points of the work and will also locate any of its facilities lying in close proximity which would in any way be a hazard to the CONTRACTOR's operations.

B. The OWNER will operate any valves or hydrants which may be found desirable or necessary to be used for any purpose. The OWNER will perform work in coordination with the CONTRACTOR at the locations specified on the plans.

C. The OWNER will notify customers of all work involving temporary shutdown of service.

1.3 DUTIES OF THE CONTRACTOR:

A. The CONTRACTOR will familiarize himself with all obstructions which he can foresee, such as existing pipes, services, conduits, ducts, sewers or any other such obstructions which might interfere with the construction, and he agrees to make arrangements with the owners of such facilities so as to save the OWNER harmless from any damages thereto caused by his operations and to make whatever arrangements might be necessary to move or remove and replace these facilities so as to permit the construction, all at his own expense. The CONTRACTOR agrees that there will be no extras charged for this type of work, except by special agreement with the ENGINEER and upon written order from him.

B. The CONTRACTOR will make any changes which may be required, such as the removing or restoring of the property of others in the land through which this line will cross in right-of-way or otherwise. The CONTRACTOR will place all pipe, fittings and all attendant facilities to proper line and grade, as called for in the plans and specifications and to the satisfaction of the ENGINEER.

C. The CONTRACTOR must give the District at least 4 days notice prior to a shutdown in order to properly notify customers.

D. The CONTRACTOR will furnish all fuel, gasoline, oil, etc. for the operation of his equipment, all tools and equipment, and all labor and supervision necessary for the handling of material, for excavation, installation, backfilling and cleaning the site as required. He will dispose of excess spoil and restore the land surface to the original contour over the entire length of the project. Restoration shall be made to the satisfaction of the ENGINEER.

E. The CONTRACTOR will perform the pressure and leakage test and disinfection of the main as described herein in the presence of the ENGINEER or OWNER.

F. The CONTRACTOR shall install the water mains to supply the OWNER with a satisfactory, watertight pipeline, laid to proper line and grade in accordance with these contract documents, to the satisfaction of the OWNER. The CONTRACTOR shall leave the site in a condition, which is suitable to the OWNER, abutting landowners and any municipal or state authorities having jurisdiction over the areas involved.

G. The CONTRACTOR is required to have a valid excavator's license in the City of Portland and must obtain all necessary street opening permits and comply with all rules and regulations associated with the permits.

H. The CONTRACTOR shall install and maintain a temporary water system sufficient to maintain service to all customers during the water main replacement.

END OF SECTION

SECTION 01035 - CONTROL OF WORK

PART 1: GENERAL

1.1 PLANT

A. The Contractor shall furnish plant and equipment which will be efficient, appropriate and large enough to secure a satisfactory quality of work and a rate of progress which will insure the completion of the work within the time stipulated in the Proposal. If at any time such plant appears to the Owner to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, he may order the Contractor to increase the efficiency, change the character or increase the plant equipment, and the Contractor shall conform to such order. Failure of the Owner to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

1.2 PIPE LOCATIONS

A. Pipelines shall be located substantially as indicated on the Drawings, but the Owner reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons. Where fittings are noted on the Drawings, such notation is for the Contractor's convenience and does not relieve him from laying and jointing different or additional items where required.

1.3 CARE AND PROTECTION OF PROPERTY

A. The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in other manner acceptable to the Owner.

1.4 PROTECTION AND RELOCATION OF EXISTING STRUCTURES, TREES AND UTILITIES

A. The Contractor shall assume full responsibility for the protection of all trees, buildings, structures, and utilities, public or private, including poles, signs, services to buildings, buried utilities, gas pipes, water pipes, hydrants, sewers, drains, and electric and telephone cables, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the Contractor's operations shall be repaired by him at his expense.

B. Protection and temporary removal and replacement of existing utilities and structures as described in this Section shall be a part of the work under the Contract and all costs in connection therewith shall be included in the Prices in the Proposal.

1.5 CLEANUP

A. During the course of the work, the Contractor shall keep the site of his operations in as clean and neat a condition as is possible. He shall dispose of all residue resulting from the construction work and, at the conclusion of the work, he shall remove and haul away any surplus excavation, lumber, equipment, temporary structures, and any other refuse remaining from the construction operations, and shall leave the entire site of the work in a neat and orderly condition.

END OF SECTION

SECTION 01151 - MEASUREMENT AND PAYMENT

PART 1: GENERAL

1.1 METHOD OF MEASUREMENT AND BASIS OF PAYMENT:

A. All measurements for payments will be based on completed work performed in strict accordance with the drawings and specifications, and on the contract bidding and payment item schedules. All work completed under the contract will be measured by the PORTLAND WATER DISTRICT ("DISTRICT") according to the methods outlined below. In cases where the payment clause in the specifications relating to any unit or lump sum price stated in the contract requires that the said unit or lump sum price cover and be considered compensation for certain work or material essential to the item, this same item will not be measured or paid for under any other pay item which may appear elsewhere in the specifications.

1.2 Incidental Work

A. Incidental work items for which separate payment is not made include (but are not limited to) the following items:

1. Clearing, grubbing and stripping
2. Dewatering
3. Clean-up
4. Loaming and seeding
5. Restoration of property
6. Crossing other utilities
7. Fittings – crosses, tees, bends, sleeves, etc. shown on the drawings
8. Bonds, insurance, shop drawings, warranties and other submittals required by the contract documents
9. Repair and replacement of utilities damaged by construction activities and corresponding proper disposal of removed materials
10. Temporary construction and other facilities not to be permanently incorporated into the Work necessary for construction sequencing and maintenance of operations
11. Permits not otherwise paid for or provided by the Owner
12. Facilities for the storage of materials to be incorporated into the Work
13. Test pits to determine existing utility locations, soil conditions, and as required to complete the project.
14. Pavement markings
15. Removal of existing pavement, concrete, cobblestones and trolley tracks

PART 2: PAYMENT ITEMS:

2.1 ITEM NOS. 1, 2 and 3 – Ductile Iron Water Main

A. Method of Measurement: Linear feet as measured along the centerline of the pipe for the actual number of linear feet of pipe installed, including fittings.

B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for installation and maintenance of temporary water systems, excavating, shoring and bracing, dewatering, traffic control, pipe, fittings, laying and jointing, removal and disposal of existing piping and appurtenances, capping existing pipes that are not removed, bedding, backfilling, testing, aggregate subbase gravel and associated work as specified and shown on the Drawings.

C. Schedule of Payment: Installation – 85%; Testing – 15%

2.2 ITEM NO. 4 – Hydrant Assembly

A. Method of Measurement: Actual number installed

B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, shoring and bracing, dewatering, hydrant tee, 6-inch hydrant control valve, valve box, 6-inch ductile iron pipe, hydrant, traffic control, thrust blocks, backfill, testing, aggregate subbase gravel and associated work as specified and shown on Drawings.

C. Schedule of Payment: Installation – 85%; Testing – 15%

2.3 ITEM NOS. 5, 6, 7,8 and 9 – Gate Valves

A. Method of Measurement: Actual number installed

B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, shoring and bracing, dewatering, valve, sleeves (where required) valve box, traffic control, backfill, testing, aggregate subbase gravel and associated work as specified and shown on Drawings.

C. Schedule of Payment: Installation – 85%, Testing – 15%

2.4 ITEM NO. 10 – Air Release Valve

A. Method of Measurement: Actual number installed

B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, shoring and bracing, dewatering, corporation, angle valve, fittings, operating rod, service box, valve box, installation, traffic control, backfill, testing, aggregate subbase gravel and associated work as specified and shown on the Drawings.

C. Schedule of Payment: Installation – 85%; Testing – 15%

2.5 ITEM NO. 11 – 2-inch Blow-Off Assembly

A Method of Measurement: Actual number installed

B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, shoring and bracing, dewatering, fittings, trust block, backfill, testing, cleanup and associated work as specified and shown on Drawings.

C. Schedule of Payment: Installation – 85%; Testing – 15%

2.6 ITEM NOS. 12, 13 and 14 – Copper Services

A. Method of Measurement: Actual number installed

B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, gravel, shoring and bracing, dewatering, pipe, corporation, fittings, connection to existing service, service box, rod, curb stop, traffic control, backfilling, testing aggregate subbase gravel and associated work as specified and shown on Drawings.

C. Schedule of Payment: Installation – 85%; Testing – 15%

2.7 ITEM NO. 15 – Gravel Borrow

A. Method of Measurement: Cubic yards as measured in place for the actual number of yards of gravel borrow installed.

B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, installation and compaction of gravel borrow as directed by the ENGINEER to replace unsuitable excavated material.

C. Schedule of Payment: Installation – 100%

2.8 ITEM NO. 16 – Rock Excavation

A. Method of Measurement: Cubic yard as measured in place prior to removal for the actual number of cubic yards excavated within the pay limits shown on the Drawings and directed by the ENGINEER. Boulders less then two cubic yards in volume will not b e measured for payment.

B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, shoring and bracing, dewatering, excavation, select backfill replacement, erosion control, cleanup and associated work as specified an shown on the Drawings.

C. Schedule of Payment: Excavation – 100%

2.9 ITEM NO. 17 – Unsuitable Material Excavated Below Pipe Grade

A. Method of Measurement: Cubic yard as measured in place prior to removal for the actual number of cubic yards excavated within the limits shown on the Drawings and directed by the ENGINEER.

B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for removing unsuitable material excavated below trench grade and replacing with granular bedding material as directed by the ENGINEER.

C. Schedule of Payment: Excavation - 100%

2.10 ITEM NO. 18 and 19 – Flagger and Uniformed Police Officer

A. Method of Measurement: The accepted quantity of flagger and uniformed police officer time will be the number of hours the designated station is occupied. The number of hours authorized for payment will be measured to the nearest ¼ hour.

B. Basis of Payment: The accepted quantities of flagger hours and uniformed police officer (incl. cruiser) hours will be paid for at the contract unit price for each station occupied, with no additional payment for overtime or transportation. The contract unit price shall be full compensation for hiring, transporting, equipping, supervising, and the payment of flaggers, uniformed police officers and all overhead and incidentals necessary to complete the work.

C. Schedule of Payment: Completion of work – 100%

2.11 ITEM NOS. 20 and 21 – Foreman & Laborer

A. Method of Measurement: Total man-hours.

B. Basis of Payment: Unit price per man-hour as stated in the Bid. Payment shall include wages, benefits and overhead and profit for personnel for the purpose of performing extra work at the request of P.W.D.

C. Schedule of Payment: Completion of work – 100%

2.12 ITEM NOS. 22, 23 and 24 – Excavator, Loader and Dump Truck

A. Method of Measurement: Total hours.

B. Basis of Payment: Unit price per hour as stated in the Bid. Payment shall include equipment and operator/driver, wages, benefits, fuel and overhead and profit for the purpose of performing extra work at the request of P.W.D.

C. Schedule of Payment: Completion of work – 100%

END OF SECTION

SECTION 01310 - SUBMITTALS

PART 1 - GENERAL

1.1 SUBMITTALS FOR OWNER'S APPROVAL

A. For all products to be incorporated into the Work submit to the OWNER for approval sufficient information in the form of shop drawings, product data and/or samples such that the OWNER can determine that the product is in compliance with the Technical Specifications and Drawings.

B. Submit two (2) copies of each submittal. One (1) copy will be returned to the CONTRACTOR. Each copy shall include a cover sheet which clearly identifies the product and corresponding specification section. Each cover sheet shall bear the CONTRACTOR's stamp and signature certifying that the submittal is in full compliance with the Contract Documents or that any deviations from the Contract Documents are clearly identified on a separate sheet(s) labeled "Deviations From Contract Documents" and attached to the cover sheet.

C. OWNER's Review: The OWNER shall review the submittals and indicate their status as:

1. APPROVED SUBJECT TO REQUIREMENTS OF THE CONTRACT DOCUMENTS
2. APPROVED AS NOTED, SUBJECT TO REQUIREMENTS OF THE CONTRACT DOCUMENTS
3. REVISE AS NOTED, RESUBMITAL REQUIRED.
4. NOT APPROVED

OWNER's review is only for general conformance with the design concept and general conformance with the information given in the Contract Documents. Corrections or comments made during the review do not relieve the CONTRACTOR from compliance with the requirements of the Contract Documents.

D. Re-submittals: Make re-submittals under procedures specified for submittals; identify changes made since previous submittal.

E. CONTRACTOR shall be responsible for the delays and or additional expenses that result from the CONTRACTOR's failure to submit a complete submittal and/or to identify portions of the submittal that does not conform to the specifications.

END OF SECTION

SECTION 01580 – PROJECT IDENTIFICATION AND SIGN

PART 1: GENERAL

1.1 DESCRIPTION:

A. Work included:
Sign shall be professionally lettered. Erect sign at the project site to identify the project and to indicate the applicable Federal and State Government Agencies that are participating in the development of the project.

PART 2: PRODUCTS

2.1 MATERIAL AND DESIGN:

A. Construct a sign of ¾-inch exterior grade, high density overlaid plywood or other material, approved by the Engineer, suitable for signs.

PART 3: EXECUTION

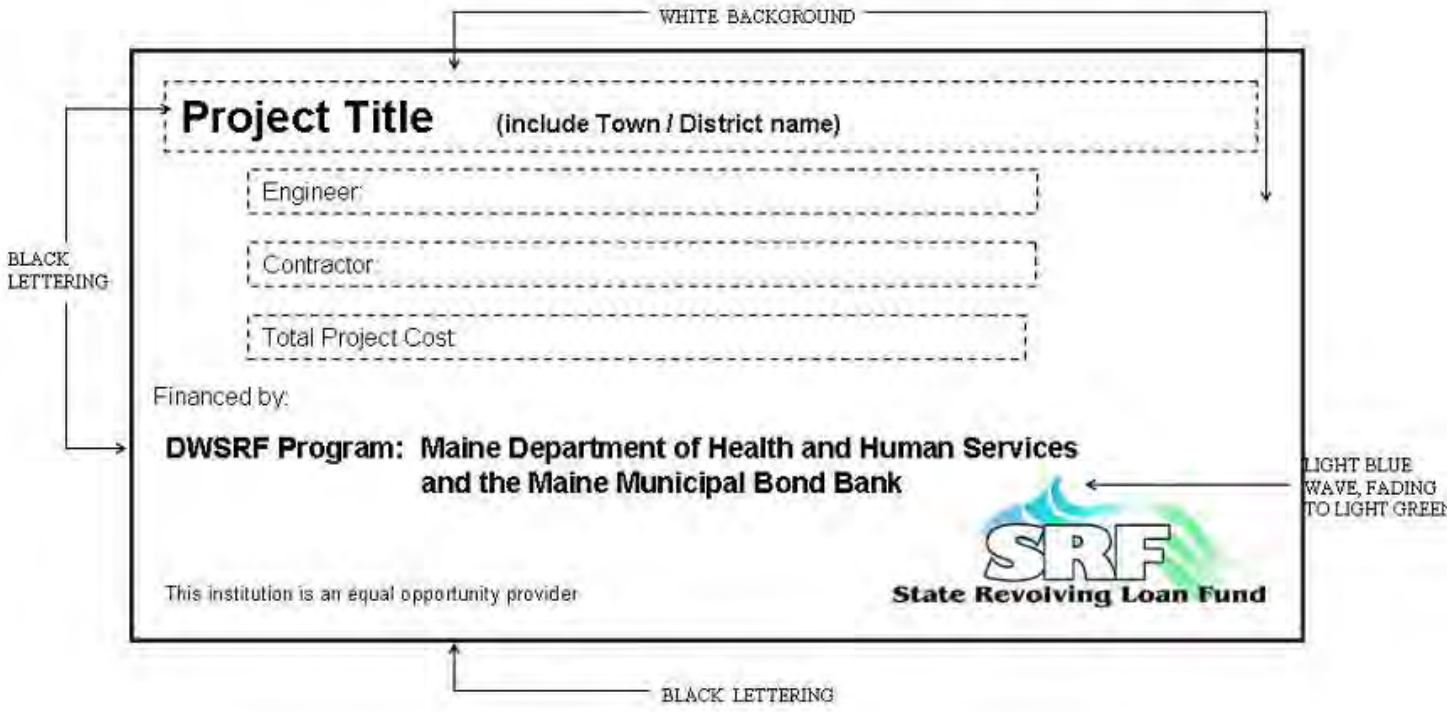
3.1 INSTALLATION:

A. Erect the sign in a prominent location as approved by the Engineer.

B. Construct the sign in accordance with the following sample drawing.

C. Remove the sign when the Work has been completed at no additional cost.

temporary construction sign for DWSRF projects



MINIMUM SIGN DIMENSIONS: 1200 x 2400 x 19 MM (4' x 8' x 3/4") EXTERIOR PLYWOOD (A-B GRADE)

MINIMUM LETTERING SIZE: 5 CM (2-INCHES)

SECTION 01710 - CLEANUP

PART 1: GENERAL

1.1 SCOPE:

A. The work covered by this section is to provide all cleanup over the entire project.

PART 2: PRODUCTS

2.1 METHOD:

A. The Contractor may choose any method he wishes for cleanup and shall assume all responsibility for the adequacy of the method and equipment employed.

PART 3: EXECUTION

3.1 CLEANING UP:

A. During the progress of the work, the construction areas shall be kept clean and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damages repaired so that the public and property owners will be inconvenienced as little as possible.

B. Contractor shall fill in all depressions and water pockets on public and private property caused by his operations; clean all drains, ditches and culverts which have been obstructed by his work; and, shall leave the site in a neat condition wherever his operations have disturbed existing conditions.

C. Contractor shall make restitution for any damage to trees, shrubbery or other structures or facilities owned by adjacent property owners.

D. Cleanup shall follow directly behind the progress of the project.

E. All excess material, rubbish or other type of mess shall be cleaned up and the site shall be left to the satisfaction of the right-of-way grantor, or any abutters, as well as to the satisfaction of any municipal or state authority which may be involved if in public right-of-way.

F. Any damage to or displacement of street or highway surfaces due to blasting or otherwise shall be either replaced satisfactorily by the Contractor or shall be paid for by him to the authority responsible for the street or highway

END OF SECTION

DIVISION 2 – SITE WORK

SECTION 02105 - CLEARING, GRUBBING AND RESTORATION

PART 1: GENERAL

1.1 SCOPE:

A. The CONTRACTOR shall do all clearing, grubbing, topsoil stripping, and restoration necessary for the construction of this project.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. Cleanup - Section 01710

B. Loam and Seeding - Section 02821

PART 2: PRODUCTS

2.1 MATERIALS:

A. Materials shall be at CONTRACTOR's option, except that stripped topsoil shall be stockpiled and replaced in approximately its original location and to its original depth.

PART 3: EXECUTION

3.1 CLEARING AND GRUBBING:

A. Before any excavation shall begin, the CONTRACTOR shall remove all underbrush, trees, stumps, or other obstructions within the work area, but shall not work on any private property without permission. The Contractor and Engineer shall agree upon the extent of clearing within the work area prior to the start of work. The Contractor shall not deviate from the agreed upon limits without the permission of the Engineer.

B. All limbs, stumps, etc., shall be disposed of off site by the CONTRACTOR and at his expense unless otherwise specified.

C. After the trees have been cut and stumps removed from wooded areas and in all field areas, existing topsoil and humus material shall be excavated and stockpiled by the CONTRACTOR. After pipelines have been completed, the topsoil and humus material shall be placed back over the disturbed areas and seeded in accordance with Section 02821.

D. If the CONTRACTOR fails to salvage and reuse existing topsoil and humus material, he shall furnish sufficient loam from off the project site to restore the disturbed areas to match the existing topsoil depth, at his own expense.

E. No excavations for pipe laying shall begin until the existing topsoil and humus material has been stockpiled.

3.2 CARE AND RESTORATION OF EXISTING PROPERTY:

A. Excavating machinery shall be of suitable type and be operated with care to prevent injury to trees not to be cut, and particularly to overhanging branches or limbs.

B. Branches, limbs and roots shall not be cut except by permission of the ENGINEER. All cutting shall be smooth and neatly done without splitting or crushing. In case of cutting or unavoidable injury to branches,

limbs, or trunks of trees, the cut or injured portion shall be neatly trimmed and covered with an application of grafting wax or tree-healing paint as directed.

C. Cultivated hedges, shrubs, and plants which might be injured by the CONTRACTOR's operations shall be protected by suitable means or shall be dug up and temporarily replanted and maintained. After the construction operations have been substantially completed, they shall be replanted in their original position and cared for until growth is re-established. If cultivated hedges, shrubs and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced by items of kind and quality at least equal to the kind and quality existing at the start of the work.

D. All surfaces which have been damaged by the CONTRACTOR's operations shall be restored to a condition at least equal to that in which they were found immediately before work was started.

E. The CONTRACTOR shall be fully responsible for all damages to public and private property and will be expected to carefully protect from injury all walls, fences, buildings, and underground facilities. If removal and replacement is required, it shall be done so that the replacement is equivalent to that which existed prior to construction and shall be paid for by the CONTRACTOR.

END OF SECTION

SECTION 02211 - ROCK EXCAVATION

PART 1: GENERAL

1.1 SCOPE:

A. This section includes the trench excavation and disposal of all rock and boulders encountered to the lines and grades indicated on the drawings or as specified.

B. The CONTRACTOR shall dispose of the excavated material and shall furnish select backfill material in place of the excavated rock.

C. A preblast survey shall be conducted by a company specializing in preblast surveys with a minimum of five years documented experience.

D. Adhere to all city ordinances regarding blasting.

1.2 ROCK AND BOULDER DEFINITION

A. Rock excavation will be interpreted as meaning ledge rock and boulders measuring more than two cubic yards or any other material which in the opinion of the ENGINEER requires drilling and blasting, or drilling and wedging, to remove. No hardpan, no soft or disintegrated rock which can be removed with a pick; no loose, shaken or previously blasted rock or broken stones smaller than two cubic yards, or frozen earth will be measured or allowed as rock excavation.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

A. Excavation and Backfilling for Water Mains - Section 02217.

B. Bedding and Backfill Material - Section 02219

PART 2: PRODUCTS

2.1 EQUIPMENT

A. Equipment shall be at CONTRACTOR's option.

PART 3: EXECUTION

3.1 BLASTING:

A. Obtain approval of the District Inspector before blasting.

B. Perform blasting in accordance with the following:

1. "Manual of Accident Prevention in Construction" issued by Associated General Contractors of America, Inc.

2. "Construction Safety Rules and Regulations" as adopted by the State Board of Construction Safety, Augusta, Maine

3. Section 107.12 of the "Standard Specification", Maine Department of Transportation.

C. Submit an accurate record, on an approved form, containing the following information on each blast to the ENGINEER on a daily basis:

1. Location of blast.
2. Depth and number of drill holes.
3. Type and quantity of explosive used.
4. Time of blast.
5. Seismographic record of each blast taken at nearest structure.

D. Preblast survey shall be done by SUBCONTRACTOR hired by CONTRACTOR. Provide preblast survey prior to any blasting or blasting related operations. Survey to be performed by an independent business entity with a minimum of 5 years experience in similar type surveys.

1. Preblast survey to 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.

f. Blasting shall be conducted with all possible care so as to avoid injury to persons and property. Rock shall be well covered with effective appliances and sufficient warning shall be given to all persons in vicinity of work before blasting. Care shall be taken to avoid damage to water pipes, sewers, drains, or other utilities and structures. Caps or other exploders shall not be kept in same place in which dynamite or other explosives are stored or where tools and supplies are stored.

g. CONTRACTOR shall observe all Federal and State laws and local ordinances relating to storage, transportation and handling of explosives and blasting, and shall obtain and pay for all permits.

h. No blasting shall be done after 3:00 P.M. on weekdays, or at any time on Saturdays, Sundays, or holidays in any area where there are existing utilities.

i. If any damage or injury is directly or indirectly caused to water pipes or other utilities by the CONTRACTOR's blasting operations, the CONTRACTOR shall do whatever is required by the Utility Company to repair the damage and shall assume all cost for the repair work, whether it be done by the CONTRACTOR or the Utility Company itself.

j. Should the CONTRACTOR's blasting work prove unsatisfactory to the ENGINEER or OWNER, the OWNER shall have the authority to terminate blasting until the CONTRACTOR shall satisfy the ENGINEER that future damages will be minimized. The CONTRACTOR shall provide and pay for the services of a blasting expert if required by the ENGINEER, and the expert shall submit a written report on the recommended blasting procedures which the CONTRACTOR shall follow. The blasting expert shall be subject to the approval of the ENGINEER. Ordered termination of blasting shall not be cause for a delay of work claim.

3.2 <u>EXCESSIVE ROCK EXCAVATION:</u>

A. All rock that is excavated beyond the pay limits shall be backfilled with suitable backfill material at no added cost to the OWNER.

3.3 SHATTERED ROCK:

A. 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 suitable material. All such removal and backfilling shall be done by and at the expense of the CONTRACTOR.

3.4 PREPARATION OF ROCK SURFACES:

A. All rock to be satisfactorily uncovered by the CONTRACTOR and made ready for measurement by the ENGINEER before any blasting is done.

3.5 DISPOSAL OF EXCAVATED ROCK:

A. Excavated rock may be used in backfilling trenches subject to the following limitations.

1. No pieces of rock larger than 8 inches in the greatest dimension shall be placed in the backfill.

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 in the gravel base area or within 24” of the surface of the finish grade.

B. Surplus excavated rock shall be disposed of in areas approved by OWNER.

C. Acceptable borrow, similar to existing material, shall be provided by the CONTRACTOR as necessary to supply any deficiencies in trench backfill.

END OF SECTION

SECTION 02217 - EXCAVATION AND BACKFILLING FOR WATER MAINS

PART 1: GENERAL

1.1 SCOPE:

A. This section includes all excavation for water mains, hydrants and appurtenances, including drainage, sheeting and bracing, backfilling, disposal of surplus material, and miscellaneous grading. All work shall be done as indicated on the drawings and as herein specified.

B. Excavation for water mains shall be the width and depth as indicated on the standard details. Excavation for hydrants and appurtenances shall provide suitable room for their construction.

C. The CONTRACTOR shall furnish and place all sheeting, bracing and supports, and necessary dewatering, and shall carry out the excavation in such a manner as to eliminate all possibilities of undermining or disturbing existing pipelines, utilities, roadways, shoulders and/or structures.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. Bedding and Backfill Material - Section 02219

PART 2: PRODUCTS

2.1 EQUIPMENT:

A. Equipment shall be at CONTRACTOR'S option.

PART 3: EXECUTION

3.1 EXCAVATION:

A. When any pavement, regardless of type, must be cut, it shall be done in a neat and symmetrical manner by use of a saw, chisel, or other suitable method. In no case shall pavement be torn up with a backhoe bucket except between and inside of cuts previously made as above. Should any further pavement be broken, outside of the cuts, as by blasting, such damaged pavement shall be cut out in a neat and orderly fashion.

B. The CONTRACTOR shall perform all excavation of every description and of whatever substances encountered to the depths shown on the drawings or directed by the ENGINEER.

C. No extras will be allowed for quicksand excavation, muck excavation, or any other type unless specifically provided for in the bidding schedule.

D. Surplus excavated material may be used at other parts of the construction project as required for fill, etc. Excess material shall be disposed of by the CONTRACTOR.

E. The sidewalls of all trench excavation shall be kept as nearly vertical as possible in all roadways, lawns, near homes, etc. by sheeting, bracing, or other means. The width of the trench at a point six (6) inches above the top of the water pipe shall not be greater than the width detailed. If the type of excavated material will not allow the width detailed, then the trench shall be properly sheeted and braced. The cost of sheeting, bracing, or other means is included in the cost of the pipelines and no extras will be allowed.

F. The excavation shall be made to secure a flat bottom trench (undisturbed earth bottom) for the full length of the pipe so as to give a uniform support to the pipe and shall be in accordance with ANSI A21.50 (AWWA C150), Type 2 Laying Condition.

G. The bottom of the trench shall be accurately graded to provide support to the full length of the pipe barrel. Excavate at each bell to prevent bell from bearing on trench bottom.

3.2 EXCAVATION BELOW TRENCH GRADE:

A. By mistake of CONTRACTOR: Where the bottom of the trench shall, by mistake of the Contractor, have been taken out to a greater depth than required, it shall be refilled to the proper grade with bedding material, and all to be placed and compacted as specified. The CONTRACTOR shall receive no additional compensation.

B. By instruction from ENGINEER: If, in the opinion of the ENGINEER, existing material below trench grade is unsuitable for properly laying the pipe, the CONTRACTOR will excavate and remove the unsuitable material and replace the same with bedding material as authorized by the ENGINEER and properly compacted to his satisfaction. The CONTRACTOR will be paid under the item titled "Unsuitable Material Excavated Below Trench Grade."

3.3 EXCAVATION NEAR EXISTING UTILITIES, ETC.

A. It will be necessary to excavate near existing pipes, drains and other utilities in certain locations. Some of these have been indicated on the drawings, but no attempt has been made to show all of the services and the completeness and accuracy of the information given is not guaranteed. The CONTRACTOR shall call "Dig-Safe" at least three business days in advance of any excavation to allow utilities to locate underground facilities.

B. As the excavation approaches pipes, conduits, or other underground structures and utilities, digging by machinery shall be discontinued and the excavation shall be done by means of hand tools.

C. If the utility is of the opinion that at any point sufficient or proper support has not been provided, they may order additional supports placed at the expense of the CONTRACTOR. Compliance with such order shall not relieve the CONTRACTOR from his responsibility for the sufficiency of such supports. It shall be the responsibility of the CONTRACTOR to prevent damage to or displacement of utilities and to consult with and request the concurrence of the utility company's representative in this matter at all locations. The cost of protecting such utilities shall be considered incidental to the cost of laying the pipe.

3.4 TRENCH SURCHARGES:

A. The excavated material shall be placed adjacent to the excavation in a manner to cause no excessive surcharge on the trench bank nor to obstruct free access to hydrants and valves. Should traffic or other conditions make it impractical or unsafe to stack material adjacent to trench, it shall be hauled and stored at a location provided by the CONTRACTOR and at the expense of the CONTRACTOR. When required, it shall be re-handled and used in backfilling the trench by the CONTRACTOR and at his expense.

3.5 SHEETING AND BRACING:

A. The CONTRACTOR shall be responsible for the design, construction, maintenance and safety of all sheeting and bracing required to support the sides of the excavation and to prevent the movement of earth which could in any way damage or endanger adjacent structures, utilities, roadways, increase the width of the excavation to more than that specified, or delay the work.

B. All sheeting, bracing and shoring is to be included in prices bid for several items of work in bidding schedule and will not be paid for as separate items.

C. No shoring shall be left in place unless so directed by the ENGINEER.

3.6 DRAINAGE AND DEWATERING OF EXCAVATIONS:

A. The CONTRACTOR shall conduct his operations so as to prevent at all times the accumulation of water, ice and snow in excavations or in the vicinity of excavated areas so as to prevent water from interfering with the progress or quality of the work. Under no conditions shall water be allowed to rise in unbackfilled trenches after pipe has been placed.

B. Accumulated water, ice and snow shall be promptly removed and disposed of by dewatering. Disposal shall be carried out in a manner which will not create a hazard to public health; nor cause injury to public or private property, work completed or in progress, or public streets; nor cause any interference in the use of streets and roads by the public. Pipes under construction shall not be used for drainage of excavations.

C. During construction, when an unstable condition in the pipe sub-grade has been created due to the CONTRACTOR'S excavation, the sub-grade shall be stabilized by dewatering or other means accepted by the ENGINEER.

3.7 BACKFILLING - GENERAL:

A. In general and unless other material is indicated on the drawings or is specified, material used for backfilling trenches and excavations around structures shall be suitable material which was removed in the course of making the construction excavations or as specified.

B. Frozen materials shall not be placed in the backfill, nor shall material be placed upon frozen material. Previous frozen material shall be removed or shall be otherwise treated as required before new backfill is placed.

C. Backfilling shall be done as soon as practical after the pipe has been laid and jointed.

3.8 SUITABLE BACKFILL MATERIAL

A. Suitable backfill material shall be the following or a combination of the following:

1. Excavated material that will compact to the compaction requirements.
2. Material that does not contain rocks larger than 8" in any dimension.
3. Dry clay backfill free from lumps.
4. Wet clay that alone would pump but when mixed with sand and/or gravel will be stable and will compact.

3.9 BACKFILLING PIPE TRENCHES:

A. As soon as practicable after the pipes have been laid and jointed, backfilling shall begin and shall proceed until it is completed or has sufficient backfill to allow pipe testing.

1. The first layer of suitable backfill material shall be brought half-way up the pipe and compacted to 80% maximum density and then the normal backfilling shall begin and shall be compacted as specified.

2. All backfill shall be thoroughly compacted by hand tamping as placed, by use of mechanical or vibratory compactors, or by other acceptable methods.

3. Remainder of the trench shall be backfilled as follows:

a. In paved areas, road shoulders and seeded areas, the entire depth of trenches above the center line of the pipe shall be backfilled in eight (8) inch layers with suitable backfill material and each layer thoroughly and carefully compacted as specified. Bring backfill up to bottom of gravel base and/or loam.

b. In other areas, the trench above the center- line of the pipe shall have suitable backfill material placed and compacted in eighteen (18) inch maximum layers as specified.

B. The nature of the excavated materials will govern both their acceptability for backfill and the method best suited for their placement and compaction in the backfill.

1. Both the materials and the methods shall be subject to the acceptance of the ENGINEER.

2. No stones or rock larger than 8" in the greatest dimension shall be placed in the backfill.

C. Backfilling in public right-of-way, along the streets or highways in or along shoulder, berm or backslope shall be done in accordance with the specifications and requirements of the state or municipality, whichever is responsible for the street or highway involved. Responsibility for the fulfillment of permit conditions or any other applicable requirements of the street or highway authority shall be the obligation of the CONTRACTOR. Surface restoration shall be carried out to the satisfaction of the street or highway authority or as shown on the plans.

D. Backfilling shall follow pipe laying as closely as reasonable, so that a minimum of trench shall be open at any time. The regulations of the highway authorities shall be observed as regards the amount of trench to be open at any one time. Over night, and especially over weekends and holidays, the amount of open trench shall be kept at an absolute minimum. Any caved-in trench, especially after heavy rain and flooding, shall be cleaned out and the bottom consolidated before any additional pipe shall be laid.

3.10 TOP OF BACKFILL:

A. In paved and shoulder areas, backfill shall be carried up to pavement or shoulder sub-grade ready to receive the gravel base. In other areas, backfill shall be brought up to adjacent finished grade minus the depth of any required topsoil and so as to provide a finished surface slightly mounded over the trench. Any trenches improperly backfilled, or where settlement occurs, shall be reopened to the depth required for proper compaction, and shall then be refilled and compacted with the surface restored to required grade and degree of compaction, mounded over, and smoothed off, at no additional expense.

B. In unpaved areas, the gravel topping shall be left in a smooth and even condition, with no large stone on or in the surface. In cases where a paved surface has been broken, a temporary bituminous patch and/or a permanent paving restoration shall be made as required by the appropriate local or state road authority.

3.11 COMPACTION:

A. Compaction densities specified herein shall be the percentage of the maximum density obtainable at optimum moisture content as determined and controlled in accordance with AASHTO Standard T-180, Method A or D depending on the material size. Field density tests shall be made in accordance with AASHTO Standard T-147.

Each layer of backfill shall be moistened or dried as required and shall be compacted to the following densities, unless otherwise specified in the project specifications.

1. Bedding material	80%
2. Suitable backfill material under paved or shoulder areas	90%
3. Gravel base:	
a. Under paved areas	95%
b. In shoulder areas	90%

c.	As replacement for unsuitable material excavated below grade	90%
4.	Loam areas	90%
5.	All other areas	85%

B. Methods and equipment proposed for compaction shall be subject to prior acceptance by the ENGINEER. Compaction generally shall be done with vibrating equipment. Displacement of, or injury to, the pipe and structure shall be avoided. Movement of in-place pipe or structures shall be at the CONTRACTOR'S risk. Any pipe or structure damaged thereby shall be replaced or repaired as directed by the ENGINEER and at the expense of the CONTRACTOR.

C. Testing:

1. Field density tests may be ordered by the ENGINEER for each foot of depth of backfill at an average interval of 200 feet along the trench.

2. The CONTRACTOR shall furnish all necessary samples for laboratory tests and shall provide assistance and cooperation during field tests. The CONTRACTOR shall plan his operations to allow adequate time for laboratory tests and to permit taking of field density tests during compaction.

3. Any costs of retesting required as a result of failure to meet compaction requirements shall be borne by the CONTRACTOR.

3.12 FILL AND GRADING:

A. Excavated material not required for backfilling around pipes or structures may be used for fill in areas which require material for re-grading.

B. The re-grading shall be carried out as directed by the ENGINEER, so that all surface water will drain towards brooks or drainage pipes.

C. All material shall be of such nature that after it has been placed and properly compacted, it will make a dense and stable fill.

3.13 PROTECTION OF EXISTING STRUCTURES:

A. All existing pipes, wires, poles, fences, property line markers and other items, which must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from injury by the CONTRACTOR, at no additional cost to the OWNER. Should such items be injured, they shall be restored by the CONTRACTOR, without compensation therefore, to at least as good condition as that in which they were found immediately before the work was begun.

3.14 ACCOMMODATION OF TRAFFIC:

A. The CONTRACTOR shall construct and maintain, without extra compensation, such adequate and proper bridges over excavations as may be necessary or as directed for the safe accommodation of pedestrians and vehicles. The CONTRACTOR shall furnish and erect, without cost to the OWNER, substantial barricades at crossing of trenches, or along the trench, to protect the traveling public.

B. The CONTRACTOR shall not obstruct fire hydrants.

END OF SECTION

SECTION 02219 - BEDDING AND BACKFILL MATERIAL

PART 1: GENERAL

1.1 SCOPE:

A. The CONTRACTOR shall furnish, place and compact various types of bedding material and trench sand as called for in the specifications or as directed.

B. The types and quality of bedding and backfill material are specified in this section, but its use for pipe bedding, backfill, replacement of unsuitable material excavated below trench grade, and other uses are as specified elsewhere.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. Excavation and Backfilling for Water Mains - Section 02217

PART 2: PRODUCTS

2.1 MATERIALS:

A. Bedding Material:

1. Screened or crushed gravel bedding material shall be hard durable particles free from organic matter, lumps of clay and other deleterious substances. The gradation shall meet the requirements of the following table and MDOT specifications Section 703.06 Type B aggregate

Sieve Size Designation	% By Weight
1/2 inch	35 - 75
1/4 inch	25 - 60
No. 40	0 - 25
No. 200	0 - 5.0

2. Select backfill as specified below may be used for bedding material.

3. Bedding material shall not contain particles of rock which have any dimensions greater than 4”.

B. Select Backfill:

1. Suitable native material with all particles of rock which have any dimensions greater than 4” removed.

2. Sand backfill shall be hard, durable particles of granular material with 100% passing the 1/2" sieve and between 0-15% passing the #200 mesh. All percentages are by weight. Sand shall be graded so as to secure the required compaction.

C. Backfill:

1. Suitable native material that does not contain stone or rock particles with any dimensions greater than 8”.

2. Bank Run gravel borrow consisting of uniformly graded granular material having no rocks with a maximum dimension greater than 8” and that portion passing a 3-inch square mesh sieve shall

contain no more than 70% passing 1/4 inch mesh sieve and not more than 10% passing a No. 200 mesh sieve.

D. Aggregate Subbase Course Gravel:

1. Hard, durable particles meeting MDOT “Standard Specification” Section 703.06 Type D aggregate with the exception that all material must pass a 3” square mesh sieve.

PART 3: EXECUTION

3.1 METHODS:

A. The materials will be used in accordance with the requirements of the various sections of the specifications, drawings and standard details.

END OF SECTION

SECTION 02270 - SEDIMENTATION AND EROSION CONTROL

PART 1: GENERAL

1.1 SCOPE

A. Furnish all labor, materials, equipment and incidentals necessary to perform all installation, maintenance, removal and area cleanup related to sediment and erosion control work as shown on the Drawings and as specified herein. The work shall include, but not necessarily be limited to installation of silt fences, sediment traps, sediment removal and disposal, device maintenance, removal of temporary devices, temporary mulching, erosion control blanket, and final cleanup

1.2 RELATED WORK

A. Loam and seeding is included in Section 02821.

1.3 SUBMITTALS

A. Within 10 days after award of Contract, submit to the ENGINEER for approval technical product literature for all commercial products to be used for sedimentation and erosion control.

1.4 REFERENCE MANUAL

A. Except as otherwise specified herein, the material and construction shall be in accordance with the Department of Transportation "Standard Specifications for Highways and Bridges of the State of Maine" and the "Maine Erosion and Sedimentation Control Handbook for Construction, Best Management Practices" (BMP Handbook).

1.5 TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES

A. Minimizing the exposed soil areas on the construction site is one of the most important and reliable methods of erosion control. The CONTRACTOR must phase the work so that areas of bare soil will be minimized. Exposed areas must be treated as described below and in the BMP Handbook.

   Temporary erosion and sedimentation control measures will include silt fences, hay bale barriers, temporary seeding, temporary mulching and topsoil stockpiling. These measures are described in more detail below.

B. Silt fence will be placed down slope of all construction areas which drain toward a stream, wetland or improved area.

C. Hay bale barriers will be used as necessary until final restoration is complete. They may also be used as check dams in drainage areas. Hay bales will be staked end to end in an excavated trench four inches deep across the area of runoff.

D. Temporary mulching will be placed on all disturbed areas within two days or prior to any storm event. Mulch anchoring will be used on areas where the slope is greater than 5% or when placed after September 15. Straw mulch shall be applied at a rate of 90 lbs. per 1000 sq. ft. All mulched areas will be inspected before and after storms. If less than 90% of the surface is covered by mulch, additional mulch shall be applied immediately. Mulching shall be installed and maintained as recommended in the BMP Handbook.

E. Topsoil shall be stockpiled on site with silt fence installed down slope of the piles. These stockpiles shall be mulched in accordance with the temporary mulching requirements.

1.6 PERFORMANCE REQUIREMENTS

A. The CONTRACTOR shall be responsible for the timely installation and maintenance of all sedimentation control devices necessary to prevent the movement of sediment from the construction site to off site areas or into streams and wetland areas via surface runoff or underground drainage systems. Measures in addition to those shown on the drawings necessary to prevent the movement of sediment off site, control erosion or stabilize disturbed areas shall be installed, maintained, removed and cleaned up at no additional cost to the OWNER.

B. Sedimentation and erosion control measures shall conform to the requirements of the BMP Handbook.

C. Where CONTRACTOR's effort to control erosion has been demonstrated to be ineffective or potentially ineffective in the opinion of the ENGINEER, the ENGINEER may order that the erosion control plan be amended and that additional erosion control measures be constructed at no additional cost to the OWNER.

1.7 SEQUENCE OF CONSTRUCTION

A. All hay bale check dams and silt fencing shall be in place below or adjacent to construction areas before actual construction begins. These devices shall remain in place until a healthy grass cover is obtained and the site is stabilized. These temporary structures shall be inspected weekly throughout the construction phase. They shall be repaired or replaced when necessary. These devices shall be removed when the area they serve is completely stabilized.

B. Permanent re-vegetation or seeding of all disturbed areas shall occur immediately upon completion of work or, if temporary stabilization measures were used, within 7 days from the time the area was last actively worked. Temporary stabilization measures are required within two days from the time the area was last actively worked or prior to storm events.

PART 2: PRODUCTS

2.1 MATERIALS

A. Silt Fence

1. Steel or wood posts shall be a minimum of 5 feet in length.

2. Silt fence fabric shall be a woven, polypropylene, ultraviolet resistant material such as Mirafi 100X as manufactured by Mirafi, Inc., Charlotte, N.C. or equal.

A. Mulch material for all slopes equal to or greater than 20% shall be an erosion control blanket (ECB). The ECB shall consist of 70% long fiber hay or straw and 30% coconut fiber. The fibrous material shall be held in place by top and bottom netting sewn together. The fibrous material shall be reasonably free from noxious weeds or other undesirable material. The ECB shall be Type SC150 as manufactured by North American Green, or approved equal.

B. For slopes less than 20% and level areas, mulch material shall consist of long fiber hay or straw reasonably free from noxious weeds or other undesirable material. No material shall be used which is so wet, decayed, or compacted as to inhibit even and uniform spreading. No chopped hay, grass clippings or other short fiber material shall be used unless directed. The hay or straw shall be treated with a mulch tackifier.

C. Latex acrylic copolymer such as Soil Sealant with coalescing agent as manufactured by Soil Stabilization Co., Merced, California, or approved equivalent, shall be used as hay or straw mulch tackifier. Asphalt tackifiers are not allowed.

PART 3: EXECUTION

3.1 INSTALLATION

A. Silt Fence Installation

1. Position silt fences as shown on the Drawings and as necessary to prevent off site movement of sediment produced by construction activities as directed by the ENGINEER.

2. Dig trench approximately 4 inches wide and 4 inches deep along proposed fence lines.

3. Drive stakes 8 feet on center (maximum) at back edge of trenches. Drive stakes 2 feet (minimum) into ground.

4. Attach filter fabric on stakes to bottom of trench with about 4 inches of fabric laid across bottom of trench. Stretch fabric fairly taut along fence length and secure.

5. Backfill trench with excavated material and tamp.

6. Install pre-fabricated silt fence according to manufacturer's instructions.

3.2 MAINTENANCE AND INSPECTIONS

A. Inspections

1. CONTRACTOR shall make a visual inspection of all sediment control devices daily and immediately before and after every rainstorm.

2. If such inspection reveals that additional measures are needed to prevent movement of sediment to off site areas or into streams or wetland areas, CONTRACTOR shall promptly install additional devices as needed. Sediment controls in need of maintenance shall be repaired promptly.

B. Device Maintenance

1. Silt Fences

a. Remove accumulated sediment once it builds up to one-half of the height of the fabric.

b. Replace damaged fabric or patch with a two foot minimum overlap.

c. Make other repairs as necessary to ensure that the fence is filtering all runoff directed to the fence.

3.3 EROSION CONTROL BLANKET

A. Install erosion control blankets in accordance with manufacturer's instructions. Properly prepare, fertilize and seed the area to be covered with permanent vegetation before the blanket is applied. Apply the blankets in the direction of water flow and staple together in accordance with manufacturer's instructions. Side overlaps shall be 2-inch minimum. The staples shall be made of wire .091-inch in diameter or greater, "U" shaped with legs 10 inches in length and a 1- inch crown. The staples shall be driven vertically into the ground at a rate of one staple per square yard according to manufacturer's staple pattern guide.

B. Bury upper and lower ends of the matting to a depth of 4 inches in a trench. Where the matting must be cut or more than one roll is required, turn down upper end of downstream roll into a slit trench to a depth of 4 inches. Overlap lower end of upstream roll 4 inches past edge of downstream roll and staple.

C. To ensure full contact with soil surface, roll matting with a roller weighing 100 pounds per foot of width perpendicular to flow direction after seeding, placing matting, and stapling. Thoroughly inspect after completion. Correct any areas where matting does not present a smooth surface in full contact with the soil below.

3.4 REMOVAL AND FINAL CLEANUP

A. Once the site has been fully stabilized against erosion, remove sediment control devices and all accumulated silt. Dispose of silt and waste materials in proper manner. Re-grade all areas disturbed during this process and stabilize.

END OF SECTION

SECTION 02536 – TEMPORARY WATER SYSTEMS

In order to maintain uninterrupted water service to District customers, the Contractor shall provide temporary above ground water systems. The temporary water systems consist of mains, services and fire department outlets. The above ground systems shall be installed only for the duration of deep water main replacement and removed promptly after main replacement is complete. Connections to an existing water source shall be installed and provided by the District. All material for the temporary water systems, except as otherwise indicated, shall be supplied by the contractor. Currently the District has approved 2 manufacturers for the temporary mains and 100-psi poly tube for individual services. Only authorized District personnel shall operate control valves attached to these systems.

Temporary Water Systems Approved Pipe

Certainteed Certa-Lok Yellowmine	Restrained Joint PVC pressure pipe and fittings
AquaMine (Victaulic Co)	Restrained Joint PVC pressure pipe and fittings

Temporary above ground water mains shall be installed in a manner to both protect the public water supply and to minimize customer service interruption. To allow the District to notify its affected customers, the Contractor shall provide the District a minimum of 5 working days notice prior to installing any temporary lines.

The size and approximate location of the temporary systems are shown on the drawings. The Contractor must obtain the approval of the District for any changes prior to installation of the system.

Temporary mains shall typically be installed behind sidewalks or along the edge, and within the public right of way. The mains shall follow a uniform straight course and shall not bow to accommodate long sections of pipe. Temporary mains shall not be installed on private property. The route of services lines installed from the mains to houses shall be acceptable to the property owner.

The Contractor shall follow the pipe manufactures installation guidelines when installing temporary systems. Additionally, an approved joint lubrication for the installation of potable water pipe shall be used on all joints prior to connecting pipe.

Source: The District will provide necessary connections at fire hydrants including an approved backflow device and meter. A chlorine tap will also be provided.

Disinfections: All 2” diameter and larger temporary mains shall be chlorinated, sampled, and tested for bacteria prior to activating any portion of the temporary mains. (See disinfection specification for deep mains).

Leakage test: All systems shall be watertight. A static pressure test shall be performed on all systems prior to disinfecting any portion of the system.

Test Procedure

1. Install a pressure gauge at furthest end of the system.
2. Open main feed valve to fully charge the system with water and bleed all air.
3. Record the static pressure reading.
4. Close main feed valve.
5. The system must hold static pressure for a minimum of 30 minutes.

Driveway crossings: A gravel or cold patch raised berm shall be placed over temporary mains to prevent vehicles from dragging along the ridge.

Sidewalk crossings: A gravel or cold patch raised berm shall be placed over temporary mains to eliminate tripping hazards. In areas where the berm would prevent rainwater drainage plywood ramps shall be installed the full width of the sidewalk and over the temporary mains

Roadway crossings: Temporary mains shall be buried just below the surface of the roadway. The pipe shall be protected with clean sand or material free from rocks, as the rocks tend to punch through the pipe when exposed to heavy traffic. The use of cold patch or QPR as fill material is acceptable.

Curbing or esplanade rise: To accommodate curb rise, pre-fabricated certa-lock bends and/or elbows shall be used. Sweeping or bending the actual pipe is not an acceptable method unless the sweep lies flat on the ground and is not obstructing walkways. A traffic barrel shall be placed near the curb at offset connections to protect the offsets from being damaged by vehicles.

Cutting pipe: Follow manufacturer's installation instructions. All joints, including those on cut lengths of pipe, shall be grooved to provide a restrained joint. Pre-fabricated bends, elbows, and tees shall be used when changing direction.

Blow off: A 1" blow off shall be installed at the ends of all temporary mains. The blow off shall be constructed using a 1" brass female curb stop.

Isolation valves: Shall be 2" brass female curb stops for 2" mains and 4" resilient wedge valves for 4" mains (grip rings shall be used for 4" valves). Valves shall be located as shown on the plan. The valves are attached to the mains using pre-fabricated adapters.

Service line connections: All temporary individual service lines shall be ¾" poly tube rated at a minimum working pressure of 100 psi. The service lines shall be connected to a 2"x 3/4" factory tapped restrained joint coupling, then a ¾" close brass nipple, a ¾" female curb stop and a brass poly tube adapter ¾" insert x male. The tube shall be extended to a sill cock (outside faucet) and connected using the same poly tube adapter. Prior to connecting the service, a garden hose connection, including a brass boiler drain or sill cock valve shall be installed in the line. All service lines shall be flushed prior to activating mains.

Anti-siphon sill cocks: Only District authorized personnel shall disassemble anti-siphon sill cocks.

Excavating and connecting into existing deep service lines may be required where properties have malfunctioning sill cocks or no exterior plumbing.

Shutting off meters

After activating the temporary lines, all meters shall be shut off. Only District authorized personnel may de-activate meters.

Maintenance of temporary water systems: The contractor shall be responsible for maintaining the temporary systems during the regular workday including making repairs to the systems. The District's Inspector must be on site prior to any work, or repairs being performed on the temporary water systems. District crews will respond to all after hour's emergencies. All affected customers shall be notified as soon as possible prior to any service interruption.

It is expected that contractors will keep an inventory of readily available repair parts on hand enabling them to quickly respond to any type of problem. Restrained joints shall be maintained. The use of non-restrained joint couplings is prohibited. Joint leaks shall be cut out. The use of stainless steel wrap around repair clamps over pinholes is acceptable.

END OF SECTION

SECTION 02537 - DUCTILE IRON WATER PIPE & FITTINGS

PART 1: GENERAL

1.1 SCOPE:

A. This section includes the furnishing and installing of ductile iron water pipe and ductile iron or cast iron fittings as specified.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. Excavation and Backfill for Water Mains - Section 02217

B. Bedding and Backfill Material - Section 02219

1.3 SUBMITTALS:

A. Submit shop drawings for all material in accordance with the provisions of Section 01310.

PART 2: PRODUCTS

2.1 MATERIALS:

A. See SEC02999 – Water Main Material Specifications

PART 3: EXECUTION

3.1 PIPE LAYING CONDITIONS:

A. The interior of each pipe shall be inspected while being joined to see that the alignment is preserved and to assure that no dirt or debris has entered the pipe after laying and partial backfilling.

B. Pipe fittings and accessories shall be carefully lowered into the trench, piece by piece, by means of derrick, crane, slings and other suitable tools and equipment, in a manner such as to prevent damage to the material or to its protective coating and linings. No chain or slings shall be passed through the inside bore of any pipe or valve or fitting. Under no circumstances shall piping materials be dropped or dumped into the trench.

3.2 LAYING DUCTILE IRON PIPE:

A. As soon as the excavation is completed and the existing trench bottom has been brought to the proper grade, the pipe shall be laid.

B. All pipe, before being lowered into the trench, shall be inspected inside and out. Both ends shall be cleaned and any visible dirt or debris removed from inside the pipe. Care shall be taken to lay the pipe to true lines and grades as shown on the drawings.

C. Coupling holes shall be excavated so that the barrel of the pipe shall bear upon the trench bottom.

D. Blocking under the pipe will not be permitted.

E. Each section shall rest upon the pipe bed for the full length of its barrel.

F. The circular rubber gasket shall be inserted in the gasket seat provided. A thin film of gasket lubricant shall be applied to the inside surface of the gasket. Gasket lubricant shall be a solution of vegetable soap or other solution supplied by the pipe manufacturer.

G. The spigot end of the pipe shall be cleaned and entered into the rubber gasket in the bell, using care to keep the joint from contacting the ground. The joint shall then be completed by forcing the plain end to the seat of the bell. Pipe which is not furnished with a depth mark shall be marked before assembly to assure that the spigot end is inserted to the full depth of the joint.

H. Pipe shall be aligned with the preceding unit and laid so as to form a close joint with the adjoining pipe and bring the inverts continuously to the required line and grade.

I. No length of pipe shall be laid until the previous length has had sufficient material tamped about it to firmly secure it in place so as to prevent any movement or disturbance.

J. Under no circumstances shall pipe be laid in water, and no pipe shall be laid when trench conditions or weather are unsuitable for such work, except by permission of the ENGINEER.

K. The pipe shall be laid with the bell ends facing the direction of the laying, unless otherwise permitted by the ENGINEER.

L. Joints, when made, shall be done in the manner prescribed by the manufacturer of the pipe. In the case of rubber gasket joints, these joints shall be made up in accordance with the American National Standards for the jointing of cast iron pressure pipe and fittings. (ANSI/AWWA C111/A21.11).

M. Thrust blocks shall be used behind tees, bends, or other fittings where shown. Size shall be appropriate for soil conditions and thrust forces acting on the specific fitting.

3.3 TRENCH BOTTOM:

A. Should the trench bottom contain unsuitable material, as indicated in Section 02217, Article 3.2-b, the CONTRACTOR shall over-excavate and replace with bedding material as required and authorized by the ENGINEER. The quantity of unsuitable material will be measured from the bottom outside of the pipe.

B. Should ledge be encountered, it shall be removed to a depth of 6" below the bottom of the pipe, and replaced with bedding material.

3.4 CUTTING PIPE:

A. All ductile iron pipe shall be cut using abrasive wheel cutter, rotary wheel hand cutter (with carbide cutter) or a guillotine pipe saw. All cuts shall be square and even with no ragged rough ends.

B. Field cut pipe lengths shall be beveled and filed to avoid damage to the gasket and facilitate making the joint.

C. When the cut end of pipe is to be used as a joint, the outside of the cut end shall be tapered back about 1/8-inch at an angle of about 30 degrees with the center line of the pipe. This shall be done with a coarse file or a portable grinder.

3.5 TEMPORARY PLUGS:

A. When pipelaying is not actually in progress, the openings of pipes shall be closed by temporary watertight plugs or other accepted means.

3.6 RETAINER GLANDS:

A. Install retainer glands on all mechanical joints of fittings, valves and hydrants.

3.7 POLYETHYLENE ENCASEMENT:

A. Tube type polyethylene encasement shall be installed on all ductile iron pipe and fittings in accordance with AWWA Standard C105 - latest revision, Method A. Circumferential wraps of tape or plastic tie straps shall be placed at 2-ft. intervals along the barrel of the pipe.

B. The polyethylene encasement shall prevent contact between the pipe and the surrounding backfill and bedding material but is not intended to be a completely airtight or watertight enclosure. All lumps of clay, mud, cinders, and so forth, on the pipe surface shall be removed prior to installation of the polyethylene encasement. During installation, care shall be exercised to prevent soil or embankment material from becoming trapped between the pipe and the polyethylene.

C. The polyethylene film shall be fitted to the contour of the pipe to effect a snug, but not tight, encasement with minimum space between the polyethylene and the pipe. Sufficient slack shall be provided in contouring to prevent stretching the polyethylene where it bridges irregular surfaces, such as bell-spigot interfaces, bolted joints, or fittings, and to prevent damage to the polyethylene due to backfilling operations. Overlaps and ends shall be secured with adhesive tape, string, plastic tie straps, or any other material capable of holding the polyethylene encasement in place until backfilling operations are complete.

END OF SECTION

SECTION 02539 – POLYVINYL CHLORIDE (PVC) WATER PIPE

PART 1: GENERAL

1.1 SCOPE:

A. This section includes the furnishing and installing of PVC water pipe.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. Excavation and Backfill for Water Mains - Section 02217

B. Bedding and Backfill Material - Section 02219

1.3 SUBMITTALS:

A. Submit shop drawings for all material in accordance with the provisions of Section 01310.

PART 2: PRODUCTS

2.1 MATERIALS:

A. PVC Pipe:

1. All PVC pipe shall be manufactured from virgin PVC resin that equal or exceed cell class 12454-B as defined in ASTM D1784, and shall qualify for a hydrostatic design basis of 4000 psi at 73.4 degrees F. Pipe shall meet requirements of AWWA C-900.

2. PVC pipe shall be certified for potable-water use meeting the requirements of NSF 61.

3. The pressure rating shall be 305 psi (SDR 14).

4. The pipe shall be furnished in standard 20 foot laying lengths.

5. Gaskets shall meet the requirements of ASTM F477. Gaskets and lubricants shall not adversely affect the potable quality of the water that is to be transported.

6. Pipe O.D. shall be compatible with D.I. pipe size.

7. Detectable warning tape shall be buried approximately one foot above all PVC pipe. Tape shall be 6" wide and read "Buried Water Line". Tape shall be manufactured for below ground applications and contain a core such as aluminum for detection. In addition an 8 gauge bare copper electrical wire shall be fastened to the buried PVC pipe to facilitate electronic pipe locating. The wire shall be fastened at two locations per length and not at any joint.

END OF SECTION

SECTION 02594 - PRESSURE AND LEAKAGE TESTS OF DI WATER MAINS

PART 1: GENERAL

1.1 SCOPE:

A. Furnish all labor, materials, equipment, gages and related items necessary to complete all pressure and leakage tests of all ductile iron (DI) water mains.

PART 2: PRODUCTS

2.1 MATERIALS:

A. Materials shall be at CONTRACTOR's option.

PART 3: EXECUTION

3.1 PRESSURE AND LEAKAGE TESTS:

A. After the pipe has been laid and backfilled, it shall be pressure tested and tested for leakage in the presence of the ENGINEER and/or the OWNER.

B. All tests shall be conducted at a time and in a manner to minimize as much as possible any interference with the operation of the existing water system. The OWNER will supply all water necessary for testing and placing the lines in service. The CONTRACTOR shall supply all labor, materials and equipment necessary to make any necessary connections to the water system and to carry out the tests.

C. The CONTRACTOR shall excavate and provide a corporation tap for pressure and leak testing as directed by the ENGINEER. The CONTRACTOR is responsible for all work associated with the excavation, including proper trench protection, barricades, traffic control and proper backfilling and compaction upon successful completion of the test.

D. The pipe shall be slowly filled with water and all air expelled from the pipe. If permanent air vents are not located at all high points, CONTRACTOR shall install corporation stops at such high points to bleed off air as the line is filled with water.

E. A pressure test pump will be connected to the new main at the testing point. The pressure will be slowly increased to 150 psi and allowed to stabilize (+/-2.5 psi) for a minimum of 15 minutes.

F. A reservoir of potable water shall be connected to the test pump and the initial level of water recorded.

G. The pump pressure shall be maintained at 150 psi for one hour with all make up water withdrawn from the reservoir.

H. After one hour, the water level in the reservoir will be measured and the volume of water drawn from the reservoir calculated and compared with the following allowable leakage:

$$\text{Allowable Leakage (gph)} = \frac{\text{Pipe Length (feet)} \times \text{Nominal Diameter (inches)}}{10{,}876^*}$$

*Correct only for 150 psi test pressure

I. If any test discloses leakage greater than that specified above, the CONTRACTOR shall, at his own expense, locate and make repairs as necessary until the leakage is within the specified allowance.

J. Final acceptance of the lines will not occur until satisfactory tests have been passed.

END OF SECTION

SECTION 02595 - DISINFECTION OF WATER MAINS

PART 1: GENERAL

1.1 SCOPE

A. Furnish all labor, materials, equipment, and incidentals necessary to disinfect the distribution system.

B. Do not disinfect water mains until all testing required by Section 02593 and/or Section 02594 has been satisfactorily completed.

PART 2: PRODUCTS

2.1 MATERIALS:

A. The CONTRACTOR shall chlorinate the new main in accordance with the continuous feed method specified in Section 5.2 of AWWA Standard C651-latest revision, using 5% to 15% sodium hypochlorite solution.

B. The CONTRACTOR may use calcium hypochlorite granules or tablets placed in the new mains during installation in accordance with Section 5.1 of AWWA Standard C651-latest revision, as a supplement to the continuous feed method.

PART 3: EXECUTION

3.1 DISINFECTION:

A. Upon satisfactory completion of the pressure and leak test, all new water mains shall be disinfected before they are placed into service in accordance with Section 5.2 of AWWA Standard C651-latest revision and the procedures specified herein.

3.2 FLUSHING:

A. Section of pipe to be disinfected shall first be flushed to remove any solids or contaminated material that may have become lodged in the pipe. If no hydrant is installed at the end of the main, then a suitably sized tap should be provided.

B. All taps required by the CONTRACTOR for chlorination or flushing purposes, or for temporary release of air, shall be provided by him as part of the construction of the water main.

C. Flushing shall proceed for 4 hours at a flow velocity of 2.5 feet per second.

3.3 REQUIREMENTS OF CHLORINE:

A. Before being placed into service, the main shall be chlorinated so that a chlorine residual of not less than 10 parts per million remains in the water after standing 24 hours in the pipe. Chlorine residual at start of test shall be at least 50 parts per million.

3.4 POINT OF APPLICATION:

A. The preferred point of application of the chlorinating agent is at the beginning of the pipeline or any valved section of it and through a corporation stop inserted in the pipe. The water injector for delivering the chlorine solution water into the pipe should be supplied from a tap made on the pressure side of the gate valve controlling the flow into the pipeline extension. Alternate points of application may be used when accepted or directed by the ENGINEER.

3.5 RATE OF APPLICATION:

A. Water from the distribution system, or other source of supply as accepted by the ENGINEER, shall be controlled to flow very slowly into the newly laid pipeline during application of the chlorine. The rate of chlorine mixture flow shall be in such proportion to the rate of water entering the newly laid pipe that the dosage applied to the water will be sufficient at achieve at least 50 parts per million unless otherwise directed by the ENGINEER.

3.6 PREVENTING REVERSE FLOW:

A. Valves shall be operated by the OWNER so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water. Check valves may be used, if desired.

3.7 RETENTION PERIOD:

A. Treated water shall be retained in the pipe at least 24 hours. After this period, the chlorine residual at pipe extremities and at other representative points shall be at least 10 parts per million.

3.8 CHLORINATING VALVES AND HYDRANTS:

A. In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent and under normal operating pressure.

3.9 FINAL FLUSHING AND TESTING:

A. Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipe at its extremity until the replacement water throughout its length shows, upon tests, that the residual chlorine is not in excess of that to be carried in the system.

B. After flushing, water samples collected from the treated piping system as directed by the ENGINEER, shall show satisfactory bacteriological results. Bacteriological analyses shall be performed by the OWNER.

C. Chlorine residual of water being flushed from the newly laid pipe following chlorination must be neutralized by treating with one of the chemicals listed in the table below.

AMOUNTS OF CHEMICALS REQUIRED TO NEUTRALIZE VARIOUS RESIDUAL CHLORINE CONCENTRATIONS IN 100,000 GALLONS OF WATER*

Residual Chlorine Concentration (mg/L)	Sulphur Dioxide	Sodium Bisulfate	Sodium Sulfite	Sodium Thiosulfate
1	0.8	1.2	1.4	1.2
2	1.7	2.5	2.9	2.4
10	8.3	12.5	14.6	12.0
50	41.7	62.6	73.0	60.0

*Except for residual chlorine concentration, all amounts are in pounds.

3.10 REPETITION OF FLUSHING AND RESULTS:

A. Should the initial disinfection process result in an unsatisfactory bacterial test, the original chlorination procedure shall be repeated by the CONTRACTOR until satisfactory results are obtained.

END OF SECTION

SECTION 02999 – WATER MAIN MATERIALS SPECIFICATIONS

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NOTE:
All installations shall follow manufacturer's recommended procedures unless otherwise noted or directed by PWD personnel.
All materials, products and coating that contact drinking water shall be certified to meet NSF/ANSI Standard 61 – latest revision, Drinking Water System Components – Health Effects.

BOLTS AND NUTS

GENERAL SPECIFICATIONS

General Description of Properties Required:

Stainless Steel: Type 304 – contains the addition of Molybdenum to the nickel-chromium steels.

High Strength/Low Alloy Steel: Trade name for cold formed T-head bolts containing alloying elements such as copper, nickel, and chrome (Cor-Ten).

CAST IRON OR DUCTILE IRON SPLIT REPAIR SLEEVE

GENERAL SPECIFICATIONS

Split repair sleeve shall be mechanical joint.

The side rubber gaskets shall be rectangular to cross-section and shall fit into grooved channels in the casting. These gaskets shall extend the entire length of the sleeve.

Split repair sleeve shall be AB-CD pattern to permit use of plain rubber and duck-tipped gaskets for various O.D. piping sizes.

Mechanical joint with accessories furnished; glands, gaskets and Cor-Ten T-bolts and nuts or equal.

All side bolts shall be Stainless Steel (Type 304) or silicone bronze.

Interior and exterior to be bituminous coated with a minimum of 4 mils D.F.T.

The sleeve shall be provided with a 2” F.I.P.T. test port with brass plug.

APPROVED MANUFACTURERS

All Manufacturers

CORPORATION STOPS

GENERAL SPECIFICATIONS

Conforming to AWWA C-800.

¾” to 2” curb stops shall be ball valve design with brass ball that is teflon coated or brass ball with teflon seats.

The ball shall be supported by seats which are water tight in either direction.

The valve shall have a full port opening.

The body of the corporation stop shall be of heavy duty design.

The valve working pressure shall be 300 p.s.i.

APPROVED MANUFACTURERS

A.Y. McDonald
Cambridge Brass
Ford Meter Box Co.
Mueller Co.

CURB STOPS

GENERAL SPECIFICATIONS

Conforming to AWWA C-800

¾” to 2” curb stops shall be ball valve design with brass ball that is teflon coated or brass ball with teflon seats.

The ball shall be supported by seats which are water tight in either direction.

The valve shall have a full-port opening.

The valve shall open with ¼ turn (90°) with a check or stop.

The valve shall not have a drain.

The valve stem shall have 2 “O” rings and a bronze ring lock which holds the stem solidly in the valve body.

The valve body shall be of heavy duty design.

The valve working pressure shall be 300 p.s.i.

APPROVED MANUFACTURERS

A.Y. McDonald
Cambridge Brass
Ford Meter Box Co.
Mueller Co.

CUT-IN SLEEVE

GENERAL SPECIFICATIONS

The sleeve shall be mechanical joint to plain-end type.

The sleeve shall fit over either AB or CD pattern pipe.

Coatings:
Interior – Seal-coated – AWWA C104-74, min. 4 mils D.F.T.
Exterior – Bituminous coated, min. 4 mils D.F.T.

Mechanical joint accessories shall be furnished:
Glands: Duck-tipped for AB pipe, Plain Gaskets for CD pipe
Cor-Ten tee bolts and nuts

Cut-in sleeves shall have at least one stop-screw in sizes up through 10” and at least 2 stop-screws in 12” size.

The stop-screw “O” ring shall be recessed into the body of the sleeve between stop-screw and body.

APPROVED MANUFACTURERS

Mueller Co.

DUCTILE IRON FITTINGS

INCLUDING BENDS, REDUCERS, OFF-SETS, TEES AND SLEEVES

GENERAL SPECIFICATIONS

Material shall be ASTM A536 latest, grade 70-50-05, in accordance with AWWA C110 (latest revision) for fittings larger than 24" and C153 (latest revision) for fittings 3" thru 24".

Fittings shall be cement lined AWWA C104 (latest revision) or fusion bonded epoxy coated with a 5 mil nominal thickness per AWWA C550 and C116.

Interior seal coated AWWA C104 with minimum of 4 mils dry film thickness.

Exterior bituminous coated, 4 mils minimum dry film thickness or fusion bonded epoxy coated with a 5 mil nominal thickness per AWWA C550 and C116.

Sleeves shall not be cement lined, but shall be bituminous coated inside to 4 mils dry film thickness. All sleeves shall be long body type.

Mechanical joint with accessories furnished: D.I. glands, gaskets, Cor-Ten T-bolts and nuts.

Pressure Ratings:
a) Class 350 pressure rating in accordance with AWWA C153 - 3"-24" sizes.
b) Class 250 pressure rating in accordance with AWWA C110 - 30"-48" sizes.

The "compact design" fittings must provide adequate space for the MJ joint and accessories to be installed without special tools (i.e. Lowell wrench can be used).

APPROVED MANUFACTURERS

All Manufacturers

DUCTILE IRON PIPE

GENERAL SPECIFICATIONS

Ductile iron pipe shall meet requirements of AWWA Standard C-151 (latest revision) and be cement lined and seal coated to meet AWWA Standard C-104 (latest revision).

Joints shall meet requirements of AWWA C-111 (latest revision).

Interior seal coated, bituminous paint oil cut, emulsion not acceptable, thickness minimum of 2 mils dry film thickness.

Exterior bituminous coated with minimum of 2 mils dry film thickness.

Class 52 wall thickness, 4-inch diameter through 12-inch diameter inclusive.

Ductile Iron Pipe with diameters 16-inches and larger shall be approved by PWD.

State nominal laying length and mark shorter lengths near bell.

Mechanical joint pipe to be furnished with gland, gaskets and Cor-Ten bolts and nuts.

APPROVED MANUFACTURERS

American Cast Iron Pipe
Griffin Pipe
U.S. Pipe
Clow Pipe
McWane Pipe
Atlantic States Pipe

FIRE HYDRANT

GENERAL SPECIFICATIONS

The hydrant shall open right.

The operating nut shall:
be D.I. or bronze
be pentagon in shape with dimensions: Top 1-13/16" tapering to 1-7/8" on bottom.

Nozzles shall be:
2 each – 2-1/2” National Standard Thread
1 each – 4-1/2” National Standard Threadbottom.

Port covers shall be supplied without chains and shall have the same size pentagon operator as specified in 3.0(b) above.

Traffic model hydrant with breakaway feature

Barrel length(s) shall be:
6 ft. cover, 6-1/2 ft. bury; or
b) 5-1/2 ft. cover, 6 ft. bury, or
c) 5 ft. cover, 5’-6” bury

Hydrant shoe or base shall have the following:
6" MJ inlet;
5-1/4" valve opening with non-draining bronze seat that is permanently plugged;
valve seat and sub-seat arrangement shall be bronze to bronze;
Horizontal and vertical blocking planes manufactured into hydrant base

Bolts:
all buried mechanical joint bolts and nuts (T-head, etc.) shall be Cor-Ten or equal;
all buried flange joint bolts shall be stainless steel (Type 304) or silicone bronze.

Protective Coatings shall consist of the following:
all paintings and coatings shall be a minimum of 3 mils total dry film thickness, unless noted
the internal area of the hydrant base, which is normally exposed to water and which includes the internal body of hydrant shoes, including lower valve plate, shall be epoxy coated
all internal and external cast iron or ductile iron components shall be coated with an approved bituminous coating, 3 mils minimum
Coatings for upper barrel - exterior:
Surface preparation blast clean SSPC-SP-6
Primer Sherwin Williams Red Oxide E61RC21, 1.5 mils, dry
Finish coat Sherwin Williams – Regal Yellow, F78Y30, 1.5 mils, dry or sufficient paint to hide the second coat
Total dry film thickness - 3 mils minimum.
Coatings for bonnet, operating nut, port cap:
1. Surface preparation: Blast clean, SSPC-SP-6
2. Exterior primer
3. Exterior aluminum
4. Total dry film thickness: 3 mils minimum.

Flow Indicator Collars: PWD personnel shall install flow indicator collars on all new hydrants.

FIELD TEST OF INSTALLED HYDRANT

Hydrant flow shall completely stop with no more than 200 ft. lb. of torque applied to the operating nut.

Failure to shut completely at no more than 200 ft. lb. of torque will be cause for rejection of that hydrant.

APPROVED HYDRANTS

Clow Eddy – with lower stern machined from bar stock
American Darling Models: B62B-1, B62B-5

PIPE JOINT RESTRAINER

GENERAL SPECIFICATIONS

Pipe Restraints:

Use in conjunction with mechanical joint fittings.

The joint restraint ring and its wedging components shall be made of ductile iron conforming to ASTM A536-80.

Dimensions of the restrainer must allow use with standard M.J. bell conforming to AWWA C111 and AWWA C153.

Restrainer must restrain up to 350 psi of working pressure in 3” to 16“ sizes and 250 psi of working pressure in 18” to 48” sizes with a 2:1 safety factor.

Torque limiting twist off nuts shall be used to ensure proper actuation of the restraining wedges (used on a,b,c below).

APPROVED MANUFACTURERS

Sigma Super Lug
Ford Uni-Flange Series 1400
Ebba Mega Lug
Romac Grip Ring
Star Grip Series 300
Romac Romagrip
MJ FIELD LOK Gasket

POLYETHYLENE ENCASEMENT

GENERAL SPECIFICATIONS

Tube type polyethylene encasement shall be installed on all ductile iron pipe and fittings in accordance with AWWA Standard C105 - latest revision, Method A.

Polyethylene encasement shall be either linear low-density polyethylene (LLDPE) film with a minimum thickness of 8-mil or high-density, cross-laminated polyethylene (HDCLPE) film with a minimum thickness of 4-mil.

Circumferential wraps of tape or plastic tie straps shall be placed at 2-ft. intervals along the barrel of the pipe.

The polyethylene encasement shall prevent contact between the pipe and the surrounding backfill and bedding material but is not intended to be a completely airtight or watertight enclosure. All lumps of clay, mud, cinders, and so forth, on the pipe surface shall be removed prior to installation of the polyethylene encasement. During installation, care shall be exercised to prevent soil or embankment material from becoming trapped between the pipe and the polyethylene.

The polyethylene film shall be fitted to the contour of the pipe to effect a snug, but not tight, encasement with minimum space between the polyethylene and the pipe. Sufficient slack shall be provided in contouring to prevent stretching the polyethylene where it bridges irregular surfaces, such as bell-spigot interfaces, bolted joints, or fittings, and to prevent damage to the polyethylene due to backfilling operations. Overlaps and ends shall be secured with adhesive tape, string, plastic tie straps, or any other material capable of holding the polyethylene encasement in place until backfilling operations are complete.

Three layers of polyethylene adhesive tape shall be wrapped around any polywrapped pipe where a tapping machine will be placed. All copper services connected to a pipe wrapped in polyethylene encasement shall be wrapped within three feet of the pipe.

PVC WATER PIPE

GENERAL SPECIFICATIONS

For all water main installations that are less than 4” I.D. (4” and larger use ductile iron), the District will require use of 2” I.D. PVC plastic water pipe meeting the following: Under special site conditions the District does require the use of C-900 PVC in sizes larger than 4”.

Pipe Specifications (2”):

Diameter:
The I.D. shall be a minimum of 2”
The O.D. shall be a maximum of 2.38”
The minimum wall thickness shall be 0.113”

Pressure Rating
The minimum working pressure rating shall be 200 PSI (SDR-21).
The pipe shall conform to standard ASTM 2241.

Pipe Length
The pipe shall be provided in 20’ lengths.
* Shorter lengths may be allowed and/or field cut following manufacturer’s recommended procedures.

Gaskets
The gasket or O-Ring material shall be rubber meeting ASTM F 477 and of the “permanent use” type.

Fittings:

Standard AWWA C900 fittings are not available in the 2” I.D. and therefore “steel pipe” class fittings, or Certa-Lok Yelomine couplings and fittings meeting ASTM D 3139 shall be used.

The normal nomenclature for “steel fittings” is Schedule 40 or Schedule 80, with the respective pressure ratings of 280 PSI and 400 PSI. Both of these fitting classes are acceptable for use.

Service Connections:

All service connections shall be made with tapping saddles* per Portland Water District specifications or by use of tees meeting the above noted fitting specifications.

Installation:

Follow manufacturer’s instructions.

An eight gauge bare copper wire shall be fastened to the buried PVC pipe to facilitate electronic pipe locating. The wire shall be fastened at two locations per length and not at any joint.

The District requires 200 PSI (SDR-14) PVC pipe for other sizes such as 4”, 6”, 8”, and 12”. Pipe shall conform to AWWA C-900.

APPROVED MANUFACTURER / TYPE

J-M Manufacturing - Blue Brute
Certainteed - Yelomine

Victaulic - Aquamine
IPEX – Blue Brute

RESILIENT SEATED GATE VALVE

GENERAL SPECIFICATIONS

Valve shall meet the latest revision of the AWWA C-509 Standard.

Valve shall have a smooth unobstructed water way which shall be a minimum diameter of the valve.

Valve ends to be specified and shall be furnished with Cor-ten (or equal) bolts and nuts.

Valve shall be rated for zero leak rate at 200 psi differential working pressure and have a 400 psi hydrostatic test for structural integrity.

Sealing - Valve shall have a minimum of 2 “O” rings situated such that the “O” rings above the thrust collar can be replaced with the valve under pressure and in the open position.

Stem - Valve stem shall:
a) open right with a stem nut made of grade D,E manganese bronze;
b) be non-rising;
c) be designed with a thrust collar integrally cast to the stem;
d) be designed with two (2) thrust washers, placed one above and one below the stem thrust collar;
e) be constructed of grade D,E manganese bronze;
f) be such that the thrust washers are made of a synthetic polymer with physical properties required.

Valve Body - The body, including the stuffing box and the bonnet, shall be constructed of cast iron or ductile iron, meeting the latest revision of AWWA C-153.

Valve Wedge:
shall be constructed of ductile iron (less guiding mechanism);
shall be fully encapsulated and permanently bonded with a resilient elastomer;
shall be constructed such to allow the flushing of any interior exposed surface during operations.

Coatings:
a) the internal and external valve body, including the stuffing box, bonnet, and interior of the wedge shall be fusion bonded epoxy coated with 8 mils D.F.T.
b) interior shall meet latest version of AWWA C-550.
c) shall be holiday free, interior and exterior, per testing method described in AWWA C-550, Sec. 5.1.

Operating Nut:
a) shall be two (2) inch square ductile iron:
with a countersunk hold down nut (made of 316 stainless steel or silicone bronze). This applies to stems that are tapered; or
with a stainless steel pin inserted thru the stem. This applies to stems of full diameter.

Bolts – The seal plate and bonnet bolts shall be stainless steel (Type 316 or Type 304).

Valves 12” nominal diameter and smaller shall be directly operated by the nut on the valve stem and mounted vertically. Number of turns to open or close shall closely match the formula: (3 x D) + 2. For example, a 12” valve should open or close with approximately (3 x 12) + 2 = 38 turns of the operating nut.

Valves larger than 12” nominal diameter shall be designed to be installed horizontally and shall have bevel gear operators driven by the operating nut. Valves 14” – 24” nominal diameter shall have 4:1 bevel gear operators. Valves with 30” – 36” nominal diameters shall have 6:1 bevel gear operators and valves with 42”

– 48” nominal diameters shall have 8:1 bevel gear operators. Number of turns to open or close shall closely match the formula: ((3 x D) + 2) times the bevel gear ratio. For example, a 24” valve should open or close with approximately ((3 x 24) + 2) x 4 = 296 turns of the operating nut.

GENERAL PROVISIONS

Vendor shall identify any and all exceptions to the specifications.

Vendor shall provide standard brochures for item quoted.

Vendor may be required to supply a valve for inspection and determination of coating process.

APPROVED RESILIENT SEATED GATE VALVES

U.S.P.
AFC Series 2500
Mueller A-2360/61
Clow Series F6100

RESTRAINED JOINT GASKETS

GENERAL SPECIFICATIONS

All accepted restrained joint gaskets in the Portland Water District distribution system shall be rated in accordance with the performance requirements of ANSI/AWWA C111/A21.11.

Required Applications

Any hydrant branch or service with a distance greater than 18’ shall have an approved restrained joint gasket in the bell ends.

Where a casing is required, all joints within the casing shall have an approved restrained joint gasket unless restrained joint pipe is used.

At any time as required by a PWD Engineer.

Any live service tap where there is a joint between the connection and the end of the service.

APPROVED MANUFACTURERS

American Fast-Grip Gasket – American Pipe
Field Lok 350 Gasket – US Pipe

SERVICE BOX AND ROD

GENERAL SPECIFICATIONS

Reference Standard Details

Service Box:

Shall be 1.0” Schedule 40 steel pipe with top having 1.0” N.P.T. pipe threads for screw-on cover or coupling.

Shall be Erie style with 6’ slide-type riser.

Any extension of a service box requires a threaded merchant coupling with no set screw.

Service Box Cover:

Shall be Quincy type (heavy duty) cover that screws on Service Box (1.1 above).

Shall be tapped with a 1” rope thread with a solid brass plug with pentagon operating head.

Service Box Foot Piece:

The standard foot piece shall be heavy duty (Ford style or equal) cast iron design.

The large, heavy-duty foot piece shall have an arch that will fit over 2” ball-valve curb stops.

Service Rod:

Shall have a self aligning design.
36” length for all services.
24” length for air valves.

Shall be round and constructed of stainless steel (304) with an epoxy coating (minimum 4 mil D.F.T.).

Shall have a yoke design that is an integral part of the rod.

The curb-stop attachment pin shall be a brass cotter pin.

The rod “wrench-flat” shall have a minimum thickness of ¼” tapered to 1/16” and width of 5/8” or ½”.

Diameter

a) ½”, ¾” and 1” services use ½” diameter.
b) 1 ½” and 2” services use 5/8” diameter.

SERVICE SADDLES

GENERAL SPECIFICATIONS FOR DUCTILE IRON PIPE

The service saddle shall have the “larger sized” body, the same as associated with the “service repair” saddle, which shall have a minimum diameter of 6 in. and multiple “O” ring type sealing.

The saddle body shall be constructed of epoxy coated ductile iron.

The sealing gasket(s) shall be either Buna-N rubber or SBR rubber (ASTM D2000).

Service saddles shall be installed with all 1 1/2” and 2” corporation stops (cc only).

Approved Manufacturers

Size	Tap	Saddle
2” – 2-1/4”	¾”, 1” cc	Smith-Blair 315, Ford FC 202
4” - 12” D.I.	¾”- 11/2” cc	Smith Blair 331
4” - 12” D.I.	2” cc	Smith-Blair 313
16”	¾”-2” cc	Smith-Blair 313
20” – 36”	¾”-2”cc	Smith-Blair 366

GENERAL SPECIFICATIONS FOR PVC PIPE

1.0 Stainless steel straps will be used on saddles on C-900 PVC Pipe

Approved Manufacturers

Size	Tap	Saddle
2” – 2-1/4”	¾”, 1” cc	Smith-Blair 315, Ford FC 202
4”-12”		Smith-Blair 265

GENERAL SPECIFICATIONS FOR HDPE PIPE

1.0 Spring washers are required for service saddles on HDPE Pipe.

Approved Manufacturer

Size	Tap	Saddle
4”-12”		Smith-Blair 265

STAINLESS STEEL REPAIR CLAMPS

GENERAL SPECIFICATIONS

The sleeve shall be of full circle design, either one piece or two piece, for pipe sizes 2” thru 12”.

Body: Shall be 18-8 stainless steel shell.

Gasket:
Shall be full length and diameter of the body size;
This gasket shall form a multiple O-ring, or grid, sealing barrier for the entire length and circumference;
Shall be virgin SBR rubber (ASTM D2000 AA 415).

Lugs, sidebar, and lifting bar shall be heavy gauge 18-8 stainless steel with TIG/MIG welding and chemical passivation of all welds.

Bolts and Nuts shall be Teflon coated 18-8 heavy gauge stainless steel.

Armor: The armor, or bridging plate between the side bars shall be heavy gauge 18-8 stainless steel bonded to the gasket to bridge the lug area.

APPROVED MANUFACTURERS

All Manufacturers

TAPPING SLEEVES

GENERAL SPECIFICATIONS

For sizes 12” and smaller tapping sleeve shall be ductile iron or approved fabricated steel:

Tapping sleeve shall be mechanical joint with recessed outlet flange for tapping valve.

Tapping sleeve shall conform to AWWA C-207, Class D, with rated maximum working pressure of 200 psi.

The side rubber gaskets shall be rectangular in cross-section and fit into grooved channels in the casting. These gaskets shall extend the entire length of the sleeve and shall not require cutting or trimming to match MJ end gaskets.

Tapping sleeve shall be AB-CD pattern to permit use of plain rubber and duck-tipped gaskets for various O.D. piping sizes.

Mechanical joint with accessories furnished; glands, gaskets, and Cor-Ten T-bolts and nuts or equal.

All flange outlet bolts shall be stainless steel (Type 304).

Interior and exterior to be bituminous coated with a minimum of 4 mils dry film thickness or fusion bonded epoxy coated.

The sleeve shall be provided with a ¾” F.I.P.T. test port and brass lug.

2.0 For sizes 16” and larger tapping sleeve shall be fabricated steel:

2.1 Body and Flange - A-36

2.2 Coating - Fusion-bonded epoxy coating with minimum D.F.T. of 5 mils, inside and out.

2.3 Bolts, Nuts - Stainless Steel (Type 304).

2.4 Gaskets - SBR.

2.5 Flange - AWWA Class D plate flange with ANSI 150# drilling, proper recessing for tapping valves.

2.6 Sleeves shall be provided with 3/4" F.I.P.T. test port and plug.

APPROVED MANUFACTURERS (4”-12”)

AFC
Mueller Co.
U.S. Pipe
Tyler / Union
Powerseal Model 3490 and 3490MJ (Fabricated Steel)

APPROVED MANUFACTURERS (16” and larger)

Romac FTS 420

Ford FTSC
Smith Blair 622
JCM 412
Powerseal Model 3490 and 3490 MJ (up to 24”)
JCM 415 or approved equal (for RCCP pipe only)

VALVE BOXES

GENERAL SPECIFICATIONS

Reference Standard Details

The valve box bottom section shall be slide-type with bell-type base with bottom lip.
Manufacturer: North American Manufacture

The valve box top section shall be slide-type, 36 inches long (minimum). No top flange and no “bead” or bottom flange.
Manufacturer: North American Manufacture

The valve box cover shall be a 2” drop-type cover to fit the 7-1/4” opening of the top section.
Manufacturer: Bibby St-Croix (no substitute)

The valve box intermediate (mid) section shall be slide-type with a minimum 3” belled bottom. Base section No. 645 may be used as an alternate.
Manufacturer: North American Manufacture

Material shall be cast iron or ductile iron free from defects.

Interior and exterior of all components shall be bituminous coated with a minimum of 4 mils dry film thickness.

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.5'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement Brown Fine-Medium Sand and Gravel Trace Silt
								5'	Brown Fine Sand and Silt
								10'	Grey Silty Sand
								15'	Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-401
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		6.8'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									Brown Fine-Medium Sand and Gravel Trace Silt
									Brown Fine Sand and Silt
								5'	
								10'	Grey Silty Sand
								15'	Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-402
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.5'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5" Organic Topsoil Brown Gravelly Fine-Medium Sand Some Silt
								5'	Brown Silty Sand
								10'	Grey Silt Some Sand
								15'	Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-403
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		6.6'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5" Organic Topsoil Brown Gravelly Fine-Medium Sand Some Silt
								5'	Brown Silty Sand
								10'	Grey Silt Some Sand
								15'	Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-404
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.2'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5" Organic Topsoil
								5'	Brown Silty Sand
								10'	
									Grey Silt Some Sand
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-405
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.0'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5" Organic Topsoil
								5'	
									Brown Silty Sand
								10'	
									Grey Silt Some Sand
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-406
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.0'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
								5'	Brown Silty Sand
								10'	
								15'	Grey Silt Some Sand
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-407
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.6'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
								5'	Brown Silty Sand
								10'	
								15'	Grey Silt Some Sand
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-408
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.9'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
								5'	Grey Silt and Sand with Cobbles (Fill)
								10'	
									Brown Sandy Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-409
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		9.1'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
								5'	Grey Silt and Sand with Cobbles (Fill)
								10'	Brown Sandy Silt
								15'	Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-410
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.7'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
								5'	Grey Silt and Sand with Cobbles (Fill)
								10'	
									Brown Sandy Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-411
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.7'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2' Organic Sand
								5'	Brown Sandy Silt
								10'	
								15'	Grey Silt Some Sand
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-412
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.1'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									Grey Sandy Silt with Cobbles (Fill)
								5'	
								10'	Brown Silt Some Sand
								15'	Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-413
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.4'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									Grey Sandy Silt with Cobbles (Fill)
								5'	
								10'	Brown Silt Some Sand
								15'	Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-414
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation	
Type	SSA	SS		8.2'	
Size	4"	1 3/8"		Start Date:	Finish Date:
Hammer Wt.		140		5/8/14	5/8/14
Hammer Fall		30"			

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5.5" Pavement
									Brown Fine-Medium Sand and Gravel Trace Silt
								5'	
									Brown Silt Some Sand
								10'	
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-415
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.9'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									6" Topsoil
								5'	Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-416
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.2'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									6" Topsoil
								5'	Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-417
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.6'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									6" Topsoil
								5'	Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-418
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.6'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									6" Topsoil
								5'	Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-418
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.1'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									6" Topsoil
								5'	Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-419
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.9'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									6" Topsoil
								5'	Brown Silt Some Sand
								10'	
								15'	Grey Clayey Silt
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-420
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.5'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									6" Topsoil
								5'	Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-421
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		6.9'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2.5" Pavement
									Brown Sand and Gravel Trace Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-501
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation	
Type	SSA	SS		7.5'	
Size	4"	1 3/8"		Start Date:	Finish Date:
Hammer Wt.		140		5/8/14	5/8/14
Hammer Fall		30"			

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement
									Brown Sand and Gravel Trace Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-502
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.9'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement Brown Sand and Gravel Trace Silt
								5'	
									Brown Silt and Sand
								10'	
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-503
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.5'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5" Pavement Brown Sand and Gravel Trace Silt
									Brown Fine Sand Some Silt
								5'	
								10'	Brown Silt and Sand
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-504
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.7'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement Brown Sand and Gravel Trace Silt
								5'	
								10'	Brown Silt and Sand
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-505
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		6.9'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2.5" Pavement Brown Sand and Gravel Trace Silt
								5'	
								10'	Brown Silt and Sand
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-506
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.3'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2.5" Pavement Brown Sand and Gravel Trace Silt
								5'	
								10'	Brown Silt and Sand
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-507
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.0'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement Brown Sand and Gravel Trace Silt
								5'	
								10'	Brown Silt and Sand
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-508
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.8'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5" Pavement
									Brown Sand and Gravel Trace Silt
								5'	
								10'	Brown Silt and Sand
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-509
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.3'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3.5" Pavement
									Brown Sand and Gravel Trace Silt
									Brown Silty Sand
								5'	
									Grey Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-510
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.3'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3.5" Pavement Brown Sand and Gravel Trace Silt
									Brown Silty Sand
								5'	
									Grey Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-510
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.6'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									4" Pavement
									Brown Sand and Gravel Trace Silt
									Brown Silty Sand
								5'	
									Brown Clayey Silt
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-511
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation	
Type	SSA	SS		8.3'	
Size	4"	1 3/8"		Start Date:	Finish Date:
Hammer Wt.		140		5/8/14	5/8/14
Hammer Fall		30"			

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3.5" Pavement
									Brown Sand and Gravel Trace Silt
									Brown Silty Sand
								5'	
									Brown Clayey Silt
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-512
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.7'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3.5" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-513
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.8'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3.25" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Silty Sand
								10'	Grey Clayey Silt
								15'	Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-514
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.1'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5" Pavement
									Brown Sand and Gravel Trace Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-601
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.7'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5" Pavement
									Brown Sand and Gravel Trace Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-602
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.3'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									6" Pavement
									Brown Sand and Gravel Trace Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-603
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.9'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									6" Pavement
									Brown Sand and Gravel Trace Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-604
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.5'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5.75" Pavement
									Brown Sand and Gravel Trace Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-605
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.9'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5.5" Pavement
									Brown Sand and Gravel Trace Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-606
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.3'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5.5" Pavement
									Brown Sand and Gravel Trace Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-607
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.0'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2" Pavement
									Brown Sand and Gravel Trace Silt
									Brown Fine Sand Some Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Sandy Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-701
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.3'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2" Pavement
									Brown Sand and Gravel Trace Silt
									Brown Fine Sand Some Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Sandy Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-702
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.6'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2.5" Pavement
									Brown Sand and Gravel Trace Silt
									Brown Fine Sand Some Silt
								5'	
									Brown Silty Sand
								10'	
									Grey Sandy Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-703
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
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: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement Brown Sand and Gravel Trace Silt
									Brown Fine Sand Some Silt
								5'	
									Bottom of Exploration @ 6.9' (Auger Refusal) Bedrock Surface possible Boulder
								10'	
								15'	
								20'	
								25'	
								30'	

Boring #: B-704
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		8.3'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Fine Sand Some Silt
									Brown Silt Some Sand
								10'	Grey Silty Sand Some Gravel (Glacial Till)
								15'	Bottom of Exploration @ 13.5' (Auger Refusal) Bedrock Surface possible Boulder
								20'	
								25'	
								30'	

Boring #: B-705
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		6.7'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement Brown Sand and Gravel Trace Silt
									Brown Fine Sand Some Silt
								5'	
									Grey Silty Sand Some Gravel (Glacial Till)
									Bottom of Exploration @ 7.4' (Auger Refusal) Bedrock Surface possible Boulder
								10'	
								15'	
								20'	
								25'	
								30'	

Boring #: B-706
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
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		5/8/14 5/8/14
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement Brown Sand and Gravel Trace Silt
									Bottom of Exploration @ 3.1' (Auger Refusal) Bedrock Surface possible Boulder
								5'	
								10'	
								15'	
								20'	
								25'	
								30'	

Boring #: B-707
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.5'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Fine Sand Some Silt
									Brown Silt Some Sand
								10'	
									Grey Silty Sand Some Gravel (Glacial Till)
								15'	Bottom of Exploration @ 14.9' (Auger Refusal) Bedrock Surface possible Boulder
								20'	
								25'	
								30'	

Boring #: B-708
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation	
Type	SSA	SS		7.5'	
Size	4"	1 3/8"		Start Date:	Finish Date:
Hammer Wt.		140		5/8/14	5/8/14
Hammer Fall		30"			

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Fine Sand Some Silt
									Brown Silt Some Sand
								10'	Grey Silty Sand Some Gravel (Glacial Till)
								15'	Bottom of Exploration @ 12.7' (Auger Refusal) Bedrock Surface possible Boulder
								20'	
								25'	
								30'	

Boring #: B-709
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.1'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2.75" Pavement
									Brown Sand and Gravel Trace Silt
								5'	
									Grey Silty Sand Some Gravel (Glacial Till)
									Bottom of Exploration @ 8.4' (Auger Refusal)
								10'	Bedrock Surface possible Boulder
								15'	
								20'	
								25'	
								30'	

Boring #: B-710
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
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: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									4" Pavement
									Brown Sand and Gravel Trace Silt
									Brown Silty Sand Some Gravel (Glacial Till)
								5'	Bottom of Exploration @ 4.9' (Auger Refusal) Bedrock Surface possible Boulder
								10'	
								15'	
								20'	
								25'	
								30'	

Boring #: B-711
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
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: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									4" Pavement Brown Sand and Gravel Trace Silt
									Weathered Rock
								5'	Bottom of Exploration @ 3.9' (Auger Refusal) Bedrock Surface possible Boulder
								10'	
								15'	
								20'	
								25'	
								30'	

Boring #: B-712
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
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		5/8/14 5/8/14
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									4" Pavement Brown Sand and Gravel Trace Silt
									Bottom of Exploration @ 2.6' (Auger Refusal) Bedrock Surface possible Boulder
								5'	
								10'	
								15'	
								20'	
								25'	
								30'	

Boring #: B-713
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
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		5/8/14 5/8/14
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									4" Pavement
									Brown Sand and Gravel Trace Silt
									Bottom of Exploration @ 3.2' (Auger Refusal)
									Bedrock Surface possible Boulder
								5'	
								10'	
								15'	
								20'	
								25'	
								30'	

Boring #: B-714
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
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		5/8/14 5/8/14
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									4" Pavement
									Brown Sand and Gravel Trace Silt
									Bottom of Exploration @ 2.7' (Auger Refusal)
									Bedrock Surface possible Boulder
								5'	
								10'	
								15'	
								20'	
								25'	
								30'	

Boring #: B-715
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
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: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3.5" Pavement Brown Sand and Gravel Trace Silt
									Bottom of Exploration @ 3.3' (Auger Refusal) Bedrock Surface possible Boulder
								5'	
								10'	
								15'	
								20'	
								25'	
								30'	

Boring #: B-716
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
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: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3.3" Pavement Brown Sand and Gravel Trace Silt
									Bottom of Exploration @ 2.2' (Auger Refusal) Bedrock Surface possible Boulder
								5'	
								10'	
								15'	
								20'	
								25'	
								30'	

Boring #: B-717
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
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		5/8/14 5/8/14
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement Brown Sand and Gravel Trace Silt
									Bottom of Exploration @ 1.6' (Auger Refusal) Bedrock Surface possible Boulder
								5'	
								10'	
								15'	
								20'	
								25'	
								30'	

Boring #: B-718
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.7'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									5" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Sandy Silt
								10'	
								15'	Grey Clayey Silt Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-801
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.1'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Sandy Silt (Strong Petroleum Odor)
								10'	
								15'	Grey Clayey Silt Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-802
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.4'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Sandy Silt (Petroleum Odor)
								10'	
								15'	Grey Clayey Silt
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-803
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.2'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									4" Pavement
									Brown Sand and Gravel Trace Silt
									Brown Fine Sand Some Silt
								5'	
									Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-804
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.8'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									4" Pavement
									Brown Sand and Gravel Trace Silt
									Brown Fine Sand Some Silt
								5'	
									Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-805
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.8'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									4.5" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Silt Some Sand (Light Petroleum Odor)
									Grey Sandy Silt
								10'	
								15'	Grey Clayey Silt Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-806
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.4'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Silt Some Sand (Light Petroleum Odor)
									Grey Sandy Silt
								10'	
								15'	Grey Clayey Silt
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-807
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.9'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2" Pavement
									Brown Sand and Gravel Trace Silt
								5'	Brown Silt Some Sand (Light Petroleum Odor)
									Grey Sandy Silt
								10'	
								15'	Grey Clayey Silt
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-808
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.3'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									4" Pavement
									Brown Sand and Gravel Trace Silt
									Brown Silty Sand
								5'	
									Brown Sandy Silt
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-809
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.8'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Silty Sand
									Brown Sandy Silt
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-810
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.2'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									4" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Silty Sand
									Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-811
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.0'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									3.5" Pavement
									Brown Sand and Gravel Trace Silt
									Brown Silty Sand
								5'	
									Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-812
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.8'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
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 Sand
								5'	
									Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-813
Sheet: 1 of 1

Northern Test Boring, Inc. Boring Log

Client: City of Portland	Project Name: Morse Street Sewer Separation
Location: Portland, Me	Driller: Mike Nadeau

	Casing	Sample	Core	Ground Water Observation
Type	SSA	SS		7.3'
Size	4"	1 3/8"		Start Date: 5/8/14 Finish Date: 5/8/14
Hammer Wt.		140		
Hammer Fall		30"		

No.	Pen	Rec	Sample Depth	Sample Blow Counts				Depth	Stratum Description
									2" Pavement Brown Sand and Gravel Trace Silt
								5'	Brown Medium-Coarse Sand Some Silt
									Brown Silt Some Sand
								10'	
									Grey Clayey Silt
								15'	
									Bottom of Exploration @ 15' (No Refusal)
								20'	
								25'	
								30'	

Boring #: B-814
Sheet: 1 of 1