

CITY OF SALEM



**Kimberley Driscoll, Mayor
Kathleen Winn, Deputy Director,
Department of Planning and Community Development**

PROJECT MANUAL BID AND CONTRACT DOCUMENTS

**Project Title: Fort Pickering Site Improvements
Prepared By: Kyle Zick Landscape Architecture, Inc.
Preparation Date: 09/23/15**

City of Salem



Invitation for Bids

R-28

Fort Pickering Site Improvements

September 23, 2015

BIDS DUE:

Thursday, October 8, 2015, 2:00 PM

*Late bids will be rejected

Whitney C. Haskell
Purchasing Agent
93 Washington Street, 2nd Floor
Salem, MA 01970
whaskell@salem.com
(978) 619-5695

**FORT PICKERING SITE IMPROVEMENTS
R-28
COVER SHEET**

PLEASE PRINT OR TYPE:

Name of Bidder:	Contact Individual:			
Address:				
#	Street	City/Town	State	Zip Code
Phone:	Alternate Phone:			
Email Address:	Social Security/Federal Tax Identification Number:			
Authorized Signature: _____				

FORT PICKERING SITE IMPROVEMENTS
R-28
BIDDER'S CHECKLIST

Submissions:

Please Check:

- Completed Cover Sheet
- Bidder's Checklist (this sheet)
- Bid Form
- Signed Certificate of Non-Collusion
- Signed Tax Compliance Certification
- Certificate as to Corporate Bidder
- Reference Form
- 5% Bid Deposit
- Prevailing Wage Certification
- Debarment Certification
- Labor Harmony and OSHA Certification
- List of Similar Project/References
- Acknowledgement of Addenda: _____ (*if applicable*)
(#s)

**FORT PICKERING SITE IMPROVEMENTS
R-28
BID FORM**

BASE BID

General – Demolition / Site Preparation

Construction fencing, erosion control, feature removal, place CPA sign

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Vegetation Clearing

Bid item #1 – clear woody plants around wet ditches

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Bid item #2 – cut, herbicide, & remove phragmites

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Bid item #3 – cut & remove dense shrubs, small trees

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Bid item #3 – remove 1-3 ~20” trees

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Bid item #4 – remove 5-10, ~8” trees

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Bid item #5 – cut & remove thick stand sumac

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Bid item #6 – remove 5-10, ~8” trees

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Bid item #7 – cut, herbicide, and remove phragmites

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Earthwork

Remove fill pile & vegetation (assuming 2ft depth)

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Planting

Topsoil & Seeding

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Magazine Inspection & Repairs

Opening gates, replacing gates, magazine cleaning, repairing masonry

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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TOTAL BASE BID

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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ADD ALTERNATE – Stonedust Path Construction

General - Demolition / Site Preparation

Remove & discard gravel, strip turf & topsoil

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Site Improvement

Construct stonedust path

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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Planting

Topsoil near path (assuming 3") & seeding

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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TOTAL ADD ALTERNATE

\$ _____ (figures)	_____ DOLLARS AND _____ CENTS. (written)
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*In the event of a discrepancy, the written amount will control.

Signature of Authorized Representative

Name (printed)

Date

FORT PICKERING SITE IMPROVEMENTS
R-28
REQUIRED CERTIFICATIONS

1. NON-COLLUSION

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

(Signature of authorized individual submitting proposal)

(Printed Name)

(Name of Bidder (if different than name))

(Federal Tax Identification or Social Security Number)

(Date)

2. TAX COMPLIANCE

Pursuant to M.G.L. c. 62C, §49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

(Signature of authorized individual submitting proposal)

(Printed Name)

(Name of Bidder (if different than name))

(Federal Tax Identification or Social Security Number)

(Date)

3. CORPORATE AUTHORITY (if applicable)

I, _____ certify that I am the _____ of the corporation named as Bidder in the Bid included herein, that _____, who signed said Bid on behalf of the Bidder was then _____ of said corporation, that I know his signature, that his signature thereon is genuine and that said Bid was duly signed, sealed and executed for and in behalf of said corporation by authority of its governing body.

(Corporate Seal)

(Secretary-Clerk)

(Signature of authorized individual submitting proposal)

(Printed Name)

(Name of Bidder (if different than name))

(Federal Tax Identification or Social Security Number)

(Date)

4. PREVAILING WAGES

The undersigned bidder or quoter hereby certifies, under the pains and penalties of perjury, that the foregoing bid or quote is based upon the payment to laborers employed on the project of wages in an amount no less than the applicable prevailing wage rates established for the project by the Massachusetts Department of Labor and Workforce Development. The undersigned bidder or quoter agrees to indemnify the awarding authority for, from and against any loss, expenses, damages, action or claims, including any expense incurred in connection with any delay or stoppage of the project work, arising out of or as a result of (1) the failure of the said bid or quote to be based upon the payment of the said applicable prevailing wage rates, or (2) the failure of the bidder or quoter, if selected as the Contractor, to pay laborers employed on the project the said applicable prevailing wages.

(Signature of authorized individual submitting proposal)

(Printed Name)

(Name of Bidder (if different than name))

(Federal Tax Identification or Social Security Number)

(Date)

5. DEBARRMENT

The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

(Signature of authorized individual submitting proposal)

(Printed Name)

(Name of Bidder (if different than name))

(Federal Tax Identification or Social Security Number)

(Date)

6. LABOR HARMONY AND OSHA TRAINING

The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations applicable to awards made subject to section 44A.

(Signature of authorized individual submitting proposal)

(Printed Name)

(Name of Bidder (if different than name))

(Federal Tax Identification or Social Security Number)

(Date)

REFERENCE FORM *(Attach additional sheets as necessary.)*

(1) Reference Name (Contact Person):		City/Town/Company:	
Address:			
Phone:	Fax:	Email:	
Dates of Services Provided: ____ / ____ / ____ to ____ / ____ / ____			
Description of Services Provided:			

(2) Reference Name (Contact Person):		City/Town/Company:	
Address:			
Phone:	Fax:	Email:	
Dates of Services Provided: ____ / ____ / ____ to ____ / ____ / ____			
Description of Services Provided:			

(3) Reference Name (Contact Person):		City/Town/Company:	
Address:			
Phone:	Fax:	Email:	
Dates of Services Provided: _____ / _____ / _____ to _____ / _____ / _____			
Description of Services Provided:			

PART 1. GENERAL INFORMATION

1.1 PROCUREMENT DESCRIPTION

The historic features of Fort Pickering are currently obscured by vegetation and in disrepair. The work will include cutting, herbiciding, and removing much vegetation, including invasive shrubs and vines and phragmites in sensitive wetland areas. Some small to medium sized trees will be removed as well, along with small site features such as concrete blocks and wood edging. The steel gates on historic stone and brick magazines will be removed, repaired, and reset. Finally, an accessible stonedust path will be constructed to connect visitors to the historic magazines.

The estimated value is \$86,000.00.

1.2 APPLICABLE LAW

This procurement will be conducted pursuant to Massachusetts General Laws Chapter 30, Section 39M.

1.3 APPROVAL

Any contract that may result from the procurement shall be subject to the approval of the Mayor of the City of Salem.

1.4 INCORPORATION BY REFERENCE

All requirements, specifications, terms and conditions described in this Invitation for Bids shall be incorporated by reference into any contract that may result.

1.5 TIME FOR AWARD

Any contract that may result from the procurement shall be awarded within thirty (30) days after the bid opening. The Contractor must agree to hold its bid prices firm for that period.

1.6 RIGHT TO CANCEL/REJECT

The City reserves the right to cancel this Invitation for Bids or reject in whole or in part any and all bids if the City determines that cancellation or rejection serves the best interests of the City.

1.7 TAXATION

Purchases made by the City are exempt from the payment of Federal excise tax and the payment of Commonwealth of Massachusetts sales tax and any such taxes must not be included in the bid pricing.

Copies of the City's tax exempt paperwork shall be available upon request of the selected contractor.

1.8 OBTAINING THE INVITATION FOR BIDS

The Invitation for Bids shall be available beginning, Wednesday, September 23, 2015.

The Invitation for Bids and related documents shall be available for free download from the City's Purchasing Department website at http://saalem.com/Pages/SalemMA_Purchasing/index under the link titled "IFBs, RFPs, RFQs."

Hardcopies of the Invitation for Bids and related documents may be obtained at the Office of the Purchasing Agent, 93 Washington Street, 2nd Floor, Salem, Massachusetts 01970, between the hours of 8:00 AM-4:00 PM on Monday-Wednesday, 8:00-7:00 PM on Thursday, and 8:00 AM-12:00 PM on Friday.

1.9 PRE-BID CONFERENCE

A pre-bid site will take place on September 29, 2015 at Fort Pickering, Winter Island, Salem, MA

PART 2. INSTRUCTIONS FOR BIDDERS

2.1 REQUIREMENTS AND SUBMISSIONS

Below please find a description of the requirements and submissions that must be included as part of a bid. Bids must be sealed and marked as noted.

2.1.1 BID FORM

Every bid must include a completed 'Bid Form'. See attached. All material, equipment and labor is F.O.B. City of Salem.

2.1.2 NON-COLLUSION

Every bid must include a certification of good faith, certifying that the bid was made in good faith and without collusion or fraud. See 'Non-Collusion Form' attached.

2.1.3 TAX COMPLIANCE

Every bid must include a written certification that the bidder has complied with all state laws relating to taxes, reporting of employees and contractors, and child support. See 'Tax Compliance Form' attached.

2.1.4 CORPORATE BIDDER

If the bid is being submitted by a corporation, the bid must include a certification that the individual submitting the bid has been authorized to bind the corporation. See 'Certificate of Corporate Authority' attached.

2.1.5 REFERENCE FORM

Every bid must be accompanied by at least three (3) professional references.

2.1.6 BID DEPOSIT

Each bid must be accompanied by a deposit equal to five percent (5%) of the amount of the bid. The bid deposit may be in the form of a certified treasurer's or cashier's check payable to the City of Salem from a responsible bank or trust company; cash; or a bid bond.

2.1.7 PAYMENT BOND

The selected contractor shall be required to furnish a Payment Bond in the amount of fifty percent (50%) of the contract price, within ten days of the date of notification of the contract award.

2.1.8 PREVAILING WAGE

Wages for this project are subject to the prevailing wage rates as set by the Department of Labor Standards. A copy of the prevailing wage rates for this project is included in the Invitation for Bids, along with a Payroll Record Form and Statement of Compliance.

In the event that the option to renew is exercised, an updated prevailing wage rate sheet will be sent to the Contractor along with the contract amendment letter.

Certified Weekly Payroll documents shall be sent to the Office of the Purchasing Agent, 93 Washington Street, 2nd Floor, Salem, MA 01970. Payroll records must be sent three (3) business days after the close of the previous work week. See ‘Certification Regarding Payment of Prevailing Wage Rates’ attached.

2.1.9 DEBARMENT

Every bid must include a certification regarding the contractor’s debarment status. A debarred contractor is not eligible for the award of public contracts during the period of its debarment. See ‘Certification Regarding Debarment’ attached.

2.1.10 LABOR HARMONY AND OSHA CERTIFICATION

Every bid must include a certification regarding labor harmony training approved by the U.S. Occupation Safety and Health Administration completed by all employees to be employed at the worksite. See ‘Labor Harmony and OSHA Certification’ attached.

2.2 BID DELIVERY

Below please find a description of the manner in which sealed bids must be submitted.

2.2.1 DUE DATE AND TIME

Bids shall be received by the Office of the Purchasing Agent on or before **2:00 PM on Thursday, October 8, 2015.**

Any bid received after that time shall be rejected as non-responsive.

2.2.2 ADDRESS

Sealed bids shall be delivered to the Office of the Purchasing Agent, 93 Washington Street, 2nd Floor, Salem Massachusetts 01970.

2.2.3 HOURS OF OPERATION

Bids must be delivered during the normal hours of operation of the City of Salem:

Monday-Wednesday:	8:00 AM-4:00 PM
Thursday:	8:00 AM-7:00 PM
Friday:	8:00 AM-12:00 PM

2.2.4 COPIES

Bidders must submit one (1) original and one (1) copy of the bid.

2.2.5 LABELING

The outside of the envelope containing the sealed bid must be labeled with 1) the bid number 2) the bid opening date and time and 3) the name of the bidder.

2.3 SIGNATURES

A bid must be signed as follows: 1) if the bidder is an individual, by her/him personally; 2) if the bidder is a partnership, by the name of the partnership, followed by the signature of each general partner; and 3) if the bidder is a corporation, by the authorized officer, whose signature must be attested to by the clerk/secretary of the corporation, and with the corporate seal affixed.

2.4 QUESTIONS, CHANGES, MODIFICATIONS AND WITHDRAWALS

2.4.1 QUESTIONS/REQUESTS FOR CLARIFICATION

Questions concerning this Invitation for Bids must be submitted in writing to: Whitney Haskell at whaskell@salem.com at least five (5) days prior to the bid opening date. Written responses will be mailed to all bidders on record as having picked up the Invitation for Bids.

2.4.2 CHANGES

If any changes are made to this Invitation for Bids, addenda will be issued. Addenda will be posted in the Office of the Purchasing Agent, on the website and e-mailed to all bidders on record as having picked up the Invitation for Bids.

2.4.3 MODIFICATIONS AND WITHDRAWALS

A bidder may correct, modify, or withdraw a bid by written notice received by the City of Salem prior to the time and date set for bid opening.

Modifications must be submitted in a sealed envelope clearly labeled "Modification No. ___" to the address listed in part one of this section. Each modification must be numbered in sequence, and must reference the Invitation for Bids.

After the bid opening a bidder may not change any provision of the bid in a manner prejudicial to the interests of the City or fair competition. Minor informalities will be waived or the bidder will be allowed to correct them. If a mistake and the intended bid are clearly evident on the face of the bid document, the mistake will be corrected to reflect the intended correct bid, and the bidder will be notified in writing; the bidder may not withdraw the bid. A bidder may withdraw a bid if a mistake is clearly evident on the face of the bid document, but the intended correct bid is not similarly evident.

2.5 UNFORESEEN OFFICE CLOSURES

If, at the time of the scheduled bid opening, 93 Washington Street, 2nd Floor, Salem, MA 01970, is closed due to uncontrolled events such as fire, snow, ice, wind, or building evacuation, the bid opening will be postponed until 2:00 PM on the next normal business day. Bids will be accepted until that date and time.

2.6 BID OPENING PROCEDURE

At the time and place fixed for opening of bids, the City will cause to be opened and publicly read aloud every bid received within the time set for receiving bids, irrespective of any irregularities therein. Bidders and other persons properly interested may be present, in person or by representative.

PART 3. SPECIFICATIONS

3.1 SPECIFICATIONS

PART 4. EVALUATION AND SELECTION

4.2 RULE FOR AWARD

Any contract that results from the procurement shall be awarded to the lowest responsible and eligible bidder, offering the lowest price on the "Bid Form."

PART 5. TERMS AND CONDITIONS

5.1 TERM OF CONTRACT

The performance period for any contract that results from this Invitation for Bids shall commence on or around October 1, 2015 to January 1, 2016.

5.2 ASSIGNMENTS AND SUBCONTRACTING

The selected vendor shall not assign, sell, subcontract or otherwise transfer any interest in this contract without the prior written consent of the City. The successful bidder shall be fully responsible to the City for the acts and omissions of his subcontractor, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

5.4 INSURANCE REQUIREMENTS

General- The Vendor shall before commencing performance of the Contract be responsible for providing and maintaining insurance coverage in force for the life of the Contract of the kind and in adequate amounts to secure all of the obligations under the Contract and with insurance companies licensed to write insurance in the Commonwealth of Massachusetts. All such insurance carried shall not be less than the kinds and amounts designated herein, and the Vendor agrees that the stipulation herein of the kinds and limits of coverage shall in no way limit the liability of the Vendor to any such kinds and amounts of insurance coverage. All policies issued shall indemnify and save harmless the City of Salem, its agents and employees from any and all claims for damages to persons or property as may rise out of the performance of this Contract.

Vendor's Comprehensive General Public Liability and Property Damage Liability Insurance - The Vendor shall carry Comprehensive General Liability Insurance providing for a limit of not less than Five Hundred Thousand Dollars (\$500,000.00) for all damages arising out of bodily injury to or death of one person, and subject to that limit for each person, a total limit of not less than One Million Dollars (\$1,000,000.00) for all damages arising out of bodily injuries or death of two or more persons in any one accident; and Vendor's Comprehensive Property Damage Liability Insurance providing for a limit of not less than Five Hundred Thousand Dollars (\$500,000.00) for all damages arising out of injury to or destruction of property in any one accident, and subject to that limit per accident, a total (or aggregate) limit or not less than One Million Dollars (\$1,000,000.00) for all damages arising out of injury to or destruction of property during the policy period.

Comprehensive Automotive and Property Damage Insurance - The Vendor shall carry Automobile Insurance covering all owned vehicles, hired vehicles or non-owned vehicles under the control of the Vendor while performing work under the Contract in the amount of not less than Five Hundred Thousand Dollars (\$500,000.00) for all damages arising out of bodily injuries to or death of one person and subject to that limit for each person, a total of not less than One Million Dollars (\$1,000,000.00) for all damages arising out of bodily injuries to or death of two or more persons in any one accident; and Property Damage coverage in the amount of not less than Five Hundred Thousand Dollars (\$500,000.00) for all damages to or destruction of property.

The Vendor must carry Workman's Compensation Insurance in the amounts prescribed under Massachusetts State Law and meet all other City and State Laws and Regulations.

No cancellation(s) of such insurance, whether by the insurer or by the insured party shall be valid unless written notice thereof is given by the parties proposing cancellation to the other party and to the City of Salem at least fifteen (15) days prior to the intended effective date thereof, which date shall be expressed in said notice, which shall be sent by registered mail, return receipt requested. These provisions shall apply to the legal representative(s), trustee in bankruptcy, receiver, assignee, trustee, and successor(s) in interest of the Vendor.

All insurance coverage shall be at the sole expense of the Vendor and shall be placed with such company as may be acceptable to the City of Salem and shall constitute a material part of the contract documents.

Failure to provide written proof to City and continue in force such insurance as aforesaid shall be deemed a material breach of the contract, and may constitute sufficient grounds for immediate termination of the same.

5.5 CHANGE ORDERS AND ADJUSTMENTS

Any request for a change order or adjustment must be submitted in writing and contain, an explanation of the need for the change order, a statement of work including a cost breakdown of each addition, and a statement that the change order is in the best interest of the awarding authority. The City is not obligated to pay for change orders that are not approved in writing, by the original contract signatories. Three (3) copies of the change order shall be required.

5.6 INDEMNIFICATION

Unless otherwise provided by law, the Vendor will indemnify and hold harmless the City against any and all liability, loss, damages, costs or expenses for personal injury or damage to real or tangible personal property which the City may sustain, incur or be required to pay, arising out of or in connection with the performance of the Contract by reason of any negligent action/inaction or willful misconduct by the Contractor, its agents, servants or employees.

5.7 FEDERAL AND STATE LAW

The selected contractor shall comply with all applicable Federal, State and Local laws and ordinances.

5.8 STATEMENT OF WORK

Except as otherwise specifically stated in the bid and contract documents the selected contractor shall secure, at its own expense, all necessary permits and licenses and comply with all city and state codes and regulations. The selected contractor shall provide and pay for all materials, equipment, labor, tools, temporary construction of every nature, charges, levies, fees, or other expenses incurred and all other services and facilities of every nature whatsoever for his performance of the Contract within the specified time, and required for this project. The selected contractor must provide all materials and equipment free of any lien, claim or encumbrance.

5.9 SAMPLE CONTRACT

See 'Sample Contract' attached.

SAMPLE CONTRACT

CONTRACT NO. X-XX
SCCS Kitchen Plumbing
CITY OF SALEM
CONTRACT FOR SERVICES
Over \$10,000

This agreement is made and entered into by and between the City of Salem (hereinafter the CITY), a municipal corporation organized and existing under the laws of the Commonwealth of Massachusetts, and _____ (hereinafter the CONTRACTOR).

ARTICLE I. DEFINITION.

This CONTRACT as used herein shall mean these articles, and the “contract documents” which include but are not limited to the following identified items and all documents, and forms submitted therewith, or attached hereby.

- Attachment A: Scope of Services, and/or other bid package materials
- Attachment B: Additional Contract Terms and Conditions
- Attachment C: Statement of Corporate Authority
- Addenda: _____

ARTICLE II. AMOUNT AND DURATION.

This CONTRACT in an amount not to exceed \$_____ shall commence on or about _____ and shall terminate no later than _____, unless a written amendment to renew or extend this CONTRACT is executed in accordance with the provisions of this CONTRACT.

ARTICLE III. PERFORMANCE.

The Contractor agrees to provide all goods and/or services set forth in Invitation for Bids, Documents, Scope of Services, and the CONTRACTOR’s bid _____ and/or as outlined in ATTACHMENT A - SCOPE OF SERVICES.

ARTICLE IV. TERMINATION.

Without Cause. The CITY may terminate this CONTRACT on sixty (60) calendar days notice, or may suspend this CONTRACT for up to sixty (60) calendar days upon receipt of notice, when in the best interests of the City by providing notice to the CONTRACTOR, which shall be in writing and shall be deemed delivered and received when given in person to the CONTRACTOR, or when received by fax, express mail, certified mail return receipt requested, regular mail postage prepaid or delivered by any other appropriate method evidencing actual receipt by the CONTRACTOR.

For Cause. If the CONTRACTOR is determined by the CITY to be in default of any term or condition of CONTRACT, the CITY may terminate this contract on thirty (30) days notice by providing notice to the CONTRACTOR, which shall be in writing and shall be deemed delivered and received when given in person to the CONTRACTOR, or when received by fax, express mail, certified mail return receipt requested, regular mail postage prepaid or delivered by any other appropriate method evidencing actual receipt by the CONTRACTOR. If the CITY is determined by the CONTRACTOR to be in default of any term or condition of this CONTRACT the CONTRACTOR may terminate this contract on thirty (30) days notice by providing notice to the CITY, which shall be in writing and shall be deemed delivered and received when given in person to the CITY, or when received by fax, express mail, certified mail return receipt requested, regular mail postage prepaid or delivered by any other appropriate method evidencing actual receipt by the CITY.

Default. The following shall constitute events of default under this CONTRACT: a) any material misrepresentation made by the CONTRACTOR to the CITY, b) any failure to perform any of its obligations under this CONTRACT including, but not limited to the following: (i) failure to commence performance of this CONTRACT at the time specified in this CONTRACT due to a reason or circumstance within the CONTRACTOR’S reasonable control, (ii) failure to perform this CONTRACT with sufficient personnel and equipment or with sufficient material to ensure the completion of this CONTRACT within the specified time due to a reason or circumstance within the

CONTRACTOR'S reasonable control, (iii) failure to performance this CONTRACT in a manner reasonably satisfactory to the CITY, (iv) failure to promptly re-perform with reasonable time the services that were rejected by the CITY as unsatisfactory, or erroneous, (v) discontinuance of the services for reasons not beyond the CONTRACTOR'S reasonable control, (vi) failure to comply with a material term of this CONTRACT, including, but not limited to, the provision of insurance and nondiscrimination, and (vii) any other acts specifically and expressly stated in this CONTRACT as constituting a basis for termination of this CONTRACT, and (viii) failure to comply with any and all requirements of state law, and/or regulations, and City ordinances, and/or regulations.

ARTICLE V. REMEDIES OF THE CITY.

The CITY may deduct the cost of any substitute contract or performance for expenses, losses, and all damages, including incidental and consequential damages as a result of any event of non-conformance or non-performance of the CONTRACTOR in complying with the terms of this CONTRACT, and shall withhold such expenses, losses, and damages from sums due, or to become due.

ARTICLE VI. REMEDIES OF THE CONTRACTOR.

If the damages, other than loss, non-conformance, or non-performance, are actually sustained by the CONTRACTOR due to any act or omission for which the CITY is legally responsible the CITY shall allow a sum equal to the amount of such damages sustained by the Contractor as determined by the CITY in writing, provided the Contractor shall have provided to all signatories of the contract a detailed written statement of such damages and cause thereof within 30 days of the act of omission by the CITY.

ARTICLE VII. ASSIGNABILITY.

The CONTRACTOR shall not assign, subcontract or in any way transfer any interest in this contract without the prior written consent of the Procurement Officer of said City. In the event of such occurrence the City reserves the right to deal with any assignee subcontractor or transferee directly and the contractor agrees to remain bound by all terms and conditions of this contract in accordance with its original tenor. The provisions of this CONTRACT shall be binding upon, and shall inure to the benefit of, the successors and assigns of the CONTRACTOR and any public body or bodies succeeding the interests of the CITY.

ARTICLE VIII. INDEMNIFICATION.

The CONTRACTOR shall assume the defense, indemnify and hold harmless the CITY, the CITY'S agents and employees, from and against all losses and all claims, demands, payments, suits, actions, recoveries and judgments of every nature and description brought or recovered against them by reason of acts, in actions, omissions, negligence, reckless or intentional misconduct of the said CONTRACTOR, its agent(s), officers, employees, or subcontractors; in the execution of the work or in guarding the same. Unless otherwise provided by law, the CITY may elect to indemnify the CONTRACTOR for claims arising in tort if it is determined that the CONTRACTOR performed its obligations under this CONTRACT pursuant to the direct supervision and control of the CITY or its designated agent(s).

ARTICLE IX. WORKER'S COMPENSATION AND OTHER INSURANCE.

The CONTRACTOR shall provide by insurance for the payment of compensation and the furnishing of other benefits under Chapter 152 of the General Laws of Massachusetts (The Worker's Compensation Act) to all employees of the CONTRACTOR who are subject to the provisions of Chapter 152 of the General Laws of Massachusetts.

Failure to provide and continue in force such insurance during the period of this contract shall be deemed a material breach of this contract, shall operate as an immediate termination thereof, and CONTRACTOR shall indemnify the CITY for all losses, claims, and actions resulting from the failure to provide the insurance required by this Article. Prior to commencement of any work and until completion of its work under this CONTRACT shall maintain the following insurance coverage, at its cost, from insurance acceptable to the CITY, giving evidence of such coverage to the CITY prior to execution of this CONTRACT, a copy of such insurance coverage to be attached herewith:

General - The Vendor shall before commencing performance of the Contract be responsible for providing and maintaining insurance coverage in force for the life of the Contract of the kind and in adequate amounts to secure all of the obligations under the Contract and with insurance companies licensed to write insurance in the Commonwealth of Massachusetts. All such insurance carried shall not be less than the kinds and amounts designated herein, and the Vendor agrees that the stipulation herein of the kinds and limits of coverage shall in no way limit the liability of the Vendor to any such kinds and amounts of insurance coverage. All policies issued shall indemnify and save harmless the City of Salem, its agents and employees from any and all claims for damages to persons or property as may rise out of the performance of this Contract.

Vendor's Comprehensive General Public Liability and Property Damage Liability Insurance - The Vendor shall carry Comprehensive General Liability Insurance providing for a limit of not less than Five Hundred Thousand Dollars (\$500,000.00) for all damages arising out of bodily injury to or death of one person, and subject to that limit for each person, a total limit of not less than One Million Dollars (\$1,000,000.00) for all damages arising out of bodily injuries or death of two or more persons in any one accident; and Vendor's Comprehensive Property Damage Liability Insurance providing for a limit of not less than Five Hundred Thousand Dollars (\$500,000.00) for all damages arising out of injury to or destruction of property in any one accident, and subject to that limit per accident, a total (or aggregate) limit or not less than One Million Dollars (\$1,000,000.00) for all damages arising out of injury to or destruction of property during the policy period.

Comprehensive Automotive and Property Damage Insurance - The Vendor shall carry Automobile Insurance covering all owned vehicles, hired vehicles or non-owned vehicles under the control of the Vendor while performing work under the Contract in the amount of not less than Five Hundred Thousand Dollars (\$500,000.00) for all damages arising out of bodily injuries to or death of one person and subject to that limit for each person, a total of not less than One Million Dollars (\$1,000,000.00) for all damages arising out of bodily injuries to or death of two or more persons in any one accident; and Property Damage coverage in the amount of not less than Five Hundred Thousand Dollars (\$500,000.00) for all damages to or destruction of property.

The Vendor must carry Workman's Compensation Insurance in the amounts prescribed under Massachusetts State Law and meet all other City and State Laws and Regulations.

No cancellation(s) of such insurance, whether by the insurer or by the insured party shall be valid unless written notice thereof is given by the parties proposing cancellation to the other party and to the City of Salem at least fifteen (15) days prior to the intended effective date thereof, which date shall be expressed in said notice, which shall be sent by registered mail, return receipt requested. These provisions shall apply to the legal representative(s), trustee in bankruptcy, receiver, assignee, trustee, and successor(s) in interest of the Vendor.

All insurance coverage shall be at the sole expense of the Vendor and shall be placed with such company as may be acceptable to the City of Salem and shall constitute a material part of the contract documents.

Failure to provide written proof to City and continue in force such insurance as aforesaid shall be deemed a material breach of the contract, and may constitute sufficient grounds for immediate termination of the same.

All required insurance must be endorsed to name the CITY as Additional Insured. All required insurance shall be endorsed to waive the insurer's rights of subrogation against the City. All policies and certificate for insurance must contain language that the insurance shall not be canceled, materially changed or non-renewed without at least thirty (30) days advance written notice to the CITY. The CONTRACTOR under this CONTRACT shall not allow its subcontractors to begin work until similar insurance has been so obtained and certificates of insurance approved by the CONTRACTOR.

ARTICLE X. CORPORATE CONTRACTOR.

If CONTRACTOR is a corporation, CONTRACTOR shall endorse the Certificate of Corporate Authority for the CONTRACTORS' signatory (Attachment C), or shall otherwise provide a form similar in nature and substance acceptable to the CITY.

If CONTRACTOR is a non-profit corporation, CONTRACTOR shall provide satisfactory proof of present status as a non-profit corporation. Such proof shall be in the form of a certification from the Massachusetts Secretary of State's office and/or from the Internal Revenue Service and shall provide the Federal Tax Identification Number of the non-profit corporation. This agreement shall not be enforceable against the CITY unless and until the CONTRACTOR complies with this section. Failure to inform the CITY in writing of revocation, or other loss of non-profit status shall be deemed a material breach of this contract and operate as an immediate termination thereof.

ARTICLE XI. SUBJECT TO APPROPRIATION.

The obligations of the CITY under this CONTRACT shall be subject to appropriation. In the absence of appropriation this CONTRACT shall be immediately terminated without liability for damages, penalties, or other charges.

In the requisite circumstances, the obligations of the CITY under this CONTRACT shall be subject to the formal award of the state, federal grant.

ARTICLE XII. DOCUMENTS, MATERIALS, ETC.

Any materials, reports, information, data, etc. given to or prepared or assembled by the CONTRACTOR under this CONTRACT are to be kept confidential and shall not be made available to any individual or organization by the CONTRACTOR (except agents, servants, or employees of the CONTRACTOR) without the prior written approval of the CITY, except as otherwise required by law. The CONTRACTOR understands that he/she/it may acquire or have access to "personal data" otherwise kept by the CITY. The CONTRACTOR shall comply with the provisions Chapter 66A of the General Laws of Massachusetts as it relates to public documents, and all other state and federal laws and regulations relating to confidentiality, security privacy and use of confidential data.

Any materials produced in whole or in part under this CONTRACT shall not be subject to copyright, except by the CITY, in the United States or any other country. The CITY shall have unrestricted authority to, without payment of any royalty, commission, or additional fee of any type or nature, publicly disclose, reproduce, distribute and otherwise use, and authorize other to use, in whole or in part, any reports, data or other materials prepared under this CONTRACT.

All data, reports, programs, software, equipment, furnishings, and any other documentation or product paid for by the CITY shall vest in the CITY at the termination of this CONTRACT. The CONTRACTOR shall at all times, during or after termination of this CONTRACT, obtain the prior written approval of the CITY before making any statement bearing on the work performed or data collected under this CONTRACT to the press or issues any material for publication through any medium.

ARTICLE XIII. AUDIT, INSPECTION, RECORD KEEPING.

At any time during normal business hours, and as often as the CITY may deem it reasonably necessary, there shall be made available in the office of the CONTRACTOR for the purpose of audit, examination, and/or to make excerpts or transcripts, all records, contracts, invoices, materials, payrolls, records of personnel, conditions of employment and other data relating to all matters covered by this agreement.

Further the CONTRACTOR agrees to make its work papers, records and other evidence of audit available to the CITY for a period of three years after final payment under his CONTRACT. The CITY shall be entitled to reproduce any or all such documents at its own expense, for which provision shall be made at such time.

ARTICLE XIV. WEEKLY PAYROLL RECORDS REPORT.

In accordance with Massachusetts General Law c. 149, s. 27B, a true and accurate record must be kept of all individuals employed on a public works construction project for which prevailing wage rates are applicable.

In addition, every contractor and subcontractor is required to submit, on a weekly basis, a copy of their weekly payroll records to the awarding authority. Once collected, the awarding authority is also required to preserve those records for three years.

ARTICLE XV. CONFLICT OF INTEREST.

CITY. No officer, member or employee of the CITY and no members of its governing body who exercise any function or responsibility in review or approval of the undertaking or carrying out of this CONTRACT shall participate in any decision relating to the CONTRACT which affects his/her personal interests or the interest of any corporation, partnership, or association in which he/she has a direct or indirect pecuniary interest. None of the services to be provided by the CONTRACTOR shall be used for any partisan political activity or further the election or defeat of any candidate for political office in the CITY. Compliance with this section shall be material to the CONTRACT.

CONTRACTOR. CONTRACTOR agrees that his/her/its agents, servants, and employees have neither presently nor during the period of this CONTRACT any interest direct or indirect which would impair, detract, or conflict in any manner or degree with the performance of services required under this CONTRACT. The CONTRACTOR, his/her/its agents, servants or employees further stipulates that in the performance of this CONTRACT, no person having any such interest shall be employed. Conflicts of Interest include but are not limited to (a) immediate family relationships with officials of the CITY, (b) instances where the CONTRACTOR, his/her/it agents, servants or employees during the period of this CONTRACT was connected as an officer, employee or member of the governing body of the CITY, and (c) instances where the CONTRACTOR has an interest in any CITY department, its agents, servants or employees or parcels of land within the CITY. Compliance with this section shall be material to the CONTRACT.

ARTICLE XVI. PAYMENT.

The CITY agrees to make all reasonable efforts to pay to the CONTRACTOR the sum set forth in the CONTRACTOR'S bid or proposal within thirty (30) days of receipt of an invoice at the Office of the City Auditor detailing the work completed.

Subject to pending statutory appeal rights, CONTRACTOR agrees that all sums otherwise due and payable to the CITY for outstanding taxes, fines, fees and or other municipal charges may be deducted from the sum(s) otherwise payable under this CONTRACT prior to disbursement to the CONTRACTOR.

ARTICLE XVII. CONFLICT.

In the event there is a conflict between these Articles and Attachment A. Attachment A shall supersede these Articles.
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ARTICLE XVIII. WAIVER AND AMENDMENT.

The provisions contained in this CONTRACT may be modified only as specifically provided by ATTACHMENT B - ADDITIONAL TERMS AND CONDITIONS. Amendments, or waivers of any additional term, condition, covenant, duty or obligation contained in this CONTRACT may be made only by written amendment executed by all signatories to the original agreement, prior to the effective date of the amendment.

To the extent allowed by law, all conditions, duties, and obligations contained in this CONTRACT may be waived only by written agreement by both parties.

Forbearance or indulgence in any form or manner by a party shall not be construed as a waiver, nor in any manner limit the legal or equitable remedies available to that party. No waiver by either party of any default or breach shall constitute a waiver of any subsequent default or breach of a similar or different matter.

ARTICLE XIX. CERTIFICATION.

IN WITNESS WHEREOF, THE CONTRACTOR CERTIFIES, UNDER THE PAINS AND PENALTIES OF PERJURY, THAT THE CONTRACTOR IS IN COMPLIANCE WITH EACH OF THE FOLLOWING:

TAXES. PURSUANT to M.G.L. c. 62C, s. 49A, the CONTRACTOR has filed all state tax returns and complied with all laws of the Commonwealth relating to taxes.

DEBARMENT. The CONTRACTOR is not currently debarred or suspended by the Commonwealth of Massachusetts, or any of its entities or subdivisions.

AMERICANS WITH DISABILITIES ACT. The CONTRACTOR is aware of the recently enacted Americans with Disabilities Act which prohibits discrimination based upon disability and shall meet any relevant standards, and/or conditions set out in the bid/proposal documents, bid/proposal specifications, and/or ATTACHMENT A - SCOPE OF SERVICES.

ARTICLE XX. FORUM AND CHOICE OF LAW

This CONTRACT and any performance herein shall be governed by and be construed in accordance with the laws of Commonwealth. Any and all proceedings or actions relating to subject matter herein shall be brought and maintained in the courts of the Commonwealth or the federal district court sitting in the Commonwealth, which shall have exclusive jurisdiction thereof. This paragraph shall not be construed to limit any other legal rights of the parties.

IN WITNESS WHEREOF the parties have hereto and to three other identical instruments set forth their hands the day and year first above written.

THE CITY:

THE CONTRACTOR:

Kimberley Driscoll,
Mayor

Authorized Signature

Whitney Haskell,
Purchasing Agent

Approved as to form:

Elizabeth Rennard, Esq.,
City Solicitor

Approved as Contract Manager:

I certify that funds have been encumbered
in the amount of : \$

Sarah Stanton,
Finance Director

Print Name

Print Title

Company

Status (Corporate/Non- Corporate)

Taxpayer Identification Number

Date

ATTACHMENT A

SCOPE OF SERVICES

INSTRUCTIONS FOR DEPARTMENT AND CONTRACTOR: Please attach for reference purposes a copy of all bid/proposal documents, including but not limited to (i) invitations/instructions for bidders (ii) invitation/instructions for proposers, (iii) general and specific conditions, and please provide a detailed description of all types of goods and/or services that will be provided pursuant to this CONTRACT, not otherwise provided in any bid/proposal instructions, specifications, conditions or other documents.

ATTACHMENT B

ADDITIONAL CONTRACT TERMS AND CONDITIONS

INSTRUCTIONS FOR DEPARTMENTS: *Please specify any additions or modifications to the terms and conditions (not to conflict with the public procurement laws or City ordinances or regulations):*

ATTACHMENT C

CERTIFICATE OF CORPORATE AUTHORITY

If the Contractor is a corporation, complete the following certification:

At a duly authorized meeting of the Board of Directors of the _____ (Name of the Corporation) held on _____ (Date), at which all the Directors were present or waived notice, it was voted that, _____ (Name), _____ (Officer) of this company, is authorized to execute Contracts and bonds in the name and behalf of said company, and affix its corporate seal thereto, and such execution of any Contract or obligation in this company's name on its behalf by such _____ (Officer) of the company, shall be valid and binding upon this company.

I hereby certify that I am the Clerk of the _____ (Name of the Corporation), that _____ (Name) is the duly elected _____ (Officer) of said company, and that the above vote has not been amended or rescinded and remains in full force and effect as of the date of the Contract.

A true copy,

Attest: _____
(Clerk)

Place of Business: _____

Corporate Seal:

PREVAILING WAGE RATES



**THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS**

Prevailing Wage Rates

**As determined by the Director under the provisions of the
Massachusetts General Laws, Chapter 149, Sections 26 to 27H**

RONALD L. WALKER, II
Secretary

WILLIAM D MCKINNEY
Director

CHARLES D. BAKER
Governor

KARYN E. POLITO
Lt. Governor

Awarding Authority: City of Salem
Contract Number: R-28 **City/Town:** SALEM
Description of Work: Fort Pickering Site - cutting, herbiciding, and removing much vegetation. Some small to medium sized trees will be removed along with small site features such as concrete blocks and wood edging.
Job Location: Fort Pickering, Salem, MA 01970

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the “Wage Request Number” on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule from the Department of Labor Standards (“DLS”) if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or any sub-contractor.
- All apprentices working on the project are required to be registered with the Massachusetts Division of Apprentice Standards (DAS). Apprentice must keep his/her apprentice identification card on his/her person during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **If an apprentice rate is not listed on the prevailing wage schedule for the trade in which an apprentice is registered with the DAS, the apprentice must be paid the journeyworker's rate for the trade.**
- The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule. Awarding authorities are required to request these updates no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. For multi-year CM AT RISK projects, awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. Contractors are required to obtain the wage schedules from awarding authorities, and to pay no less than these rates to covered workers. The annual update requirement is not applicable to 27F “rental of equipment” contracts.
- Every contractor or subcontractor which performs construction work on the project is required to submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee’s name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. A sample of a payroll reporting form may be obtained at <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may report the violation to the Fair Labor Division of the office of the Attorney General at (617) 727-3465.
- Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and criminal penalties.

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$31.65	\$10.41	\$9.33	\$0.00	\$51.39
	12/01/2015	\$31.65	\$10.41	\$10.08	\$0.00	\$52.14
	06/01/2016	\$32.15	\$10.41	\$10.08	\$0.00	\$52.64
	08/01/2016	\$32.15	\$10.91	\$10.08	\$0.00	\$53.14
	12/01/2016	\$32.15	\$10.91	\$10.89	\$0.00	\$53.95
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$31.72	\$10.41	\$9.33	\$0.00	\$51.46
	12/01/2015	\$31.72	\$10.41	\$10.08	\$0.00	\$52.21
	06/01/2016	\$32.22	\$10.41	\$10.08	\$0.00	\$52.71
	08/01/2016	\$32.22	\$10.91	\$10.08	\$0.00	\$53.21
	12/01/2016	\$32.22	\$10.91	\$10.89	\$0.00	\$54.02
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$31.84	\$10.41	\$9.33	\$0.00	\$51.58
	12/01/2015	\$31.84	\$10.41	\$10.08	\$0.00	\$52.33
	06/01/2016	\$32.34	\$10.41	\$10.08	\$0.00	\$52.83
	08/01/2016	\$32.34	\$10.91	\$10.08	\$0.00	\$53.33
	12/01/2016	\$32.34	\$10.91	\$10.89	\$0.00	\$54.14
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$88.29	\$9.80	\$19.23	\$0.00	\$117.32
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	12/01/2015	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	06/01/2016	\$32.90	\$7.30	\$12.30	\$0.00	\$52.50
	12/01/2016	\$33.65	\$7.30	\$12.30	\$0.00	\$53.25
For apprentice rates see "Apprentice- LABORER"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	06/01/2015	\$33.43	\$10.40	\$5.95	\$0.00	\$49.78
	12/01/2015	\$34.38	\$10.40	\$5.95	\$0.00	\$50.73
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75
For apprentice rates see "Apprentice- LABORER"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$14.55	\$0.00	\$67.38
	12/01/2015	\$44.08	\$10.00	\$14.55	\$0.00	\$68.63
	06/01/2016	\$44.83	\$10.00	\$14.55	\$0.00	\$69.38
	12/01/2016	\$46.08	\$10.00	\$14.55	\$0.00	\$70.63
	06/01/2017	\$47.08	\$10.00	\$14.55	\$0.00	\$71.63
	12/01/2017	\$48.08	\$10.00	\$14.55	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$14.55	\$0.00	\$67.38
	12/01/2015	\$44.08	\$10.00	\$14.55	\$0.00	\$68.63
	06/01/2016	\$44.83	\$10.00	\$14.55	\$0.00	\$69.38
	12/01/2016	\$46.08	\$10.00	\$14.55	\$0.00	\$70.63
	06/01/2017	\$47.08	\$10.00	\$14.55	\$0.00	\$71.63
	12/01/2017	\$48.08	\$10.00	\$14.55	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	12/01/2015	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	06/01/2016	\$32.90	\$7.30	\$12.30	\$0.00	\$52.50
	12/01/2016	\$33.65	\$7.30	\$12.30	\$0.00	\$53.25
For apprentice rates see "Apprentice- LABORER"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2015	\$40.32	\$6.97	\$16.21	\$0.00	\$63.50
	01/01/2016	\$41.62	\$6.97	\$16.21	\$0.00	\$64.80
	01/01/2017	\$42.92	\$6.97	\$16.21	\$0.00	\$66.10

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$26.21	\$6.97	\$10.54	\$0.00	\$43.72
2	65	\$26.21	\$6.97	\$10.54	\$0.00	\$43.72
3	70	\$28.22	\$6.97	\$11.35	\$0.00	\$46.54
4	75	\$30.24	\$6.97	\$12.16	\$0.00	\$49.37
5	80	\$32.26	\$6.97	\$12.97	\$0.00	\$52.20
6	85	\$34.27	\$6.97	\$13.78	\$0.00	\$55.02
7	90	\$36.29	\$6.97	\$14.59	\$0.00	\$57.85
8	95	\$38.30	\$6.97	\$15.40	\$0.00	\$60.67

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$27.05	\$6.97	\$10.54	\$0.00	\$44.56
2	65	\$27.05	\$6.97	\$10.54	\$0.00	\$44.56
3	70	\$29.13	\$6.97	\$11.35	\$0.00	\$47.45
4	75	\$31.22	\$6.97	\$12.16	\$0.00	\$50.35
5	80	\$33.30	\$6.97	\$12.97	\$0.00	\$53.24
6	85	\$35.38	\$6.97	\$13.78	\$0.00	\$56.13
7	90	\$37.46	\$6.97	\$14.59	\$0.00	\$59.02
8	95	\$39.54	\$6.97	\$15.40	\$0.00	\$61.91

Notes:

Apprentice to Journeyworker Ratio:1:5

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (LYNN)</i>	08/01/2015	\$49.86	\$10.18	\$18.57	\$0.00	\$78.61
	02/01/2016	\$50.43	\$10.18	\$18.57	\$0.00	\$79.18
	08/01/2016	\$51.33	\$10.18	\$18.65	\$0.00	\$80.16
	02/01/2017	\$51.90	\$10.18	\$18.65	\$0.00	\$80.73

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Lynn

Effective Date - 08/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.93	\$10.18	\$18.57	\$0.00	\$53.68
2	60	\$29.92	\$10.18	\$18.57	\$0.00	\$58.67
3	70	\$34.90	\$10.18	\$18.57	\$0.00	\$63.65
4	80	\$39.89	\$10.18	\$18.57	\$0.00	\$68.64
5	90	\$44.87	\$10.18	\$18.57	\$0.00	\$73.62

Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.22	\$10.18	\$18.57	\$0.00	\$53.97
2	60	\$30.26	\$10.18	\$18.57	\$0.00	\$59.01
3	70	\$35.30	\$10.18	\$18.57	\$0.00	\$64.05
4	80	\$40.34	\$10.18	\$18.57	\$0.00	\$69.09
5	90	\$45.39	\$10.18	\$18.57	\$0.00	\$74.14

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER	06/01/2015	\$42.42	\$10.00	\$14.55	\$0.00	\$66.97
<i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.66	\$10.00	\$14.55	\$0.00	\$68.21
	06/01/2016	\$44.41	\$10.00	\$14.55	\$0.00	\$68.96
	12/01/2016	\$45.64	\$10.00	\$14.55	\$0.00	\$70.19
	06/01/2017	\$46.63	\$10.00	\$14.55	\$0.00	\$71.18
	12/01/2017	\$47.62	\$10.00	\$14.55	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CAISSON & UNDERPINNING BOTTOM MAN	06/01/2015	\$36.20	\$7.30	\$13.40	\$0.00	\$56.90
<i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2015	\$36.95	\$7.30	\$13.40	\$0.00	\$57.65
	06/01/2016	\$37.70	\$7.30	\$13.40	\$0.00	\$58.40
	12/01/2016	\$38.70	\$7.30	\$13.40	\$0.00	\$59.40
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING LABORER	06/01/2015	\$35.05	\$7.30	\$13.40	\$0.00	\$55.75
<i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2015	\$35.80	\$7.30	\$13.40	\$0.00	\$56.50
	06/01/2016	\$36.55	\$7.30	\$13.40	\$0.00	\$57.25
	12/01/2016	\$37.55	\$7.30	\$13.40	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN	06/01/2015	\$35.05	\$7.30	\$13.40	\$0.00	\$55.75
<i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2015	\$35.80	\$7.30	\$13.40	\$0.00	\$56.50
	06/01/2016	\$36.55	\$7.30	\$13.40	\$0.00	\$57.25
	12/01/2016	\$37.55	\$7.30	\$13.40	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75
For apprentice rates see "Apprentice- LABORER"						
CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2015	\$35.75	\$9.80	\$16.48	\$0.00	\$62.03

Apprentice - CARPENTER - Zone 2 Eastern MA

Effective Date - 03/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.88	\$9.80	\$1.63	\$0.00	\$29.31
2	60	\$21.45	\$9.80	\$1.63	\$0.00	\$32.88
3	70	\$25.03	\$9.80	\$11.59	\$0.00	\$46.42
4	75	\$26.81	\$9.80	\$11.59	\$0.00	\$48.20
5	80	\$28.60	\$9.80	\$13.22	\$0.00	\$51.62
6	80	\$28.60	\$9.80	\$13.22	\$0.00	\$51.62
7	90	\$32.18	\$9.80	\$14.85	\$0.00	\$56.83
8	90	\$32.18	\$9.80	\$14.85	\$0.00	\$56.83

Notes:

Apprentice to Journeyworker Ratio:1:5

CEMENT MASONRY/PLASTERING <i>BRICKLAYERS LOCAL 3 (LYNN)</i>	07/01/2015	\$45.82	\$10.90	\$18.71	\$1.30	\$76.73
	01/01/2016	\$46.44	\$10.90	\$18.71	\$1.30	\$77.35

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Lynn)

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.91	\$10.90	\$12.21	\$0.00	\$46.02
2	60	\$27.49	\$10.90	\$13.71	\$1.30	\$53.40
3	65	\$29.78	\$10.90	\$14.71	\$1.30	\$56.69
4	70	\$32.07	\$10.90	\$15.71	\$1.30	\$59.98
5	75	\$34.37	\$10.90	\$16.71	\$1.30	\$63.28
6	80	\$36.66	\$10.90	\$17.71	\$1.30	\$66.57
7	90	\$41.24	\$10.90	\$18.71	\$1.30	\$72.15

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.22	\$10.90	\$12.21	\$0.00	\$46.33
2	60	\$27.86	\$10.90	\$13.71	\$1.30	\$53.77
3	65	\$30.19	\$10.90	\$14.71	\$1.30	\$57.10
4	70	\$32.51	\$10.90	\$15.71	\$1.30	\$60.42
5	75	\$34.83	\$10.90	\$16.71	\$1.30	\$63.74
6	80	\$37.15	\$10.90	\$17.71	\$1.30	\$67.06
7	90	\$41.80	\$10.90	\$18.71	\$1.30	\$72.71

Notes:

Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

Apprentice to Journeyworker Ratio:1:3

CHAIN SAW OPERATOR LABORERS - ZONE 2	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75

For apprentice rates see "Apprentice- LABORER"

CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES OPERATING ENGINEERS LOCAL 4	06/01/2015	\$43.83	\$10.00	\$14.55	\$0.00	\$68.38
	12/01/2015	\$45.08	\$10.00	\$14.55	\$0.00	\$69.63
	06/01/2016	\$45.83	\$10.00	\$14.55	\$0.00	\$70.38
	12/01/2016	\$47.08	\$10.00	\$14.55	\$0.00	\$71.63
	06/01/2017	\$48.08	\$10.00	\$14.55	\$0.00	\$72.63
	12/01/2017	\$49.08	\$10.00	\$14.55	\$0.00	\$73.63

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

COMPRESSOR OPERATOR OPERATING ENGINEERS LOCAL 4	06/01/2015	\$29.61	\$10.00	\$14.55	\$0.00	\$54.16
	12/01/2015	\$30.48	\$10.00	\$14.55	\$0.00	\$55.03
	06/01/2016	\$31.00	\$10.00	\$14.55	\$0.00	\$55.55
	12/01/2016	\$31.87	\$10.00	\$14.55	\$0.00	\$56.42
	06/01/2017	\$32.56	\$10.00	\$14.55	\$0.00	\$57.11
	12/01/2017	\$33.25	\$10.00	\$14.55	\$0.00	\$57.80

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DELEADER (BRIDGE) PAINTERS LOCAL 35 - ZONE 2	07/01/2015	\$48.56	\$7.85	\$16.10	\$0.00	\$72.51
	01/01/2016	\$49.51	\$7.85	\$16.10	\$0.00	\$73.46
	07/01/2016	\$50.46	\$7.85	\$16.10	\$0.00	\$74.41
	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.28	\$7.85	\$0.00	\$0.00	\$32.13
2	55	\$26.71	\$7.85	\$3.66	\$0.00	\$38.22
3	60	\$29.14	\$7.85	\$3.99	\$0.00	\$40.98
4	65	\$31.56	\$7.85	\$4.32	\$0.00	\$43.73
5	70	\$33.99	\$7.85	\$14.11	\$0.00	\$55.95
6	75	\$36.42	\$7.85	\$14.44	\$0.00	\$58.71
7	80	\$38.85	\$7.85	\$14.77	\$0.00	\$61.47
8	90	\$43.70	\$7.85	\$15.44	\$0.00	\$66.99

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.76	\$7.85	\$0.00	\$0.00	\$32.61
2	55	\$27.23	\$7.85	\$3.66	\$0.00	\$38.74
3	60	\$29.71	\$7.85	\$3.99	\$0.00	\$41.55
4	65	\$32.18	\$7.85	\$4.32	\$0.00	\$44.35
5	70	\$34.66	\$7.85	\$14.11	\$0.00	\$56.62
6	75	\$37.13	\$7.85	\$14.44	\$0.00	\$59.42
7	80	\$39.61	\$7.85	\$14.77	\$0.00	\$62.23
8	90	\$44.56	\$7.85	\$15.44	\$0.00	\$67.85

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN LABORERS - ZONE 2	06/01/2015	\$35.25	\$7.30	\$13.20	\$0.00	\$55.75
	12/01/2015	\$36.00	\$7.30	\$13.20	\$0.00	\$56.50
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 2	06/01/2015	\$36.25	\$7.30	\$13.20	\$0.00	\$56.75
	12/01/2015	\$37.00	\$7.30	\$13.20	\$0.00	\$57.50
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS LABORERS - ZONE 2	06/01/2015	\$36.00	\$7.30	\$13.20	\$0.00	\$56.50
	12/01/2015	\$36.75	\$7.30	\$13.20	\$0.00	\$57.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 2	06/01/2015	\$36.25	\$7.30	\$13.20	\$0.00	\$56.75
	12/01/2015	\$37.00	\$7.30	\$13.20	\$0.00	\$57.50
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR LABORERS - ZONE 2	06/01/2015	\$36.00	\$7.30	\$13.20	\$0.00	\$56.50
	12/01/2015	\$36.75	\$7.30	\$13.20	\$0.00	\$57.25

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	06/01/2015	\$35.25	\$7.30	\$13.20	\$0.00	\$55.75
	12/01/2015	\$36.00	\$7.30	\$13.20	\$0.00	\$56.50
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$14.55	\$0.00	\$66.97
	12/01/2015	\$43.66	\$10.00	\$14.55	\$0.00	\$68.21
	06/01/2016	\$44.41	\$10.00	\$14.55	\$0.00	\$68.96
	12/01/2016	\$45.64	\$10.00	\$14.55	\$0.00	\$70.19
	06/01/2017	\$46.63	\$10.00	\$14.55	\$0.00	\$71.18
	12/01/2017	\$47.62	\$10.00	\$14.55	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$58.86	\$9.80	\$19.23	\$0.00	\$87.89
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$63.06	\$9.80	\$19.23	\$0.00	\$92.09
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$88.23	\$9.80	\$19.23	\$0.00	\$117.26
DRAWBRIDGE OPERATOR (Construction) <i>ELECTRICIANS LOCAL 103</i>	09/01/2015	\$45.67	\$13.00	\$15.89	\$0.00	\$74.56
	03/01/2016	\$46.17	\$13.00	\$16.39	\$0.00	\$75.56
For apprentice rates see "Apprentice- ELECTRICIAN"						
ELECTRICIAN <i>ELECTRICIANS LOCAL 103</i>	09/01/2015	\$45.67	\$13.00	\$15.89	\$0.00	\$74.56
	03/01/2016	\$46.17	\$13.00	\$16.39	\$0.00	\$75.56

Apprentice - ELECTRICIAN - Local 103

Effective Date - 09/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.27	\$13.00	\$0.55	\$0.00	\$31.82
2	40	\$18.27	\$13.00	\$0.55	\$0.00	\$31.82
3	45	\$20.55	\$13.00	\$11.86	\$0.00	\$45.41
4	45	\$20.55	\$13.00	\$11.86	\$0.00	\$45.41
5	50	\$22.84	\$13.00	\$12.23	\$0.00	\$48.07
6	55	\$25.12	\$13.00	\$12.58	\$0.00	\$50.70
7	60	\$27.40	\$13.00	\$12.95	\$0.00	\$53.35
8	65	\$29.69	\$13.00	\$13.32	\$0.00	\$56.01
9	70	\$31.97	\$13.00	\$13.69	\$0.00	\$58.66
10	75	\$34.25	\$13.00	\$14.06	\$0.00	\$61.31

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.47	\$13.00	\$0.55	\$0.00	\$32.02
2	40	\$18.47	\$13.00	\$0.55	\$0.00	\$32.02
3	45	\$20.78	\$13.00	\$11.84	\$0.00	\$45.62
4	45	\$20.78	\$13.00	\$11.84	\$0.00	\$45.62
5	50	\$23.09	\$13.00	\$12.71	\$0.00	\$48.80
6	55	\$25.39	\$13.00	\$13.07	\$0.00	\$51.46
7	60	\$27.70	\$13.00	\$13.39	\$0.00	\$54.09
8	65	\$30.01	\$13.00	\$13.81	\$0.00	\$56.82
9	70	\$32.32	\$13.00	\$14.18	\$0.00	\$59.50
10	75	\$34.63	\$13.00	\$14.55	\$0.00	\$62.18

Notes :
App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR	01/01/2015	\$53.30	\$13.58	\$14.21	\$0.00	\$81.09
ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2016	\$54.53	\$14.43	\$14.96	\$0.00	\$83.92
	01/01/2017	\$55.86	\$15.28	\$15.71	\$0.00	\$86.85

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - ELEVATOR CONSTRUCTOR - Local 4

Effective Date - 01/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.65	\$13.58	\$0.00	\$0.00	\$40.23
2	55	\$29.32	\$13.58	\$14.21	\$0.00	\$57.11
3	65	\$34.65	\$13.58	\$14.21	\$0.00	\$62.44
4	70	\$37.31	\$13.58	\$14.21	\$0.00	\$65.10
5	80	\$42.64	\$13.58	\$14.21	\$0.00	\$70.43

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.27	\$14.43	\$0.00	\$0.00	\$41.70
2	55	\$29.99	\$14.43	\$14.96	\$0.00	\$59.38
3	65	\$35.44	\$14.43	\$14.96	\$0.00	\$64.83
4	70	\$38.17	\$14.43	\$14.96	\$0.00	\$67.56
5	80	\$43.62	\$14.43	\$14.96	\$0.00	\$73.01

Notes:
Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

Apprentice to Journeyworker Ratio:1:1

ELEVATOR CONSTRUCTOR HELPER <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2015	\$37.31	\$13.58	\$14.21	\$0.00	\$65.10
	01/01/2016	\$38.17	\$14.43	\$14.96	\$0.00	\$67.56
	01/01/2017	\$39.10	\$15.28	\$15.71	\$0.00	\$70.09

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75

For apprentice rates see "Apprentice- LABORER"

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2015	\$40.22	\$10.00	\$14.30	\$0.00	\$64.52
	11/01/2015	\$40.80	\$10.00	\$14.30	\$0.00	\$65.10
	05/01/2016	\$41.69	\$10.00	\$14.30	\$0.00	\$65.99
	11/01/2016	\$42.28	\$10.00	\$14.30	\$0.00	\$66.58
	05/01/2017	\$43.16	\$10.00	\$14.30	\$0.00	\$67.46
	11/01/2017	\$43.89	\$10.00	\$14.30	\$0.00	\$68.19
	05/01/2018	\$44.60	\$10.00	\$14.30	\$0.00	\$68.90

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2015	\$41.65	\$10.00	\$14.30	\$0.00	\$65.95
	11/01/2015	\$42.24	\$10.00	\$14.30	\$0.00	\$66.54
	05/01/2016	\$43.13	\$10.00	\$14.30	\$0.00	\$67.43
	11/01/2016	\$43.73	\$10.00	\$14.30	\$0.00	\$68.03
	05/01/2017	\$44.62	\$10.00	\$14.30	\$0.00	\$68.92
	11/01/2017	\$45.35	\$10.00	\$14.30	\$0.00	\$69.65
	05/01/2018	\$46.07	\$10.00	\$14.30	\$0.00	\$70.37

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2015	\$21.68	\$10.00	\$14.30	\$0.00	\$45.98
	11/01/2015	\$22.02	\$10.00	\$14.30	\$0.00	\$46.32
	05/01/2016	\$22.54	\$10.00	\$14.30	\$0.00	\$46.84
	11/01/2016	\$22.89	\$10.00	\$14.30	\$0.00	\$47.19
	05/01/2017	\$23.42	\$10.00	\$14.30	\$0.00	\$47.72
	11/01/2017	\$23.84	\$10.00	\$14.30	\$0.00	\$48.14
	05/01/2018	\$24.27	\$10.00	\$14.30	\$0.00	\$48.57
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 103</i>	09/01/2015	\$45.67	\$13.00	\$15.89	\$0.00	\$74.56
	03/01/2016	\$46.17	\$13.00	\$16.39	\$0.00	\$75.56
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE <i>LOCAL 103</i> <i>/ COMMISSIONING ELECTRICIANS</i>	09/01/2015	\$34.25	\$13.00	\$14.06	\$0.00	\$61.31
	03/01/2016	\$34.63	\$13.00	\$14.55	\$0.00	\$62.18
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$35.64	\$10.00	\$14.55	\$0.00	\$60.19
	12/01/2015	\$36.69	\$10.00	\$14.55	\$0.00	\$61.24
	06/01/2016	\$37.31	\$10.00	\$14.55	\$0.00	\$61.86
	12/01/2016	\$38.35	\$10.00	\$14.55	\$0.00	\$62.90
	06/01/2017	\$39.19	\$10.00	\$14.55	\$0.00	\$63.74
12/01/2017	\$40.02	\$10.00	\$14.55	\$0.00	\$64.57	
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER <i>LABORERS - ZONE 2</i>	06/01/2015	\$20.50	\$7.30	\$12.30	\$0.00	\$40.10
	12/01/2015	\$20.50	\$7.30	\$12.30	\$0.00	\$40.10
	06/01/2016	\$20.50	\$7.30	\$12.30	\$0.00	\$40.10
	12/01/2016	\$20.50	\$7.30	\$12.30	\$0.00	\$40.10
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE 1</i>	09/01/2015	\$41.59	\$9.80	\$17.53	\$0.00	\$68.92

Apprentice - FLOORCOVERER - Local 2168 Zone 1

Effective Date - 09/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.80	\$9.80	\$1.79	\$0.00	\$32.39
2	55	\$22.87	\$9.80	\$1.79	\$0.00	\$34.46
3	60	\$24.95	\$9.80	\$12.16	\$0.00	\$46.91
4	65	\$27.03	\$9.80	\$12.16	\$0.00	\$48.99
5	70	\$29.11	\$9.80	\$13.95	\$0.00	\$52.86
6	75	\$31.19	\$9.80	\$13.95	\$0.00	\$54.94
7	80	\$33.27	\$9.80	\$15.74	\$0.00	\$58.81
8	85	\$35.35	\$9.80	\$15.74	\$0.00	\$60.89

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$14.55	\$0.00	\$67.38
	12/01/2015	\$44.08	\$10.00	\$14.55	\$0.00	\$68.63
	06/01/2016	\$44.83	\$10.00	\$14.55	\$0.00	\$69.38
	12/01/2016	\$46.08	\$10.00	\$14.55	\$0.00	\$70.63
	06/01/2017	\$47.08	\$10.00	\$14.55	\$0.00	\$71.63
	12/01/2017	\$48.08	\$10.00	\$14.55	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$29.61	\$10.00	\$14.55	\$0.00	\$54.16
	12/01/2015	\$30.48	\$10.00	\$14.55	\$0.00	\$55.03
	06/01/2016	\$31.00	\$10.00	\$14.55	\$0.00	\$55.55
	12/01/2016	\$31.87	\$10.00	\$14.55	\$0.00	\$56.42
	06/01/2017	\$32.56	\$10.00	\$14.55	\$0.00	\$57.11
	12/01/2017	\$33.25	\$10.00	\$14.55	\$0.00	\$57.80
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	07/01/2015	\$38.06	\$7.85	\$16.10	\$0.00	\$62.01
	01/01/2016	\$39.01	\$7.85	\$16.10	\$0.00	\$62.96
	07/01/2016	\$39.96	\$7.85	\$16.10	\$0.00	\$63.91
	01/01/2017	\$40.91	\$7.85	\$16.10	\$0.00	\$64.86

Apprentice - GLAZIER - Local 35 Zone 2

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.03	\$7.85	\$0.00	\$0.00	\$26.88
2	55	\$20.93	\$7.85	\$3.66	\$0.00	\$32.44
3	60	\$22.84	\$7.85	\$3.99	\$0.00	\$34.68
4	65	\$24.74	\$7.85	\$4.32	\$0.00	\$36.91
5	70	\$26.64	\$7.85	\$14.11	\$0.00	\$48.60
6	75	\$28.55	\$7.85	\$14.44	\$0.00	\$50.84
7	80	\$30.45	\$7.85	\$14.77	\$0.00	\$53.07
8	90	\$34.25	\$7.85	\$15.44	\$0.00	\$57.54

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.51	\$7.85	\$0.00	\$0.00	\$27.36
2	55	\$21.46	\$7.85	\$3.66	\$0.00	\$32.97
3	60	\$23.41	\$7.85	\$3.99	\$0.00	\$35.25
4	65	\$25.36	\$7.85	\$4.32	\$0.00	\$37.53
5	70	\$27.31	\$7.85	\$14.11	\$0.00	\$49.27
6	75	\$29.26	\$7.85	\$14.44	\$0.00	\$51.55
7	80	\$31.21	\$7.85	\$14.77	\$0.00	\$53.83
8	90	\$35.11	\$7.85	\$15.44	\$0.00	\$58.40

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$14.55	\$0.00	\$67.38
	12/01/2015	\$44.08	\$10.00	\$14.55	\$0.00	\$68.63
	06/01/2016	\$44.83	\$10.00	\$14.55	\$0.00	\$69.38
	12/01/2016	\$46.08	\$10.00	\$14.55	\$0.00	\$70.63
	06/01/2017	\$47.08	\$10.00	\$14.55	\$0.00	\$71.63
	12/01/2017	\$48.08	\$10.00	\$14.55	\$0.00	\$72.63

Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 06/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$23.56	\$10.00	\$0.00	\$0.00	\$33.56
2	60	\$25.70	\$10.00	\$14.55	\$0.00	\$50.25
3	65	\$27.84	\$10.00	\$14.55	\$0.00	\$52.39
4	70	\$29.98	\$10.00	\$14.55	\$0.00	\$54.53
5	75	\$32.12	\$10.00	\$14.55	\$0.00	\$56.67
6	80	\$34.26	\$10.00	\$14.55	\$0.00	\$58.81
7	85	\$36.41	\$10.00	\$14.55	\$0.00	\$60.96
8	90	\$38.55	\$10.00	\$14.55	\$0.00	\$63.10

Effective Date - 12/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$24.24	\$10.00	\$0.00	\$0.00	\$34.24
2	60	\$26.45	\$10.00	\$14.55	\$0.00	\$51.00
3	65	\$28.65	\$10.00	\$14.55	\$0.00	\$53.20
4	70	\$30.86	\$10.00	\$14.55	\$0.00	\$55.41
5	75	\$33.06	\$10.00	\$14.55	\$0.00	\$57.61
6	80	\$35.26	\$10.00	\$14.55	\$0.00	\$59.81
7	85	\$37.47	\$10.00	\$14.55	\$0.00	\$62.02
8	90	\$39.67	\$10.00	\$14.55	\$0.00	\$64.22

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	08/01/2015	\$43.31	\$10.20	\$21.48	\$2.25	\$77.24
	02/01/2016	\$44.31	\$10.20	\$21.48	\$2.25	\$78.24
	08/01/2016	\$45.46	\$10.20	\$21.48	\$2.25	\$79.39
	02/01/2017	\$46.56	\$10.20	\$21.48	\$2.25	\$80.49
	08/01/2017	\$47.66	\$10.20	\$21.48	\$2.25	\$81.59
	02/01/2018	\$48.81	\$10.20	\$21.48	\$2.25	\$82.74

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 103</i>	09/01/2015	\$45.67	\$13.00	\$15.89	\$0.00	\$74.56
	03/01/2016	\$46.17	\$13.00	\$16.39	\$0.00	\$75.56

For apprentice rates see "Apprentice- ELECTRICIAN"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	08/01/2015	\$43.31	\$10.20	\$21.48	\$2.25	\$77.24
	02/01/2016	\$44.31	\$10.20	\$21.48	\$2.25	\$78.24
	08/01/2016	\$45.46	\$10.20	\$21.48	\$2.25	\$79.39
	02/01/2017	\$46.56	\$10.20	\$21.48	\$2.25	\$80.49
	08/01/2017	\$47.66	\$10.20	\$21.48	\$2.25	\$81.59
	02/01/2018	\$48.81	\$10.20	\$21.48	\$2.25	\$82.74
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING -WATER) <i>PIPEFITTERS LOCAL 537 (Local 138)</i>	09/01/2015	\$47.36	\$9.70	\$14.89	\$0.00	\$71.95
	03/01/2016	\$48.36	\$9.70	\$14.89	\$0.00	\$72.95
	09/01/2016	\$49.36	\$9.70	\$14.89	\$0.00	\$73.95
	03/01/2017	\$50.36	\$9.70	\$14.89	\$0.00	\$74.95
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537 (Local 138)</i>	09/01/2015	\$47.36	\$9.70	\$14.89	\$0.00	\$71.95
	03/01/2016	\$48.36	\$9.70	\$14.89	\$0.00	\$72.95
	09/01/2016	\$49.36	\$9.70	\$14.89	\$0.00	\$73.95
	03/01/2017	\$50.36	\$9.70	\$14.89	\$0.00	\$74.95
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	12/01/2015	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	06/01/2016	\$32.90	\$7.30	\$12.30	\$0.00	\$52.50
	12/01/2016	\$33.65	\$7.30	\$12.30	\$0.00	\$53.25
For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2014	\$43.31	\$11.25	\$12.60	\$0.00	\$67.16

Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston

Effective Date - 09/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.66	\$11.25	\$9.35	\$0.00	\$42.26
2	60	\$25.99	\$11.25	\$10.00	\$0.00	\$47.24
3	70	\$30.32	\$11.25	\$10.65	\$0.00	\$52.22
4	80	\$34.65	\$11.25	\$11.30	\$0.00	\$57.20

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (BOSTON AREA)</i>	03/16/2015	\$42.11	\$7.70	\$20.25	\$0.00	\$70.06
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - IRONWORKER - Local 7 Boston

Effective Date - 03/16/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$25.27	\$7.70	\$20.25	\$0.00	\$53.22
2	70	\$29.48	\$7.70	\$20.25	\$0.00	\$57.43
3	75	\$31.58	\$7.70	\$20.25	\$0.00	\$59.53
4	80	\$33.69	\$7.70	\$20.25	\$0.00	\$61.64
5	85	\$35.79	\$7.70	\$20.25	\$0.00	\$63.74
6	90	\$37.90	\$7.70	\$20.25	\$0.00	\$65.85

Notes:

** Structural 1:6; Ornamental 1:4

Apprentice to Journeyworker Ratio:**

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 2	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75

For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 2	06/01/2015	\$31.15	\$7.30	\$12.30	\$0.00	\$50.75
	12/01/2015	\$31.65	\$7.30	\$12.30	\$0.00	\$51.25
	06/01/2016	\$32.15	\$7.30	\$12.30	\$0.00	\$51.75
	12/01/2016	\$32.90	\$7.30	\$12.30	\$0.00	\$52.50

Apprentice - LABORER - Zone 2

Effective Date - 06/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$18.69	\$7.30	\$12.30	\$0.00	\$38.29
2	70	\$21.81	\$7.30	\$12.30	\$0.00	\$41.41
3	80	\$24.92	\$7.30	\$12.30	\$0.00	\$44.52
4	90	\$28.04	\$7.30	\$12.30	\$0.00	\$47.64

Effective Date - 12/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$18.99	\$7.30	\$12.30	\$0.00	\$38.59
2	70	\$22.16	\$7.30	\$12.30	\$0.00	\$41.76
3	80	\$25.32	\$7.30	\$12.30	\$0.00	\$44.92
4	90	\$28.49	\$7.30	\$12.30	\$0.00	\$48.09

Notes:

Apprentice to Journeyworker Ratio:1:5

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: CARPENTER TENDER <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.15	\$7.30	\$12.30	\$0.00	\$50.75
	12/01/2015	\$31.65	\$7.30	\$12.30	\$0.00	\$51.25
	06/01/2016	\$32.15	\$7.30	\$12.30	\$0.00	\$51.75
	12/01/2016	\$32.90	\$7.30	\$12.30	\$0.00	\$52.50
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.15	\$7.30	\$12.30	\$0.00	\$50.75
	12/01/2015	\$31.65	\$7.30	\$12.30	\$0.00	\$51.25
	06/01/2016	\$32.15	\$7.30	\$12.30	\$0.00	\$51.75
	12/01/2016	\$32.90	\$7.30	\$12.30	\$0.00	\$52.50
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.35	\$7.30	\$12.25	\$0.00	\$50.90
	12/01/2015	\$31.85	\$7.30	\$12.25	\$0.00	\$51.40
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75
For apprentice rates see "Apprentice- LABORER"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.15	\$7.30	\$12.30	\$0.00	\$50.75
	12/01/2015	\$31.65	\$7.30	\$12.30	\$0.00	\$51.25
	06/01/2016	\$32.15	\$7.30	\$12.30	\$0.00	\$51.75
	12/01/2016	\$32.90	\$7.30	\$12.30	\$0.00	\$52.50
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.15	\$7.30	\$12.30	\$0.00	\$50.75
	12/01/2015	\$31.65	\$7.30	\$12.30	\$0.00	\$51.25
	06/01/2016	\$32.15	\$7.30	\$12.30	\$0.00	\$51.75
	12/01/2016	\$32.90	\$7.30	\$12.30	\$0.00	\$52.50
This classification applies to all tree work associated with the removal of standing trees, and trimming and removal of branches and limbs when the work is not done for a utility company for the purpose of operation, maintenance or repair of utility company equipment. For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75
For apprentice rates see "Apprentice- LABORER"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2015	\$38.08	\$10.18	\$17.25	\$0.00	\$65.51
	02/01/2016	\$38.53	\$10.18	\$17.25	\$0.00	\$65.96
	08/01/2016	\$39.23	\$10.18	\$17.33	\$0.00	\$66.74
	02/01/2017	\$39.69	\$10.18	\$17.33	\$0.00	\$67.20

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile

Effective Date - 08/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.04	\$10.18	\$17.25	\$0.00	\$46.47
2	60	\$22.85	\$10.18	\$17.25	\$0.00	\$50.28
3	70	\$26.66	\$10.18	\$17.25	\$0.00	\$54.09
4	80	\$30.46	\$10.18	\$17.25	\$0.00	\$57.89
5	90	\$34.27	\$10.18	\$17.25	\$0.00	\$61.70

Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.27	\$10.18	\$17.25	\$0.00	\$46.70
2	60	\$23.12	\$10.18	\$17.25	\$0.00	\$50.55
3	70	\$26.97	\$10.18	\$17.25	\$0.00	\$54.40
4	80	\$30.82	\$10.18	\$17.25	\$0.00	\$58.25
5	90	\$34.68	\$10.18	\$17.25	\$0.00	\$62.11

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS, TILELAYERS & TERRAZZO MECH	08/01/2015	\$49.90	\$10.18	\$18.57	\$0.00	\$78.65
BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2016	\$50.47	\$10.18	\$18.57	\$0.00	\$79.22
	08/01/2016	\$51.37	\$10.18	\$18.65	\$0.00	\$80.20
	02/01/2017	\$51.94	\$10.18	\$18.65	\$0.00	\$80.77

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile

Effective Date - 08/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.95	\$10.18	\$18.57	\$0.00	\$53.70
2	60	\$29.94	\$10.18	\$18.57	\$0.00	\$58.69
3	70	\$34.93	\$10.18	\$18.57	\$0.00	\$63.68
4	80	\$39.92	\$10.18	\$18.57	\$0.00	\$68.67
5	90	\$44.91	\$10.18	\$18.57	\$0.00	\$73.66

Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.24	\$10.18	\$18.57	\$0.00	\$53.99
2	60	\$30.28	\$10.18	\$18.57	\$0.00	\$59.03
3	70	\$35.33	\$10.18	\$18.57	\$0.00	\$64.08
4	80	\$40.38	\$10.18	\$18.57	\$0.00	\$69.13
5	90	\$45.42	\$10.18	\$18.57	\$0.00	\$74.17

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$14.55	\$0.00	\$66.97
	12/01/2015	\$43.66	\$10.00	\$14.55	\$0.00	\$68.21
	06/01/2016	\$44.41	\$10.00	\$14.55	\$0.00	\$68.96
	12/01/2016	\$45.64	\$10.00	\$14.55	\$0.00	\$70.19
	06/01/2017	\$46.63	\$10.00	\$14.55	\$0.00	\$71.18
	12/01/2017	\$47.62	\$10.00	\$14.55	\$0.00	\$72.17

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$14.55	\$0.00	\$66.97
	12/01/2015	\$43.66	\$10.00	\$14.55	\$0.00	\$68.21
	06/01/2016	\$44.41	\$10.00	\$14.55	\$0.00	\$68.96
	12/01/2016	\$45.64	\$10.00	\$14.55	\$0.00	\$70.19
	06/01/2017	\$46.63	\$10.00	\$14.55	\$0.00	\$71.18
	12/01/2017	\$47.62	\$10.00	\$14.55	\$0.00	\$72.17

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 1) <i>MILLWRIGHTS LOCAL 1121 - Zone 1</i>	04/01/2015	\$37.64	\$9.80	\$16.21	\$0.00	\$63.65
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - MILLWRIGHT - Local 1121 Zone 1

Effective Date - 04/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$20.70	\$9.80	\$4.48	\$0.00	\$34.98
2	65	\$24.47	\$9.80	\$13.36	\$0.00	\$47.63
3	75	\$28.23	\$9.80	\$14.18	\$0.00	\$52.21
4	85	\$31.99	\$9.80	\$14.99	\$0.00	\$56.78

Notes:
Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:5

MORTAR MIXER <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75

For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES,GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$21.97	\$10.00	\$14.55	\$0.00	\$46.52
	12/01/2015	\$22.62	\$10.00	\$14.55	\$0.00	\$47.17
	06/01/2016	\$23.01	\$10.00	\$14.55	\$0.00	\$47.56
	12/01/2016	\$23.66	\$10.00	\$14.55	\$0.00	\$48.21
	06/01/2017	\$24.17	\$10.00	\$14.55	\$0.00	\$48.72
	12/01/2017	\$24.69	\$10.00	\$14.55	\$0.00	\$49.24

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$25.68	\$10.00	\$14.55	\$0.00	\$50.23
	12/01/2015	\$26.43	\$10.00	\$14.55	\$0.00	\$50.98
	06/01/2016	\$26.89	\$10.00	\$14.55	\$0.00	\$51.44
	12/01/2016	\$27.64	\$10.00	\$14.55	\$0.00	\$52.19
	06/01/2017	\$28.24	\$10.00	\$14.55	\$0.00	\$52.79
	12/01/2017	\$28.85	\$10.00	\$14.55	\$0.00	\$53.40

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$14.55	\$0.00	\$66.97
	12/01/2015	\$43.66	\$10.00	\$14.55	\$0.00	\$68.21
	06/01/2016	\$44.41	\$10.00	\$14.55	\$0.00	\$68.96
	12/01/2016	\$45.64	\$10.00	\$14.55	\$0.00	\$70.19
	06/01/2017	\$46.63	\$10.00	\$14.55	\$0.00	\$71.18
	12/01/2017	\$47.62	\$10.00	\$14.55	\$0.00	\$72.17

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2015	\$48.56	\$7.85	\$16.10	\$0.00	\$72.51
	01/01/2016	\$49.51	\$7.85	\$16.10	\$0.00	\$73.46
	07/01/2016	\$50.46	\$7.85	\$16.10	\$0.00	\$74.41
	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.28	\$7.85	\$0.00	\$0.00	\$32.13
2	55	\$26.71	\$7.85	\$3.66	\$0.00	\$38.22
3	60	\$29.14	\$7.85	\$3.99	\$0.00	\$40.98
4	65	\$31.56	\$7.85	\$4.32	\$0.00	\$43.73
5	70	\$33.99	\$7.85	\$14.11	\$0.00	\$55.95
6	75	\$36.42	\$7.85	\$14.44	\$0.00	\$58.71
7	80	\$38.85	\$7.85	\$14.77	\$0.00	\$61.47
8	90	\$43.70	\$7.85	\$15.44	\$0.00	\$66.99

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.76	\$7.85	\$0.00	\$0.00	\$32.61
2	55	\$27.23	\$7.85	\$3.66	\$0.00	\$38.74
3	60	\$29.71	\$7.85	\$3.99	\$0.00	\$41.55
4	65	\$32.18	\$7.85	\$4.32	\$0.00	\$44.35
5	70	\$34.66	\$7.85	\$14.11	\$0.00	\$56.62
6	75	\$37.13	\$7.85	\$14.44	\$0.00	\$59.42
7	80	\$39.61	\$7.85	\$14.77	\$0.00	\$62.23
8	90	\$44.56	\$7.85	\$15.44	\$0.00	\$67.85

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	07/01/2015	\$39.46	\$7.85	\$16.10	\$0.00	\$63.41
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	01/01/2016	\$40.41	\$7.85	\$16.10	\$0.00	\$64.36
	07/01/2016	\$41.36	\$7.85	\$16.10	\$0.00	\$65.31
	01/01/2017	\$42.31	\$7.85	\$16.10	\$0.00	\$66.26

Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.73	\$7.85	\$0.00	\$0.00	\$27.58
2	55	\$21.70	\$7.85	\$3.66	\$0.00	\$33.21
3	60	\$23.68	\$7.85	\$3.99	\$0.00	\$35.52
4	65	\$25.65	\$7.85	\$4.32	\$0.00	\$37.82
5	70	\$27.62	\$7.85	\$14.11	\$0.00	\$49.58
6	75	\$29.60	\$7.85	\$14.44	\$0.00	\$51.89
7	80	\$31.57	\$7.85	\$14.77	\$0.00	\$54.19
8	90	\$35.51	\$7.85	\$15.44	\$0.00	\$58.80

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.21	\$7.85	\$0.00	\$0.00	\$28.06
2	55	\$22.23	\$7.85	\$3.66	\$0.00	\$33.74
3	60	\$24.25	\$7.85	\$3.99	\$0.00	\$36.09
4	65	\$26.27	\$7.85	\$4.32	\$0.00	\$38.44
5	70	\$28.29	\$7.85	\$14.11	\$0.00	\$50.25
6	75	\$30.31	\$7.85	\$14.44	\$0.00	\$52.60
7	80	\$32.33	\$7.85	\$14.77	\$0.00	\$54.95
8	90	\$36.37	\$7.85	\$15.44	\$0.00	\$59.66

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)	07/01/2015	\$37.52	\$7.85	\$16.10	\$0.00	\$61.47
PAINTERS LOCAL 35 - ZONE 2	01/01/2016	\$38.47	\$7.85	\$16.10	\$0.00	\$62.42
	07/01/2016	\$39.42	\$7.85	\$16.10	\$0.00	\$63.37
	01/01/2017	\$40.37	\$7.85	\$16.10	\$0.00	\$64.32

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.76	\$7.85	\$0.00	\$0.00	\$26.61
2	55	\$20.64	\$7.85	\$3.66	\$0.00	\$32.15
3	60	\$22.51	\$7.85	\$3.99	\$0.00	\$34.35
4	65	\$24.39	\$7.85	\$4.32	\$0.00	\$36.56
5	70	\$26.26	\$7.85	\$14.11	\$0.00	\$48.22
6	75	\$28.14	\$7.85	\$14.44	\$0.00	\$50.43
7	80	\$30.02	\$7.85	\$14.77	\$0.00	\$52.64
8	90	\$33.77	\$7.85	\$15.44	\$0.00	\$57.06

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.24	\$7.85	\$0.00	\$0.00	\$27.09
2	55	\$21.16	\$7.85	\$3.66	\$0.00	\$32.67
3	60	\$23.08	\$7.85	\$3.99	\$0.00	\$34.92
4	65	\$25.01	\$7.85	\$4.32	\$0.00	\$37.18
5	70	\$26.93	\$7.85	\$14.11	\$0.00	\$48.89
6	75	\$28.85	\$7.85	\$14.44	\$0.00	\$51.14
7	80	\$30.78	\$7.85	\$14.77	\$0.00	\$53.40
8	90	\$34.62	\$7.85	\$15.44	\$0.00	\$57.91

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (TRAFFIC MARKINGS) LABORERS - ZONE 2	06/01/2015	\$31.15	\$7.30	\$12.30	\$0.00	\$50.75
	12/01/2015	\$31.65	\$7.30	\$12.30	\$0.00	\$51.25
	06/01/2016	\$32.15	\$7.30	\$12.30	\$0.00	\$51.75
	12/01/2016	\$32.90	\$7.30	\$12.30	\$0.00	\$52.50

For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) *	07/01/2015	\$38.06	\$7.85	\$16.10	\$0.00	\$62.01
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	01/01/2016	\$39.01	\$7.85	\$16.10	\$0.00	\$62.96
	07/01/2016	\$39.96	\$7.85	\$16.10	\$0.00	\$63.91
	01/01/2017	\$40.91	\$7.85	\$16.10	\$0.00	\$64.86

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.03	\$7.85	\$0.00	\$0.00	\$26.88
2	55	\$20.93	\$7.85	\$3.66	\$0.00	\$32.44
3	60	\$22.84	\$7.85	\$3.99	\$0.00	\$34.68
4	65	\$24.74	\$7.85	\$4.32	\$0.00	\$36.91
5	70	\$26.64	\$7.85	\$14.11	\$0.00	\$48.60
6	75	\$28.55	\$7.85	\$14.44	\$0.00	\$50.84
7	80	\$30.45	\$7.85	\$14.77	\$0.00	\$53.07
8	90	\$34.25	\$7.85	\$15.44	\$0.00	\$57.54

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.51	\$7.85	\$0.00	\$0.00	\$27.36
2	55	\$21.46	\$7.85	\$3.66	\$0.00	\$32.97
3	60	\$23.41	\$7.85	\$3.99	\$0.00	\$35.25
4	65	\$25.36	\$7.85	\$4.32	\$0.00	\$37.53
5	70	\$27.31	\$7.85	\$14.11	\$0.00	\$49.27
6	75	\$29.26	\$7.85	\$14.44	\$0.00	\$51.55
7	80	\$31.21	\$7.85	\$14.77	\$0.00	\$53.83
8	90	\$35.11	\$7.85	\$15.44	\$0.00	\$58.40

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	07/01/2015	\$36.12	\$7.85	\$16.10	\$0.00	\$60.07
PAINTERS LOCAL 35 - ZONE 2	01/01/2016	\$37.07	\$7.85	\$16.10	\$0.00	\$61.02
	07/01/2016	\$38.02	\$7.85	\$16.10	\$0.00	\$61.97
	01/01/2017	\$38.97	\$7.85	\$16.10	\$0.00	\$62.92

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.06	\$7.85	\$0.00	\$0.00	\$25.91
2	55	\$19.87	\$7.85	\$3.66	\$0.00	\$31.38
3	60	\$21.67	\$7.85	\$3.99	\$0.00	\$33.51
4	65	\$23.48	\$7.85	\$4.32	\$0.00	\$35.65
5	70	\$25.28	\$7.85	\$14.11	\$0.00	\$47.24
6	75	\$27.09	\$7.85	\$14.44	\$0.00	\$49.38
7	80	\$28.90	\$7.85	\$14.77	\$0.00	\$51.52
8	90	\$32.51	\$7.85	\$15.44	\$0.00	\$55.80

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.54	\$7.85	\$0.00	\$0.00	\$26.39
2	55	\$20.39	\$7.85	\$3.66	\$0.00	\$31.90
3	60	\$22.24	\$7.85	\$3.99	\$0.00	\$34.08
4	65	\$24.10	\$7.85	\$4.32	\$0.00	\$36.27
5	70	\$25.95	\$7.85	\$14.11	\$0.00	\$47.91
6	75	\$27.80	\$7.85	\$14.44	\$0.00	\$50.09
7	80	\$29.66	\$7.85	\$14.77	\$0.00	\$52.28
8	90	\$33.36	\$7.85	\$15.44	\$0.00	\$56.65

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2012	\$30.28	\$9.07	\$8.00	\$0.00	\$47.35
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07

Apprentice - PILE DRIVER - Local 56 Zone 1

Effective Date - 08/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.02	\$9.80	\$19.23	\$0.00	\$50.05
2	60	\$25.22	\$9.80	\$19.23	\$0.00	\$54.25
3	70	\$29.43	\$9.80	\$19.23	\$0.00	\$58.46
4	75	\$31.53	\$9.80	\$19.23	\$0.00	\$60.56
5	80	\$33.63	\$9.80	\$19.23	\$0.00	\$62.66
6	80	\$33.63	\$9.80	\$19.23	\$0.00	\$62.66
7	90	\$37.84	\$9.80	\$19.23	\$0.00	\$66.87
8	90	\$37.84	\$9.80	\$19.23	\$0.00	\$66.87

Notes:

Apprentice to Journeyworker Ratio:1:3

PIPEFITTER & STEAMFITTER	09/01/2015	\$47.36	\$9.70	\$14.89	\$0.00	\$71.95
PIPEFITTERS LOCAL 537 (Local 138)	03/01/2016	\$48.36	\$9.70	\$14.89	\$0.00	\$72.95
	09/01/2016	\$49.36	\$9.70	\$14.89	\$0.00	\$73.95
	03/01/2017	\$50.36	\$9.70	\$14.89	\$0.00	\$74.95

Apprentice - PIPEFITTER Local 537 (Local 138)

Effective Date - 09/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.94	\$9.70	\$5.50	\$0.00	\$34.14
2	45	\$21.31	\$9.70	\$14.89	\$0.00	\$45.90
3	60	\$28.42	\$9.70	\$14.89	\$0.00	\$53.01
4	70	\$33.15	\$9.70	\$14.89	\$0.00	\$57.74
5	80	\$37.89	\$9.70	\$14.89	\$0.00	\$62.48

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.34	\$9.70	\$5.50	\$0.00	\$34.54
2	45	\$21.76	\$9.70	\$14.89	\$0.00	\$46.35
3	60	\$29.02	\$9.70	\$14.89	\$0.00	\$53.61
4	70	\$33.85	\$9.70	\$14.89	\$0.00	\$58.44
5	80	\$38.69	\$9.70	\$14.89	\$0.00	\$63.28

Notes:

** 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.
Refrig/AC Mechanic **1:1;1:2;2:4;3:6;4:8;5:10;6:12;7:14;8:17;9:20;10:23(Max)

Apprentice to Journeyworker Ratio:**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PIPELAYER <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75

For apprentice rates see "Apprentice- LABORER"

PLUMBER <i>PLUMBERS & GASFITTERS LOCAL 12 (Local 138)</i>	09/01/2015	\$46.38	\$10.82	\$15.14	\$0.00	\$72.34
	03/01/2016	\$47.53	\$10.82	\$15.14	\$0.00	\$73.49
	09/01/2016	\$48.58	\$10.82	\$15.14	\$0.00	\$74.54
	03/01/2017	\$49.58	\$10.82	\$15.14	\$0.00	\$75.54

Apprentice - PLUMBER/GASFITTER - Local 12 (Local 138)

Effective Date - 09/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$16.23	\$10.82	\$5.63	\$0.00	\$32.68
2	40	\$18.55	\$10.82	\$6.37	\$0.00	\$35.74
3	55	\$25.51	\$10.82	\$8.56	\$0.00	\$44.89
4	65	\$30.15	\$10.82	\$10.03	\$0.00	\$51.00
5	75	\$34.79	\$10.82	\$11.48	\$0.00	\$57.09

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$16.64	\$10.82	\$5.61	\$0.00	\$33.07
2	40	\$19.01	\$10.82	\$6.36	\$0.00	\$36.19
3	55	\$26.14	\$10.82	\$8.56	\$0.00	\$45.52
4	65	\$30.89	\$10.82	\$10.02	\$0.00	\$51.73
5	75	\$35.65	\$10.82	\$11.48	\$0.00	\$57.95

Notes:

Steps are 1 yr
Step 4 with lic\$54.05 Step5 with lic\$60.13

Apprentice to Journeyworker Ratio:1:5

PNEUMATIC CONTROLS (TEMP.) <i>PIPEFITTERS LOCAL 537 (Local 138)</i>	09/01/2015	\$47.36	\$9.70	\$14.89	\$0.00	\$71.95
	03/01/2016	\$48.36	\$9.70	\$14.89	\$0.00	\$72.95
	09/01/2016	\$49.36	\$9.70	\$14.89	\$0.00	\$73.95
	03/01/2017	\$50.36	\$9.70	\$14.89	\$0.00	\$74.95

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75

For apprentice rates see "Apprentice- LABORER"

POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	06/01/2015	\$32.15	\$7.30	\$12.30	\$0.00	\$51.75
	12/01/2015	\$32.65	\$7.30	\$12.30	\$0.00	\$52.25
	06/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75
	12/01/2016	\$33.90	\$7.30	\$12.30	\$0.00	\$53.50

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$14.55	\$0.00	\$67.38
	12/01/2015	\$44.08	\$10.00	\$14.55	\$0.00	\$68.63
	06/01/2016	\$44.83	\$10.00	\$14.55	\$0.00	\$69.38
	12/01/2016	\$46.08	\$10.00	\$14.55	\$0.00	\$70.63
	06/01/2017	\$47.08	\$10.00	\$14.55	\$0.00	\$71.63
	12/01/2017	\$48.08	\$10.00	\$14.55	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$14.55	\$0.00	\$67.38
	12/01/2015	\$44.08	\$10.00	\$14.55	\$0.00	\$68.63
	06/01/2016	\$44.83	\$10.00	\$14.55	\$0.00	\$69.38
	12/01/2016	\$46.08	\$10.00	\$14.55	\$0.00	\$70.63
	06/01/2017	\$47.08	\$10.00	\$14.55	\$0.00	\$71.63
	12/01/2017	\$48.08	\$10.00	\$14.55	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$29.61	\$10.00	\$14.55	\$0.00	\$54.16
	12/01/2015	\$30.48	\$10.00	\$14.55	\$0.00	\$55.03
	06/01/2016	\$31.00	\$10.00	\$14.55	\$0.00	\$55.55
	12/01/2016	\$31.87	\$10.00	\$14.55	\$0.00	\$56.42
	06/01/2017	\$32.56	\$10.00	\$14.55	\$0.00	\$57.11
	12/01/2017	\$33.25	\$10.00	\$14.55	\$0.00	\$57.80
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS LOCAL 42</i>	05/01/2015	\$22.66	\$8.49	\$9.89	\$0.00	\$41.04
	11/01/2015	\$22.78	\$8.49	\$9.89	\$0.00	\$41.16
	04/30/2016	\$22.78	\$8.49	\$10.25	\$0.00	\$41.52
	05/01/2016	\$24.15	\$8.49	\$10.68	\$0.00	\$43.32
	04/30/2017	\$24.15	\$8.49	\$11.07	\$0.00	\$43.71
	05/01/2017	\$24.21	\$8.49	\$11.54	\$0.00	\$44.24
	04/30/2018	\$24.21	\$8.49	\$11.96	\$0.00	\$44.66
	05/01/2018	\$24.24	\$8.49	\$12.46	\$0.00	\$45.19
	04/30/2019	\$24.24	\$8.49	\$12.92	\$0.00	\$45.65
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$14.55	\$0.00	\$66.97
	12/01/2015	\$43.66	\$10.00	\$14.55	\$0.00	\$68.21
	06/01/2016	\$44.41	\$10.00	\$14.55	\$0.00	\$68.96
	12/01/2016	\$45.64	\$10.00	\$14.55	\$0.00	\$70.19
	06/01/2017	\$46.63	\$10.00	\$14.55	\$0.00	\$71.18
	12/01/2017	\$47.62	\$10.00	\$14.55	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RESIDENTIAL WOOD FRAME (All Other Work) <i>CARPENTERS -ZONE 2 (Residential Wood)</i>	04/01/2011	\$24.24	\$8.67	\$15.51	\$0.00	\$48.42
RESIDENTIAL WOOD FRAME CARPENTER **	05/01/2011	\$24.24	\$6.34	\$6.23	\$0.00	\$36.81

** The Residential Wood Frame Carpenter classification applies only to the construction of new, wood frame residences that do not exceed four stories including the basement. *CARPENTERS -ZONE 2 (Residential Wood)*

As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - CARPENTER (Residential Wood Frame) - Zone 2

Effective Date - 05/01/2011

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$14.54	\$6.34	\$0.00	\$0.00	\$20.88
2	60	\$14.54	\$6.34	\$6.23	\$0.00	\$27.11
3	65	\$15.76	\$6.34	\$6.23	\$0.00	\$28.33
4	70	\$16.97	\$6.34	\$6.23	\$0.00	\$29.54
5	75	\$18.18	\$6.34	\$6.23	\$0.00	\$30.75
6	80	\$19.39	\$6.34	\$6.23	\$0.00	\$31.96
7	85	\$20.60	\$6.34	\$6.23	\$0.00	\$33.17
8	90	\$21.82	\$6.34	\$6.23	\$0.00	\$34.39

Notes:

Apprentice to Journeyworker Ratio:1:5

RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75

For apprentice rates see "Apprentice- LABORER"

ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$14.55	\$0.00	\$66.97
	12/01/2015	\$43.66	\$10.00	\$14.55	\$0.00	\$68.21
	06/01/2016	\$44.41	\$10.00	\$14.55	\$0.00	\$68.96
	12/01/2016	\$45.64	\$10.00	\$14.55	\$0.00	\$70.19
	06/01/2017	\$46.63	\$10.00	\$14.55	\$0.00	\$71.18
	12/01/2017	\$47.62	\$10.00	\$14.55	\$0.00	\$72.17

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

ROOFER (Inc.Roofer Waterproofng &Roofer Damproofg) <i>ROOFERS LOCAL 33</i>	08/01/2015	\$40.11	\$11.00	\$12.00	\$0.00	\$63.11
	02/01/2016	\$41.01	\$11.00	\$12.00	\$0.00	\$64.01

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - ROOFER - Local 33

Effective Date - 08/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.06	\$11.00	\$3.38	\$0.00	\$34.44
2	60	\$24.07	\$11.00	\$12.00	\$0.00	\$47.07
3	65	\$26.07	\$11.00	\$12.00	\$0.00	\$49.07
4	75	\$30.08	\$11.00	\$12.00	\$0.00	\$53.08
5	85	\$34.09	\$11.00	\$12.00	\$0.00	\$57.09

Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.51	\$11.00	\$3.38	\$0.00	\$34.89
2	60	\$24.61	\$11.00	\$12.00	\$0.00	\$47.61
3	65	\$26.66	\$11.00	\$12.00	\$0.00	\$49.66
4	75	\$30.76	\$11.00	\$12.00	\$0.00	\$53.76
5	85	\$34.86	\$11.00	\$12.00	\$0.00	\$57.86

Notes: ** 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1
 Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.

Apprentice to Journeyworker Ratio:**

ROOFER SLATE / TILE / PRECAST CONCRETE	08/01/2015	\$40.36	\$11.00	\$12.00	\$0.00	\$63.36
ROOFERS LOCAL 33	02/01/2016	\$41.26	\$11.00	\$12.00	\$0.00	\$64.26
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER	08/01/2015	\$43.31	\$10.20	\$21.48	\$2.25	\$77.24
SHEETMETAL WORKERS LOCAL 17 - A	02/01/2016	\$44.31	\$10.20	\$21.48	\$2.25	\$78.24
	08/01/2016	\$45.46	\$10.20	\$21.48	\$2.25	\$79.39
	02/01/2017	\$46.56	\$10.20	\$21.48	\$2.25	\$80.49
	08/01/2017	\$47.66	\$10.20	\$21.48	\$2.25	\$81.59
	02/01/2018	\$48.81	\$10.20	\$21.48	\$2.25	\$82.74

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SHEET METAL WORKER - Local 17-A

Effective Date - 08/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.32	\$10.20	\$4.90	\$0.00	\$32.42
2	40	\$17.32	\$10.20	\$4.90	\$0.00	\$32.42
3	45	\$19.49	\$10.20	\$9.59	\$1.18	\$40.46
4	45	\$19.49	\$10.20	\$9.59	\$1.18	\$40.46
5	50	\$21.66	\$10.20	\$10.45	\$1.27	\$43.58
6	50	\$21.66	\$10.20	\$10.70	\$1.28	\$43.84
7	60	\$25.99	\$10.20	\$12.17	\$1.45	\$49.81
8	65	\$28.15	\$10.20	\$13.04	\$1.54	\$52.93
9	75	\$32.48	\$10.20	\$14.76	\$1.72	\$59.16
10	85	\$36.81	\$10.20	\$15.98	\$1.89	\$64.88

Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.72	\$10.20	\$4.90	\$0.00	\$32.82
2	40	\$17.72	\$10.20	\$4.90	\$0.00	\$32.82
3	45	\$19.94	\$10.20	\$9.59	\$1.19	\$40.92
4	45	\$19.94	\$10.20	\$9.59	\$1.19	\$40.92
5	50	\$22.16	\$10.20	\$10.45	\$1.28	\$44.09
6	50	\$22.16	\$10.20	\$10.70	\$1.29	\$44.35
7	60	\$26.59	\$10.20	\$12.17	\$1.47	\$50.43
8	65	\$28.80	\$10.20	\$13.04	\$1.56	\$53.60
9	75	\$33.23	\$10.20	\$14.76	\$1.75	\$59.94
10	85	\$37.66	\$10.20	\$15.98	\$1.92	\$65.76

Notes:
Steps are 6 mos.

Apprentice to Journeyworker Ratio:1:4

SIGN ERECTOR PAINTERS LOCAL 35 - ZONE 2	06/01/2013	\$25.81	\$7.07	\$7.05	\$0.00	\$39.93
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SIGN ERECTOR - Local 35 Zone 2

Effective Date - 06/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$12.91	\$7.07	\$0.00	\$0.00	\$19.98
2	55	\$14.20	\$7.07	\$2.45	\$0.00	\$23.72
3	60	\$15.49	\$7.07	\$2.45	\$0.00	\$25.01
4	65	\$16.78	\$7.07	\$2.45	\$0.00	\$26.30
5	70	\$18.07	\$7.07	\$7.05	\$0.00	\$32.19
6	75	\$19.36	\$7.07	\$7.05	\$0.00	\$33.48
7	80	\$20.65	\$7.07	\$7.05	\$0.00	\$34.77
8	85	\$21.94	\$7.07	\$7.05	\$0.00	\$36.06
9	90	\$23.23	\$7.07	\$7.05	\$0.00	\$37.35

Notes:
Steps are 4 mos.

Apprentice to Journeyworker Ratio:1:1

SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$31.94	\$10.41	\$9.33	\$0.00	\$51.68
	12/01/2015	\$31.94	\$10.41	\$10.08	\$0.00	\$52.43
	06/01/2016	\$32.44	\$10.41	\$10.08	\$0.00	\$52.93
	08/01/2016	\$32.44	\$10.91	\$10.08	\$0.00	\$53.43
	12/01/2016	\$32.44	\$10.91	\$10.89	\$0.00	\$54.24
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$32.23	\$10.41	\$9.33	\$0.00	\$51.97
	12/01/2015	\$32.23	\$10.41	\$10.08	\$0.00	\$52.72
	06/01/2016	\$32.73	\$10.41	\$10.08	\$0.00	\$53.22
	08/01/2016	\$32.73	\$10.91	\$10.08	\$0.00	\$53.72
	12/01/2016	\$32.73	\$10.91	\$10.89	\$0.00	\$54.53
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section B) Zone 2</i>	03/01/2015	\$48.99	\$8.42	\$14.90	\$0.00	\$72.31
	10/01/2015	\$50.03	\$8.42	\$14.90	\$0.00	\$73.35
	01/01/2016	\$50.03	\$8.67	\$15.05	\$0.00	\$73.75
	03/01/2016	\$50.93	\$8.67	\$15.05	\$0.00	\$74.65
	10/01/2016	\$51.97	\$8.67	\$15.05	\$0.00	\$75.69
	03/01/2017	\$52.87	\$8.67	\$15.05	\$0.00	\$76.59

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SPRINKLER FITTER - Local 550 (Section B) Zone 2

Effective Date - 03/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$17.15	\$8.42	\$8.40	\$0.00	\$33.97
2	40	\$19.60	\$8.42	\$8.40	\$0.00	\$36.42
3	45	\$22.05	\$8.42	\$8.40	\$0.00	\$38.87
4	50	\$24.50	\$8.42	\$8.40	\$0.00	\$41.32
5	55	\$26.94	\$8.42	\$8.40	\$0.00	\$43.76
6	60	\$29.39	\$8.42	\$8.40	\$0.00	\$46.21
7	65	\$31.84	\$8.42	\$8.40	\$0.00	\$48.66
8	70	\$34.29	\$8.42	\$8.40	\$0.00	\$51.11
9	75	\$36.74	\$8.42	\$8.40	\$0.00	\$53.56
10	80	\$39.19	\$8.42	\$8.40	\$0.00	\$56.01

Effective Date - 10/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$17.51	\$8.42	\$8.40	\$0.00	\$34.33
2	40	\$20.01	\$8.42	\$8.40	\$0.00	\$36.83
3	45	\$22.51	\$8.42	\$8.40	\$0.00	\$39.33
4	50	\$25.02	\$8.42	\$8.40	\$0.00	\$41.84
5	55	\$27.52	\$8.42	\$8.40	\$0.00	\$44.34
6	60	\$30.02	\$8.42	\$8.40	\$0.00	\$46.84
7	65	\$32.52	\$8.42	\$8.40	\$0.00	\$49.34
8	70	\$35.02	\$8.42	\$8.40	\$0.00	\$51.84
9	75	\$37.52	\$8.42	\$8.40	\$0.00	\$54.34
10	80	\$40.02	\$8.42	\$8.40	\$0.00	\$56.84

Notes: Apprentice entered prior 9/30/10:
40/45/50/55/60/65/70/75/80/85
Steps are 850 hours

Apprentice to Journeyworker Ratio:1:3

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$14.55	\$0.00	\$66.97
	12/01/2015	\$43.66	\$10.00	\$14.55	\$0.00	\$68.21
	06/01/2016	\$44.41	\$10.00	\$14.55	\$0.00	\$68.96
	12/01/2016	\$45.64	\$10.00	\$14.55	\$0.00	\$70.19
	06/01/2017	\$46.63	\$10.00	\$14.55	\$0.00	\$71.18
	12/01/2017	\$47.62	\$10.00	\$14.55	\$0.00	\$72.17

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$14.55	\$0.00	\$66.97
	12/01/2015	\$43.66	\$10.00	\$14.55	\$0.00	\$68.21
	06/01/2016	\$44.41	\$10.00	\$14.55	\$0.00	\$68.96
	12/01/2016	\$45.64	\$10.00	\$14.55	\$0.00	\$70.19
	06/01/2017	\$46.63	\$10.00	\$14.55	\$0.00	\$71.18
	12/01/2017	\$47.62	\$10.00	\$14.55	\$0.00	\$72.17

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 103</i>	09/01/2015	\$34.25	\$13.00	\$14.06	\$0.00	\$61.31
	03/01/2016	\$34.63	\$13.00	\$14.55	\$0.00	\$62.18

Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103

Effective Date - 09/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$13.70	\$13.00	\$0.41	\$0.00	\$27.11
2	40	\$13.70	\$13.00	\$0.41	\$0.00	\$27.11
3	45	\$15.41	\$13.00	\$11.03	\$0.00	\$39.44
4	45	\$15.41	\$13.00	\$11.03	\$0.00	\$39.44
5	50	\$17.13	\$13.00	\$11.30	\$0.00	\$41.43
6	55	\$18.84	\$13.00	\$11.58	\$0.00	\$43.42
7	60	\$20.55	\$13.00	\$11.86	\$0.00	\$45.41
8	65	\$22.26	\$13.00	\$12.13	\$0.00	\$47.39
9	70	\$23.98	\$13.00	\$12.41	\$0.00	\$49.39
10	75	\$25.69	\$13.00	\$12.68	\$0.00	\$51.37

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$13.85	\$13.00	\$0.42	\$0.00	\$27.27
2	40	\$13.85	\$13.00	\$0.42	\$0.00	\$27.27
3	45	\$15.58	\$13.00	\$11.52	\$0.00	\$40.10
4	45	\$15.58	\$13.00	\$11.52	\$0.00	\$40.10
5	50	\$17.32	\$13.00	\$11.79	\$0.00	\$42.11
6	55	\$19.05	\$13.00	\$12.06	\$0.00	\$44.11
7	60	\$20.78	\$13.00	\$12.34	\$0.00	\$46.12
8	65	\$22.51	\$13.00	\$12.62	\$0.00	\$48.13
9	70	\$24.24	\$13.00	\$12.90	\$0.00	\$50.14
10	75	\$25.97	\$13.00	\$13.17	\$0.00	\$52.14

Notes:

Apprentice to Journeyworker Ratio:1:1

TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2015	\$48.80	\$10.18	\$18.57	\$0.00	\$77.55
	02/01/2016	\$49.37	\$10.18	\$18.57	\$0.00	\$78.12
	08/01/2016	\$50.27	\$10.18	\$18.65	\$0.00	\$79.10
	02/01/2017	\$50.84	\$10.18	\$18.65	\$0.00	\$79.67

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 08/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.40	\$10.18	\$18.57	\$0.00	\$53.15
2	60	\$29.28	\$10.18	\$18.57	\$0.00	\$58.03
3	70	\$34.16	\$10.18	\$18.57	\$0.00	\$62.91
4	80	\$39.04	\$10.18	\$18.57	\$0.00	\$67.79
5	90	\$43.92	\$10.18	\$18.57	\$0.00	\$72.67

Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.69	\$10.18	\$18.57	\$0.00	\$53.44
2	60	\$29.62	\$10.18	\$18.57	\$0.00	\$58.37
3	70	\$34.56	\$10.18	\$18.57	\$0.00	\$63.31
4	80	\$39.50	\$10.18	\$18.57	\$0.00	\$68.25
5	90	\$44.43	\$10.18	\$18.57	\$0.00	\$73.18

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2015	\$36.45	\$7.30	\$13.40	\$0.00	\$57.15
	12/01/2015	\$37.20	\$7.30	\$13.40	\$0.00	\$57.90
	06/01/2016	\$37.95	\$7.30	\$13.40	\$0.00	\$58.65
	12/01/2016	\$38.95	\$7.30	\$13.40	\$0.00	\$59.65

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2015	\$35.17	\$7.30	\$13.40	\$0.00	\$55.87
	12/01/2015	\$35.92	\$7.30	\$13.40	\$0.00	\$56.62
	06/01/2016	\$36.67	\$7.30	\$13.40	\$0.00	\$57.37
	12/01/2016	\$37.67	\$7.30	\$13.40	\$0.00	\$58.37

For apprentice rates see "Apprentice- LABORER"

TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2015	\$35.05	\$7.30	\$13.40	\$0.00	\$55.75
	12/01/2015	\$35.80	\$7.30	\$13.40	\$0.00	\$56.50
	06/01/2016	\$36.55	\$7.30	\$13.40	\$0.00	\$57.25
	12/01/2016	\$37.55	\$7.30	\$13.40	\$0.00	\$58.25

For apprentice rates see "Apprentice- LABORER"

TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$14.55	\$0.00	\$66.97
	12/01/2015	\$43.66	\$10.00	\$14.55	\$0.00	\$68.21
	06/01/2016	\$44.41	\$10.00	\$14.55	\$0.00	\$68.96
	12/01/2016	\$45.64	\$10.00	\$14.55	\$0.00	\$70.19
	06/01/2017	\$46.63	\$10.00	\$14.55	\$0.00	\$71.18
	12/01/2017	\$47.62	\$10.00	\$14.55	\$0.00	\$72.17

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$32.52	\$10.41	\$9.33	\$0.00	\$52.26
	12/01/2015	\$32.52	\$10.41	\$10.08	\$0.00	\$53.01
	06/01/2016	\$33.02	\$10.41	\$10.08	\$0.00	\$53.51
	08/01/2016	\$33.02	\$10.91	\$10.08	\$0.00	\$54.01
	12/01/2016	\$33.02	\$10.91	\$10.89	\$0.00	\$54.82
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	06/01/2015	\$47.33	\$7.30	\$13.80	\$0.00	\$68.43
	12/01/2015	\$48.08	\$7.30	\$13.80	\$0.00	\$69.18
	06/01/2016	\$48.83	\$7.30	\$13.80	\$0.00	\$69.93
	12/01/2016	\$49.83	\$7.30	\$13.80	\$0.00	\$70.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	06/01/2015	\$49.33	\$7.30	\$13.80	\$0.00	\$70.43
	12/01/2015	\$50.08	\$7.30	\$13.80	\$0.00	\$71.18
	06/01/2016	\$50.83	\$7.30	\$13.80	\$0.00	\$71.93
	12/01/2016	\$51.83	\$7.30	\$13.80	\$0.00	\$72.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2015	\$39.40	\$7.30	\$13.80	\$0.00	\$60.50
	12/01/2015	\$40.15	\$7.30	\$13.80	\$0.00	\$61.25
	06/01/2016	\$40.90	\$7.30	\$13.80	\$0.00	\$62.00
	12/01/2016	\$41.90	\$7.30	\$13.80	\$0.00	\$63.00
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2015	\$41.40	\$7.30	\$13.80	\$0.00	\$62.50
	12/01/2015	\$42.15	\$7.30	\$13.80	\$0.00	\$63.25
	06/01/2016	\$42.90	\$7.30	\$13.80	\$0.00	\$64.00
	12/01/2016	\$43.90	\$7.30	\$13.80	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$31.94	\$10.41	\$9.33	\$0.00	\$51.68
	12/01/2015	\$31.94	\$10.41	\$10.08	\$0.00	\$52.43
	06/01/2016	\$32.44	\$10.41	\$10.08	\$0.00	\$52.93
	08/01/2016	\$32.44	\$10.91	\$10.08	\$0.00	\$53.43
	12/01/2016	\$32.44	\$10.91	\$10.89	\$0.00	\$54.24
WAGON DRILL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2015	\$31.40	\$7.30	\$12.30	\$0.00	\$51.00
	12/01/2015	\$31.90	\$7.30	\$12.30	\$0.00	\$51.50
	06/01/2016	\$32.40	\$7.30	\$12.30	\$0.00	\$52.00
	12/01/2016	\$33.15	\$7.30	\$12.30	\$0.00	\$52.75
For apprentice rates see "Apprentice- LABORER"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$14.55	\$0.00	\$67.38
	12/01/2015	\$44.08	\$10.00	\$14.55	\$0.00	\$68.63
	06/01/2016	\$44.83	\$10.00	\$14.55	\$0.00	\$69.38
	12/01/2016	\$46.08	\$10.00	\$14.55	\$0.00	\$70.63
	06/01/2017	\$47.08	\$10.00	\$14.55	\$0.00	\$71.63
	12/01/2017	\$48.08	\$10.00	\$14.55	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS & GASFITTERS LOCAL 12 (Local 138)</i>	09/01/2015	\$46.38	\$10.82	\$15.14	\$0.00	\$72.34
	03/01/2016	\$47.53	\$10.82	\$15.14	\$0.00	\$73.49
	09/01/2016	\$48.58	\$10.82	\$15.14	\$0.00	\$74.54
	03/01/2017	\$49.58	\$10.82	\$15.14	\$0.00	\$75.54
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Rental of Equipment - East						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$31.65	\$10.41	\$0.00	\$0.00	\$42.06
	12/01/2015	\$31.65	\$10.41	\$0.00	\$0.00	\$42.06
	06/01/2016	\$32.15	\$10.41	\$0.00	\$0.00	\$42.56
	08/01/2016	\$32.15	\$10.91	\$0.00	\$0.00	\$43.06
	12/01/2016	\$32.15	\$10.91	\$0.00	\$0.00	\$43.06
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$31.72	\$10.41	\$0.00	\$0.00	\$42.13
	12/01/2015	\$31.72	\$10.41	\$0.00	\$0.00	\$42.13
	06/01/2016	\$32.22	\$10.41	\$0.00	\$0.00	\$42.63
	08/01/2016	\$32.22	\$10.91	\$0.00	\$0.00	\$43.13
	12/01/2016	\$32.22	\$10.91	\$0.00	\$0.00	\$43.13
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$31.84	\$10.41	\$0.00	\$0.00	\$42.25
	12/01/2015	\$31.84	\$10.41	\$0.00	\$0.00	\$42.25
	06/01/2016	\$32.34	\$10.41	\$0.00	\$0.00	\$42.75
	08/01/2016	\$32.34	\$10.91	\$0.00	\$0.00	\$43.25
	12/01/2016	\$32.34	\$10.91	\$0.00	\$0.00	\$43.25
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$88.29	\$9.80	\$0.00	\$0.00	\$98.09
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$0.00	\$0.00	\$52.83
	12/01/2015	\$44.08	\$10.00	\$0.00	\$0.00	\$54.08
	06/01/2016	\$44.83	\$10.00	\$0.00	\$0.00	\$54.83
	12/01/2016	\$46.08	\$10.00	\$0.00	\$0.00	\$56.08
	06/01/2017	\$47.08	\$10.00	\$0.00	\$0.00	\$57.08
	12/01/2017	\$48.08	\$10.00	\$0.00	\$0.00	\$58.08
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$0.00	\$0.00	\$52.83
	12/01/2015	\$44.08	\$10.00	\$0.00	\$0.00	\$54.08
	06/01/2016	\$44.83	\$10.00	\$0.00	\$0.00	\$54.83
	12/01/2016	\$46.08	\$10.00	\$0.00	\$0.00	\$56.08
	06/01/2017	\$47.08	\$10.00	\$0.00	\$0.00	\$57.08
	12/01/2017	\$48.08	\$10.00	\$0.00	\$0.00	\$58.08
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BULLDOZER/GRADER/SCRAPER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$0.00	\$0.00	\$52.42
	12/01/2015	\$43.66	\$10.00	\$0.00	\$0.00	\$53.66
	06/01/2016	\$44.41	\$10.00	\$0.00	\$0.00	\$54.41
	12/01/2016	\$45.64	\$10.00	\$0.00	\$0.00	\$55.64
	06/01/2017	\$46.63	\$10.00	\$0.00	\$0.00	\$56.63
	12/01/2017	\$47.62	\$10.00	\$0.00	\$0.00	\$57.62
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$43.83	\$10.00	\$0.00	\$0.00	\$53.83
	12/01/2015	\$45.08	\$10.00	\$0.00	\$0.00	\$55.08
	06/01/2016	\$45.83	\$10.00	\$0.00	\$0.00	\$55.83
	12/01/2016	\$47.08	\$10.00	\$0.00	\$0.00	\$57.08
	06/01/2017	\$48.08	\$10.00	\$0.00	\$0.00	\$58.08
	12/01/2017	\$49.08	\$10.00	\$0.00	\$0.00	\$59.08
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$29.61	\$10.00	\$0.00	\$0.00	\$39.61
	12/01/2015	\$30.48	\$10.00	\$0.00	\$0.00	\$40.48
	06/01/2016	\$31.00	\$10.00	\$0.00	\$0.00	\$41.00
	12/01/2016	\$31.87	\$10.00	\$0.00	\$0.00	\$41.87
	06/01/2017	\$32.56	\$10.00	\$0.00	\$0.00	\$42.56
	12/01/2017	\$33.25	\$10.00	\$0.00	\$0.00	\$43.25
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$58.86	\$9.80	\$0.00	\$0.00	\$68.66
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$42.04	\$9.80	\$0.00	\$0.00	\$51.84
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$63.06	\$9.80	\$0.00	\$0.00	\$72.86
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$88.23	\$9.80	\$0.00	\$0.00	\$98.03
FLAGGER & SIGNALER <i>LABORERS - ZONE 2</i>	06/01/2015	\$20.50	\$7.30	\$0.00	\$0.00	\$27.80
	12/01/2015	\$20.50	\$7.30	\$0.00	\$0.00	\$27.80
	06/01/2016	\$20.50	\$7.30	\$0.00	\$0.00	\$27.80
	12/01/2016	\$20.50	\$7.30	\$0.00	\$0.00	\$27.80
For apprentice rates see "Apprentice- LABORER"						
FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$0.00	\$0.00	\$52.83
	12/01/2015	\$44.08	\$10.00	\$0.00	\$0.00	\$54.08
	06/01/2016	\$44.83	\$10.00	\$0.00	\$0.00	\$54.83
	12/01/2016	\$46.08	\$10.00	\$0.00	\$0.00	\$56.08
	06/01/2017	\$47.08	\$10.00	\$0.00	\$0.00	\$57.08
	12/01/2017	\$48.08	\$10.00	\$0.00	\$0.00	\$58.08
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$29.61	\$10.00	\$0.00	\$0.00	\$39.61
	12/01/2015	\$30.48	\$10.00	\$0.00	\$0.00	\$40.48
	06/01/2016	\$31.00	\$10.00	\$0.00	\$0.00	\$41.00
	12/01/2016	\$31.87	\$10.00	\$0.00	\$0.00	\$41.87
	06/01/2017	\$32.56	\$10.00	\$0.00	\$0.00	\$42.56
	12/01/2017	\$33.25	\$10.00	\$0.00	\$0.00	\$43.25
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$0.00	\$0.00	\$52.83
	12/01/2015	\$44.08	\$10.00	\$0.00	\$0.00	\$54.08
	06/01/2016	\$44.83	\$10.00	\$0.00	\$0.00	\$54.83
	12/01/2016	\$46.08	\$10.00	\$0.00	\$0.00	\$56.08
	06/01/2017	\$47.08	\$10.00	\$0.00	\$0.00	\$57.08
	12/01/2017	\$48.08	\$10.00	\$0.00	\$0.00	\$58.08

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 06/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$23.56	\$10.00	\$0.00	\$0.00	\$33.56
2	60	\$25.70	\$10.00	\$0.00	\$0.00	\$35.70
3	65	\$27.84	\$10.00	\$0.00	\$0.00	\$37.84
4	70	\$29.98	\$10.00	\$0.00	\$0.00	\$39.98
5	75	\$32.12	\$10.00	\$0.00	\$0.00	\$42.12
6	80	\$34.26	\$10.00	\$0.00	\$0.00	\$44.26
7	85	\$36.41	\$10.00	\$0.00	\$0.00	\$46.41
8	90	\$38.55	\$10.00	\$0.00	\$0.00	\$48.55

Effective Date - 12/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$24.24	\$10.00	\$0.00	\$0.00	\$34.24
2	60	\$26.45	\$10.00	\$0.00	\$0.00	\$36.45
3	65	\$28.65	\$10.00	\$0.00	\$0.00	\$38.65
4	70	\$30.86	\$10.00	\$0.00	\$0.00	\$40.86
5	75	\$33.06	\$10.00	\$0.00	\$0.00	\$43.06
6	80	\$35.26	\$10.00	\$0.00	\$0.00	\$45.26
7	85	\$37.47	\$10.00	\$0.00	\$0.00	\$47.47
8	90	\$39.67	\$10.00	\$0.00	\$0.00	\$49.67

Notes:

Apprentice to Journeyworker Ratio:1:6

LABORER	06/01/2015	\$31.15	\$7.30	\$0.00	\$0.00	\$38.45
LABORERS - ZONE 2	12/01/2015	\$31.65	\$7.30	\$0.00	\$0.00	\$38.95
	06/01/2016	\$32.15	\$7.30	\$0.00	\$0.00	\$39.45
	12/01/2016	\$32.90	\$7.30	\$0.00	\$0.00	\$40.20

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - LABORER - Zone 2

Effective Date - 06/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$18.69	\$7.30	\$0.00	\$0.00	\$25.99
2	70	\$21.81	\$7.30	\$0.00	\$0.00	\$29.11
3	80	\$24.92	\$7.30	\$0.00	\$0.00	\$32.22
4	90	\$28.04	\$7.30	\$0.00	\$0.00	\$35.34

Effective Date - 12/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$18.99	\$7.30	\$0.00	\$0.00	\$26.29
2	70	\$22.16	\$7.30	\$0.00	\$0.00	\$29.46
3	80	\$25.32	\$7.30	\$0.00	\$0.00	\$32.62
4	90	\$28.49	\$7.30	\$0.00	\$0.00	\$35.79

Notes:

Apprentice to Journeyworker Ratio:1:5

OILER (OTHER THAN TRUCK CRANES,GRADALLS) OPERATING ENGINEERS LOCAL 4	06/01/2015	\$21.97	\$10.00	\$0.00	\$0.00	\$31.97
	12/01/2015	\$22.62	\$10.00	\$0.00	\$0.00	\$32.62
	06/01/2016	\$23.01	\$10.00	\$0.00	\$0.00	\$33.01
	12/01/2016	\$23.66	\$10.00	\$0.00	\$0.00	\$33.66
	06/01/2017	\$24.17	\$10.00	\$0.00	\$0.00	\$34.17
	12/01/2017	\$24.69	\$10.00	\$0.00	\$0.00	\$34.69

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4	06/01/2015	\$25.68	\$10.00	\$0.00	\$0.00	\$35.68
	12/01/2015	\$26.43	\$10.00	\$0.00	\$0.00	\$36.43
	06/01/2016	\$26.89	\$10.00	\$0.00	\$0.00	\$36.89
	12/01/2016	\$27.64	\$10.00	\$0.00	\$0.00	\$37.64
	06/01/2017	\$28.24	\$10.00	\$0.00	\$0.00	\$38.24
	12/01/2017	\$28.85	\$10.00	\$0.00	\$0.00	\$38.85

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OTHER POWER DRIVEN EQUIPMENT - CLASS II OPERATING ENGINEERS LOCAL 4	06/01/2015	\$42.42	\$10.00	\$0.00	\$0.00	\$52.42
	12/01/2015	\$43.66	\$10.00	\$0.00	\$0.00	\$53.66
	06/01/2016	\$44.41	\$10.00	\$0.00	\$0.00	\$54.41
	12/01/2016	\$45.64	\$10.00	\$0.00	\$0.00	\$55.64
	06/01/2017	\$46.63	\$10.00	\$0.00	\$0.00	\$56.63
	12/01/2017	\$47.62	\$10.00	\$0.00	\$0.00	\$57.62

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PANEL & PICKUP TRUCKS DRIVER TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2012	\$30.28	\$9.07	\$0.00	\$0.00	\$39.35
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$0.00	\$0.00	\$52.83
	12/01/2015	\$44.08	\$10.00	\$0.00	\$0.00	\$54.08
	06/01/2016	\$44.83	\$10.00	\$0.00	\$0.00	\$54.83
	12/01/2016	\$46.08	\$10.00	\$0.00	\$0.00	\$56.08
	06/01/2017	\$47.08	\$10.00	\$0.00	\$0.00	\$57.08
	12/01/2017	\$48.08	\$10.00	\$0.00	\$0.00	\$58.08
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.83	\$10.00	\$0.00	\$0.00	\$52.83
	12/01/2015	\$44.08	\$10.00	\$0.00	\$0.00	\$54.08
	06/01/2016	\$44.83	\$10.00	\$0.00	\$0.00	\$54.83
	12/01/2016	\$46.08	\$10.00	\$0.00	\$0.00	\$56.08
	06/01/2017	\$47.08	\$10.00	\$0.00	\$0.00	\$57.08
	12/01/2017	\$48.08	\$10.00	\$0.00	\$0.00	\$58.08
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$29.61	\$10.00	\$0.00	\$0.00	\$39.61
	12/01/2015	\$30.48	\$10.00	\$0.00	\$0.00	\$40.48
	06/01/2016	\$31.00	\$10.00	\$0.00	\$0.00	\$41.00
	12/01/2016	\$31.87	\$10.00	\$0.00	\$0.00	\$41.87
	06/01/2017	\$32.56	\$10.00	\$0.00	\$0.00	\$42.56
	12/01/2017	\$33.25	\$10.00	\$0.00	\$0.00	\$43.25
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$0.00	\$0.00	\$52.42
	12/01/2015	\$43.66	\$10.00	\$0.00	\$0.00	\$53.66
	06/01/2016	\$44.41	\$10.00	\$0.00	\$0.00	\$54.41
	12/01/2016	\$45.64	\$10.00	\$0.00	\$0.00	\$55.64
	06/01/2017	\$46.63	\$10.00	\$0.00	\$0.00	\$56.63
	12/01/2017	\$47.62	\$10.00	\$0.00	\$0.00	\$57.62
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$31.94	\$10.41	\$0.00	\$0.00	\$42.35
	12/01/2015	\$31.94	\$10.41	\$0.00	\$0.00	\$42.35
	06/01/2016	\$32.44	\$10.41	\$0.00	\$0.00	\$42.85
	08/01/2016	\$32.44	\$10.91	\$0.00	\$0.00	\$43.35
	12/01/2016	\$32.44	\$10.91	\$0.00	\$0.00	\$43.35
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$32.23	\$10.41	\$0.00	\$0.00	\$42.64
	12/01/2015	\$32.23	\$10.41	\$0.00	\$0.00	\$42.64
	06/01/2016	\$32.73	\$10.41	\$0.00	\$0.00	\$43.14
	08/01/2016	\$32.73	\$10.91	\$0.00	\$0.00	\$43.64
	12/01/2016	\$32.73	\$10.91	\$0.00	\$0.00	\$43.64
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.42	\$10.00	\$0.00	\$0.00	\$52.42
	12/01/2015	\$43.66	\$10.00	\$0.00	\$0.00	\$53.66
	06/01/2016	\$44.41	\$10.00	\$0.00	\$0.00	\$54.41
	12/01/2016	\$45.64	\$10.00	\$0.00	\$0.00	\$55.64
	06/01/2017	\$46.63	\$10.00	\$0.00	\$0.00	\$56.63
	12/01/2017	\$47.62	\$10.00	\$0.00	\$0.00	\$57.62
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$32.52	\$10.41	\$0.00	\$0.00	\$42.93
	12/01/2015	\$32.52	\$10.41	\$0.00	\$0.00	\$42.93
	06/01/2016	\$33.02	\$10.41	\$0.00	\$0.00	\$43.43
	08/01/2016	\$33.02	\$10.91	\$0.00	\$0.00	\$43.93
	12/01/2016	\$33.02	\$10.91	\$0.00	\$0.00	\$43.93
TREE TRIMMER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/01/2015	\$18.05	\$3.55	\$0.00	\$0.00	\$21.60
	01/31/2016	\$18.51	\$3.55	\$0.00	\$0.00	\$22.06
This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is not on the ground. This classification does not apply to wholesale tree removal.						
TREE TRIMMER GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/01/2015	\$15.92	\$3.55	\$0.00	\$0.00	\$19.47
	01/31/2016	\$16.32	\$3.55	\$0.00	\$0.00	\$19.87
This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is on the ground. This classification does not apply to wholesale tree removal.						
VAC-HAUL/CATCH BASIN CLEANING <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2015	\$31.94	\$10.41	\$0.00	\$0.00	\$42.35
	12/01/2015	\$31.94	\$10.41	\$0.00	\$0.00	\$42.35
	06/01/2016	\$32.44	\$10.41	\$0.00	\$0.00	\$42.85
	08/01/2016	\$32.44	\$10.91	\$0.00	\$0.00	\$43.35
	12/01/2016	\$32.44	\$10.91	\$0.00	\$0.00	\$43.35

Additional Apprentices Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentices ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours.)

Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

** Multiple ratios are listed in the comment field.

*** APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.

**** APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.

SECTION 01 33 23: SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 GENERAL SUBMITTAL PROCEDURES

- A. Submittals shall be sent to the Owner's Representative via email in PDF format. Hard/paper copies are not desired. Physical samples shall be delivered to the Owner's Representative in person or from a shipping company.
- B. The Owner's Representative has 7 days to review the submittals and return them to the Contractor, also in PDF format.
- C. Transmittal: Include a transmittal with each submittal identifying the item clearly.

PART 2 - PRODUCTS-not used

PART 3 - EXECUTION-not used

**END OF SECTION 01 33 23
SUBMITTALS**

SECTION 01 35 23: SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. The work of this section consists of establishing an effective accident prevention program and providing a safe environment for all personnel and visitors.

1.2 QUALITY ASSURANCE

- A. Comply with contract clauses, Federal, state, and local safety and health requirements, the most stringent shall apply. Equipment or tools not meeting OSHA requirements will not be allowed on the project sites. Failure to comply with the requirements of this section and related sections may result in suspension of work.
- B. Qualifications of Employees:
 - 1. All employees must be physically qualified and able to perform their assigned duties in a safe manner.
 - 2. Do not allow employees to perform work whose ability or alertness is impaired because of prescription or illegal drug use, fatigue, illness, intoxication, or other conditions that may expose themselves or others to injury.
 - 3. Operators of vehicles, mobile equipment, hoisting equipment, and hazardous plant equipment shall be able to understand signs, signals, and operating instructions, and be fully capable of operating such equipment. Provide operating instructions for all equipment. Newly hired operators shall be individually tested by an experienced operator or supervisor to determine if they are capable of safely operating equipment.

PART 2 - PRODUCTS

2.1 ACCIDENT PREVENTION PLAN

- A. The Plan shall be written to comply with OSHA and project requirements.

2.2 FIRST AID FACILITIES

- A. Provide adequate facilities for the number of employees and the hazards associated with the types of ongoing construction work at the site.

2.3 PERSONNEL PROTECTIVE EQUIPMENT

- A. Meet requirements of applicable ANSI standards.

PART 3 - EXECUTION

3.1 EMERGENCY INSTRUCTIONS

- A. Post telephone numbers and reporting instructions for ambulance, physician, hospital, fire department, and police in conspicuous locations at the work site.

3.2 FIRE AND LIFE SAFETY

- A. Comply with the requirements of NFPA 241 (Standard for Safeguarding Construction, Alteration, and Demolition Operations).
- B. Store hazardous materials in accordance with manufacturer's and OSHA recommendations. Maintain readily available, on site, MSDS for each chemical.
 - 1. Maintain a spill emergency response kit.

3.3 PROTECTIVE EQUIPMENT

- A. Inspect personal protective equipment daily and maintain in a serviceable condition. Clean, sanitize, and repair personal items, as appropriate, before issuing them to another individual.
- B. Inspect and maintain other protective equipment and devices before use and on a periodic basis to ensure safe operation.

3.4 HARD HATS AND PROTECTIVE EQUIPMENT AREAS

- A. A hard hat area shall be designated by the Contractor. The hard hat area shall be posted by the Contractor in a manner satisfactory to the Owner's Representative.
- B. It is the Contractor's responsibility to require all those working on or visiting the site to wear hard hats and other necessary personal protective equipment at all times.

**END OF SECTION 01 35 23
SAFETY REQUIREMENTS**

SECTION 01 50 00: TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.2 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum as required.
- B. Water Service: Water from existing water system is available for use with metering and with payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service: Electric power from existing system is available for use with metering and with payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Temporary materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.
- B. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.76-mm-) thick, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts.
- C. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide concrete or galvanized steel bases for supporting posts.
- D. Safety Barrier Fence: Orange plastic fence, minimum height, 4 feet
- E. Barrier Tape: Yellow tape Imprinted with "CAUTION: CONSTRUCTION AREA", manufactured by Reef Industries, Inc., Houston, Texas, or approved equal.

2.2 TEMPORARY FACILITIES

- A. Sufficiently lighted and ventilated toilet facilities in weatherproof, sight proof, handicap accessible, sturdy enclosures with privacy locks.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - 1. Locate facilities to limit site disturbance and as directed by the Owner's Representative.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
- B. Potable water is not available on site. Furnish cool, potable water for construction personnel in locations convenient to work stations.
- C. Sanitary Facilities: Provide temporary toilets, and wash facilities for use by construction personnel.
 - 1. Place in approved locations secluded from public observation and convenient to work stations. Relocate as work progress requires.
 - 2. Maintain and clean toilet facilities at least weekly.
 - 3. Completely remove sanitary facilities on completion of work.
- D. Electric Power Service: Use of existing electric power service will be permitted.
 - 1. When temporary connections are removed, restore existing utility services to their original condition.
- E. Telephone Service: No telephone service is available on site for Contractor's use. Make arrangements with Telephone Company and pay all costs.

3.3 SUPPORT FACILITIES INSTALLATION

- A. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.

- B. Project Identification and Temporary Signs: City will provide Contractor with temporary identification sign to be installed by the Contractor.
 - 1. Provide temporary, directional signs for construction personnel and visitors.
 - 2. Maintain and touchup signs so they are legible at all times.
- C. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Storm water Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of storm water from heavy rains.
- C. Site Enclosure Fence:
 - 1. Extent of Fence: Portion determined sufficient to restrict access to site and accommodate construction operations.
- D. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- E. Barricades, Warning Signs, and Lights: Comply with requirements of MUTCD, part IV, 2003 edition and authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
 - 1. Responsible Person: A capable and qualified person shall be placed in charge of fire protection. The responsibilities shall include locating and maintaining fire protective equipment and establishing and maintaining safe torch cutting and welding procedures.
 - 2. Smoking: Smoking within buildings or temporary storage sheds is prohibited.
 - 3. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of NPS and authorities having jurisdiction. Check with park; many require "burn permits" for welding
 - 4. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 5. Hazard Control: Take all necessary precautions to prevent fire during construction.
 - 6. Spark Arresters: Equip all gasoline or diesel powered equipment used during periods of potential fire hazards or in potential forest and grass fire locations with spark arresters approved by the USDA Forest Service.
 - 7. Vehicles and Equipment: Provide one extinguisher on each vehicle or piece of equipment.
 - 8. Service and Refueling Areas: Locate areas a minimum of 50 feet from buildings. Shut down equipment before refueling.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

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- B. Maintenance: Maintain facilities in good operating condition until removal.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

END OF SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

SECTION 01 77 00: CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 1. Substantial Completion and Final Inspection.
 2. Warranties.
 3. Final cleaning.

1.2 SUBSTANTIAL COMPLETION AND FINAL INSPECTION

- A. When project, or designated portion of project, is substantially complete, request in writing a final inspection. Upon receipt of written request that project is substantially complete, the Owner's Representative will proceed with inspection within 3 days of receipt of request or will advise the Contractor of items that prevent the project from being designated as substantially complete.
- B. If, following final inspection, the work is determined to be substantially complete, Owner's Representative will prepare a Punch List to be corrected before final acceptance and issue a Letter of Substantial Completion. Contractor shall complete the work described on the Punch List within 7 calendar days, as weather permits. If the Contractor fails to complete the work within this time frame, the Owner's Representative may either replace or correct the work with an appropriate reduction in the contract price or charge for re-inspection costs in accordance with the Inspection of Construction clause of the contract.
- C. If, following final inspection, the work is not determined to be substantially complete; Owner's Representative will notify Contractor in writing. After completing work, Contractor shall request a new final inspection. All re-inspection costs may be charged against the Contractor in accordance with the Inspection of Construction clause of the contract.

1.3 FINAL ACCEPTANCE OF THE WORK

- A. Prior to requesting inspection for verification of completion of all outstanding items.
- B. After all deficiencies have been corrected, a Letter of Final Acceptance will be issued.

1.4 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Owner's Representative for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

PART 2 - PRODUCTS: NOT USED

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers for final cleaning. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove labels that are not permanent.
 - f. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - g. Leave Project clean and ready for occupancy.

END OF SECTION 01 77 00
CLOSEOUT PROCEDURES

SECTION 04 10 00: MASONRY REPAIRS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to furnish and install designated Site Improvements and related items as indicated on the Contract Documents, as specified in this Section, and includes, but is not limited to, the following:
 - 1. Dry Laid Stone Wall Repairs
 - 2. Wet Laid Stone Wall and Brick Vault Repairs
 - 3. Stainless Steel Reinforcement Elements

1.3 REFERENCES

- A. The following standards shall apply to the work of this Section:
 - ASTM A276- Threaded Round Stainless Steel Bar Stock.
 - ASTM C144 - Sand for Mortar and Grout
 - ASTM C1713 – Mortar for the Repair of Historic Masonry

1.4 SUBMITTALS

- A. Manufacturer's Product Literature (Required Prior to Ordering):
 - 1. Replacement Brick.
- B. Fully Detailed Manufacturer's Shop Drawings (prior to fabrication):
 - 1. Cintec Anchors.
 - 2. Stainless Steel Rods and Plates.
- C. Documentation of stone masons' experience of practice, including photographs and references.

1.5 QUALITY ASSURANCE

- A. All work shall be done by experienced "Historic" stone masons with at least 10 years of practical experience in similar work.

PART 2 - PRODUCTS

2.1 STONE

- A. All New Stone shall be square, rectangular and angular granite that will be supplied by the City of Salem and delivered to the site. Stone pile shall be maintained in a neat and contained area, and unused stone will be removed by the City at the end of the project. Clean up of remaining stone fragments and dust as well as scattered unused stone units that are not within the contained area shall be the responsibility of the

Contractor.

2.2 BRICK

- A. Brick: provide new ASTM C216, Grade SW, Low Absorption. Minimum strength shall be 8,000 psi, maximum water absorption shall be 8%. New units shall match size and shape of existing surrounding brick. Color shall be one shade darker than the existing brick in its present condition.

2.3 MORTAR AND MORTAR MATERIALS

- A. Mortar for Wet Laid Wall and Vault Reconstruction and Buried Surface Parging shall meet ASTM C1713 Proportion Specification as follows: 1 part Portland Cement, 1 part Hydrated Lime, 5.5 to 6 parts bulked Sand. Sand shall be blended and pigments added as necessary to match the texture, coarseness and color of the existing mortar(s) to be matched. Pigments shall be chemically pure mineral oxides, alkali proof and light fast.
- B. Portland Cement: Type 1 white satisfying ASTM C150 complying with staining requirements of ASTM C91 for not more than 0.03% water soluble alkali. Mortar shall show no efflorescence when cast in a 2" x 7" x 1/2" slab consisting of 1 part of the cement to be used, 2 parts Ottawa plastic mortar sand and distilled water, and subjected to a 7 day "wick test" conforming to ASTM C67.
- C. Hydrated Lime: ASTM C207, Type S.
- D. Sand For mortar and grout: ASTM C144, washed, to match surrounding in color where visible, clean, fine and free of salts.

2.4 ACCESSORIES

- A. Stainless steel pins, plates and ties shall meet the requirements of ASTM A276, Type 316.
- B. CINTEC Ties and Anchors (where indicated on the Contract Documents as "Cintec Anchors"): "Cintec Anchors" as detailed, manufactured and supplied by CINTEC America Inc., as available through Conspec Associates of North Haven, CT. NOTE: These are patented, proprietary components that are required by the specific scope of work and needs of this project and for which no substitution or facsimile will be accepted. All Cintec Anchors shall have shanks composed of Grade 2205 Stainless Reinforcing Steel.
- C. Mortar Washdown Cleaner: "Sureclean 600" as manufactured by ProSoCo Corp.
- D. Stone Patching Mortar: An approved cement or latex based proprietary patching mortar for granite that is appropriate for filling around drilled plug biscuits.
- E. Adhesive and selant for pin setting shall be equal or equivalent to Sikadur Injection Gel and Tremco 2 part urethane, respectively.

PART 3 – EXECUTION

3.1 DISMANTLING OF LOOSENED WET LAID MASONRY

- A. Remove displaced and collapsed portions of wall where indicated on the Drawings. Maintain safe and stable conditions in the surrounding construction.
- B. Document and mark existing displaced stonework for reassembly in the same positions.
- C. Remove displaced wall construction down to stable subgrade or to stable, undisplaced underlying wall construction as confirmed by the Engineer.

3.2 WET LAID MASONRY REPAIR AND RECONSTRUCTION

- A. Lay masonry units as follows:
 - 1. Re-set dismantled loosened stonework using the same units within their same positions and orientations.
 - 2. Lay new stonework that replaces missing stonework using units of similar size, arrangement and orientation to the corresponding adjacent pre-existing construction.
 - 3. Replace missing bricks at the base of the entry vault using a combination of full and trimmed units that replicate the size, spacing, shape, orientation and coursing of the corresponding adjacent pre-existing construction.
 - 4. Re-set flat sided capstone to proper orientation and alignment, matching the orientation and reveal of the corresponding capstone to the south.
- B. At bed joints, provide chinkers and shims as needed to help "float" the masonry units on the mortar bed, being careful not to rock the units on the shims and create air voids or cavities in the mortar bed.
- C. At head and collar joints, fill the gaps between stone ends solidly with mortar, adding chinkers where greater than 1" thickness, in order to minimize shrinkage and sloughing.
- D. Facing stones shall be re-set to within 1/2" of their previous positions and surface alignments, or within 1" of the surrounding planes if stones did not previously exist.
- E. Bricks shall be set within 3/16" of the extrapolated orientations of the corresponding adjacent units, and within 1/8" of the established planes within which they are arranged.
- F. Tool all mortar joints to match the corresponding existing construction to remain.
- F. Provide a 1" thick stucco parge layer of mortar over all reconstructed and exposed bare masonry surfaces that are to be buried under soil.
- G. Work under this subsection shall only be done when the ambient air, material, and substrate temperatures are above 40 degrees F. by 9:00 AM and rising.

3.3 CHINKING AND REPAIR OF DRY LAID STONE WALLS

- A. Provide temporary lateral bracing and support to walls as needed to maintain safe conditions and prevent shifting of the masonry during the work.
- B. Locate all loose existing units by attempting to wiggle them and drive stone chinkers and shims into joints until units are tight.
- C. Insert new stone units into existing gaps of greater than 4" width.
 - 1. Attempt to fill each gap with one single stone unit, or at the most two units that are vertically stacked, or three where gaps are more than four times longer than they are wide when measured on the exposed face.
 - 2. All filler stones shall run continuously into the gaps by full depth of the gap, or at least three quarters of the gaps' depths depths if greater than 18".
 - 3. All stones shall be supported on at least three solid points of bearing, and then wedged tightly into place by chinking shimming stones along all other sides.
- D. Fill spaces remaining open joints and gaps between stones with angular stone chinkers. These shall be wedged into place so that they do not fall out, and shall have a horizontal depth into the wall of at least three

times their vertical height, but in no case less than 6.

- E. Do not leave any voids in walls greater than one third cubic foot in volume.
- F. Orient stones for best alignment of face and uniformly random distribution of stone size and shape.
- G. All stones shall be as close to horizontally oriented as possible with no stones inclined at more than 30 degrees from the horizontal.
- H. Match the external appearance and arrangement of the surrounding work (actually matching the original arrangement where documented), providing a similar spacing, stone size distribution, joint width, coursing and flatness to the original.
- G. Complete the above work before core drilling holes and installing Cintec Anchors, and do not remove temporary lateral bracing until at least 7 days after installation of anchors.

3.4 INSTALLATION OF CINTEC ANCHORS

- A. Coordinate design and installation of Cintec anchoring system with manufacturer.
- B. Forward contract drawings, required load information and description of conditions to a representative of Cintec America, Inc. and arrange site visit to observe existing conditions and review installation.
- C. Cintec America shall provide written verification of design load and installation and shall provide additional installation requirements and instructions. Submit to Engineer for review before proceeding with installation. Adjustments shall be made if necessary to the anchor design at no additional cost to the owner but no adjustments shall be made in diameter of rod nor reduction in embedment.
- D. Satisfy Cintec contractor training and certification requirements and successfully complete at least 4 trial anchor installations in field satisfaction of a qualified Cintec representative (unless more are required to obtain certification).
- E. Thoroughly clean off and flush out all grout leakage from the Cintec socks before it hardens and mars the stone surfaces. Do not allow grout or drilling spoil to enter the adjacent waterways.
- F. Recess ends of anchors as shown. After sufficient hardening, cut off grouting tubes and fill exposed core holes at stone surfaces with cut off ends of drilled cores and fill annular space with a color matching repair mortar.

3.5 CURING, CLEANING, AND ACCEPTANCE

- A. Moist cure all wet laid masonry work maintaining in a constantly damp state for an appropriate period to promote optimum curing but for a period of at least 48 hours following placement, protecting with plastic sheeting or approved method to retain humidity.
- B. The Engineer will review all work upon completion and before the affected areas are planted or backfilled. Prior to review, the Contractor will remove all temporary supports and shall clean all externally exposed surfaces, removing all surface applied mortar and grout, all staining, and all temporary stone markings.
- C. Reconstructed walls shall match the photographs taken during the pre-dismantling documentation with the same units located at the same relative locations, but with restored surfaces that are planar and true.

**-END OF SECTION 04 10 00-
MASONRY REPAIRS**

SECTION 31 10 01: SITE PREPARATION

PART 1-GENERAL

1.1 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 1, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.2 SUMMARY

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to prepare the site, complete, as indicated on the Contract Documents, as specified, and as follows:
 - 1. Protection of existing structures and utilities
 - 2. Salvage, stockpile on site, and reuse materials
 - 3. Salvage materials and stockpile off site
 - 4. Removal and disposal of materials
 - 5. Erosion Control (filter tube)
 - 6. Graffiti removal

1.3 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 - 1. SECTION, EARTH MOVING; Excavation and backfill.

1.4 PROTECTION

- A. Do not interfere with use of adjacent buildings or facilities. Maintain free and safe passage to and from adjacent buildings and facilities or both and between them and the public way.
- B. Cease operations and notify Owner immediately if safety of adjacent structures, workers, or the general public appears to be endangered. Take precautions to properly support structures and protect workers and general public. Do not resume operations until safety is restored.
- C. Prevent movement, settlement or collapse of adjacent services, sidewalks, driveways and trees. Assume liability for such movement, settlement, or collapse. Promptly repair damage at no cost to the Owner.

1.5 ARCHEOLOGICAL PROTECTION

- A. The entire project area is an archeologically sensitive area. If Contractor discovers potential archeological resources, Contractor shall contact the City and relocate work to non-sensitive areas until directed further.

1.6 SUBMITTALS

- A. Manufacturer's literature for graffiti remover
- B. Mockup showing graffiti removal process for approval by Owner's Representative.

PART 2-PRODUCTS

2.1 EROSION CONTROL

- A. FILTER TUBE

- a. Filter tube shall consist of biodegradable mesh tube filled with wood chips or compost. Filter tube shall be 12 inch diameter. Stakes shall be hardwood. Tubes shall be manufactured by Filtrexx, Silt Sock, or an approved equal.

2.2 GRAFFITI REMOVER

- A. Strippers for Removing Graffiti from Stone: Test each of the following, or approved equal:
 1. Peel Away 1 followed by Peel Away Neutralizer, manufactured by Dumond Chemicals, Inc.
 2. Peel Away 7, manufactured by Dumond Chemicals, Inc.
 3. Sure Klean, Fast Acting Stripper, manufactured by ProSoCo., Inc.
 4. Sure Klean Heavy Duty Paint Stripper, manufactured by ProSoCo., Inc.
 5. HT-350-Epoxy and Urethane Paint Remover, as manufactured by Hydrochemical Techniques, Inc.

PART 3-EXECUTION

3.1 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. Existing structures and utilities shall be suitably protected from damage, including but not limited to existing pavements and curbs, site walls, lighting, fencing, manholes, and utility lines.
- B. Provide and install erosion and sedimentation control at all existing catch basins, manholes and all other utility structures as identified on the drawings.

3.2 SALVAGE, STOCKPILE ON SITE, AND REUSE MATERIALS

- A. Materials indicated on the Contract Documents or designated by the Owner's Representative in the field to be salvaged shall be carefully removed, protected from damage, and put in temporary storage as follows:
 1. Salvaged material shall be stockpiled on-site in an area designated by the Owner's Representative.
 2. Salvage material shall include but are not limited to the following:
 - a. Bricks
 - b. Boulders
 - c. Stone masonry
 - d. Bench

All construction staging and materials storage shall be limited to the construction work area.

3.3 REMOVAL AND DISPOSAL OF MATERIALS

- A. Materials indicated on the Contract Documents or designated by the Owner's Representative in the field to be removed shall be dismantled, removed, and legally disposed of off-site as indicated on the Contract Documents and as specified, performed and paid for in this SECTION, SITE PREPARATION. Removals include but are not limited to the following:
 1. Trees
 2. Shrubs
 3. Invasive plant species
 4. Wood edge
 5. Concrete gate posts
 6. Gravel
 7. Signs
 8. Plywood & framing for Magazine C
 9. Miscellaneous steel gate components
- B. Material resulting from the site preparation work and not scheduled to be salvaged and which is unsuitable for reuse on the project, shall become the property of the Contractor and shall be legally

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disposed of off-site.

- C. Debris, rubbish, and other material shall be disposed of promptly and shall not be left until final cleanup of site.
- D. Existing site structures indicated on the Contract Documents to be removed, shall be completely dismantled and removed from the site.
- E. Areas formerly occupied by structures shall be regraded to conform with surrounding topography following demolition.

3.4 EROSION CONTROL

- A. Erosion control shall be constructed and installed as indicated on the Contract Documents, prior to start of clearing and grubbing operations or any earthwork operations.

3.5 MAINTENANCE AND REMOVAL OF EROSION CONTROL DEVICES

- A. Erosion Control Devices
 - 1. Sediment behind the erosion control device shall be checked twice each month and after each heavy rain. Silt shall be removed if greater than 6 in. (150 mm) deep.
 - 2. Condition of erosion control device shall be checked twice each month or more frequently as required. Damaged and/or deteriorated items shall be replaced. Erosion control devices shall be maintained in place and in effective condition.
- B. Removal of Erosion Control Devices: Erosion control devices shall be maintained until all disturbed earth has been paved or vegetated, at which time they shall be removed.
 - 1. Erosion protection material shall be kept securely anchored and in place until acceptance of stabilized, erosion and sediment controlled slope.
 - 2. All temporary erosion control devices and accessories shall be completely removed at completion of project and legally disposed of off site at no additional cost to the Owner.
 - 3. After erosion control devices are removed, areas disturbed by these devices shall be regraded and seeded and all adjacent areas repaired to a condition equal with the adjacent lawns or plantings.

3.6 GRAFFITI REMOVAL

- A. General: Remove paint from stone using strippers and form of stripper (liquid, gel, and/or poultice) selected during testing and confirmed during mock-up to achieve masonry surface free of paint.
- B. Stripper Application and Removal: Apply stripper following method of application and dwell time determined during testing and confirmed during mock-ups. Remove stripper and paint following manufacturer's directions. Rinse surface thoroughly using high pressure water. Pressure wash the entire surface of the stone wall so there is uniform cleaning to all stones, not just those that had graffiti.
- C. Additional Removal: Repeat above procedure as necessary to achieve uniformly clean masonry free of paint with surface matching standard of approved mock-up.

END OF SECTION 31 10 01
SITE PREPARATION

SECTION 31 11 00: SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to prepare the site, complete, as indicated on the Contract Documents, as specified, and as follows:
 - 1. Clearing and grubbing of existing vegetation
 - 2. Invasive vegetation management

1.3 SUBMITTALS

- A. Submit proof of applicator's license for herbicide application to the Owner's Representative.

PART 2 - PRODUCTS

2.1 HERBICIDE

- A. Herbicide shall be glyphosate specifically formalized for use for each application and vegetation type within this scope of work.

PART 3 – EXECUTION

3.1 CLEARING

- A. Trees, shrubs, stumps, brush, grasses, turf, herbaceous plants, downed timber, rubbish, organic matter, miscellaneous vegetation or extraneous debris not indicated on the Contract Documents or designated in the field by the Owner's Representative to remain shall be cleared.
- B. Clearing shall include the felling, cutting, and satisfactory disposal of all trees, stumps and vegetative debris produced through the clearing operations.
- C. Fell trees in such a way as to not injure trees to be saved. Excavation or grading within the branch spread of trees to be saved shall be performed only under the direction of the Owner's Representative unless otherwise directed.
- D. Clearing includes felling of individual trees and removal of areas of other vegetation.
- E. Cut all stumps flush with finished grade.
- F. Herbicide to be applied to all cut stumps or stems within 24 hours of vegetation being cut. Herbicide shall include a colored dye to identify which stems have been treated.

3.2 INVASIVE VEGETATION MANAGEMENT

- A. Before commencing with vegetation removal or herbicide application, hold an on-site conference with the City, City Tree Warden and the landscape architect to review the scope of work, herbicide to be used, application methods, and schedule.

- A. Several types of invasive plant species are to be controlled in this scope of work. Below is a list of the species that are to be addressed and the methods to be employed:
 - a. Japanese Knotweed: cut stems down between the second and third node (from the ground) and inject or drip 5 ml of herbicide into the stem. Paint the stem with a contrasting color of paint to identify what stems have been treated. Remove cut stems and brush from the site.
 - b. Oriental bittersweet: cut vines 2 to 4 inches above finished grade and apply herbicide immediately on the cut stems. Herbicide shall include a colored dye to identify which stems have been treated. Remove cut vines and brush from the site.
 - c. Poison Ivy: apply herbicide as a foliar spray treatment following the herbicide manufacturer's recommended application rate. Two weeks following the foliar application, cut the stems and apply herbicide immediately to the cut stems. Herbicide shall include a colored dye to identify which stems have been treated. Remove cut vines and brush from the site.
 - d. Barberry: cut shrubs 2 to 4 inches above finished grade and apply herbicide immediately on the cut stems. Herbicide shall include a colored dye to identify which stems have been treated. Remove cut branches and brush from the site.
 - e. Buckthorn: cut shrubs 2 to 4 inches above finished grade and apply herbicide immediately on the cut stems. Herbicide shall include a colored dye to identify which stems have been treated. Remove cut branches and brush from the site.
 - f. Multiflora Rose: cut shrubs 2 to 4 inches above finished grade and apply herbicide immediately on the cut stems. Herbicide shall include a colored dye to identify which stems have been treated. Remove cut branches and brush from the site.
 - g. Phragmites: cut all live and dead stems 2 to 4 inches above finished grade / surface of water, including stems matted down in water. Dab herbicide, approved for use in wetlands, on each cut stem. Herbicide shall include a colored dye to identify which stems have been treated. Remove all cut stems from site. Bag and dispose of dead seed heads.

- B. All invasive vegetation management shall be performed by November 15.

- C. Herbicide to be applied within 24 hours of vegetation being cut.

3.3 PROTECTION OF EXISTING TREES AND VEGETATION

- A. The Contractor shall make every effort not to damage existing plant materials to remain. The Contractor is required to install protection as necessary to assure undamaged plant material and adjacent conditions.

- B. Vehicles shall not be parked within the dripline or where damage may result to trees to be saved. Construction materials shall not be stored beneath trees to be saved.

- C. Repair/replace vegetation that is damaged at no additional cost to Owner. Employ certified arborist to repair damaged trees.

**-END OF SECTION 31 11 00-
SITE CLEARING**

SECTION 31 20 00: EARTH MOVING

PART 1-GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. The work of this Section consists of providing labor, equipment, materials, incidental work, and construction methods necessary to complete the EARTH MOVING, as indicated in the Contract Documents and as specified.
- A. Provide all labor, equipment, materials, incidental work, and construction methods necessary to complete the EARTH MOVING which includes, but is not necessarily limited to the following:
1. Unclassified excavation.
 2. Fill materials, fill and compaction.
 3. Drainage and dewatering as necessary to perform work in the dry.
 4. Rough grading.
 5. Removal of surplus or unsuitable materials.
 6. Dust control.
 7. Excavation, filling and grading around trees to remain.
 8. Frost protection.
 9. Preparation of subgrade for footings, foundations, slabs, pavements, and landscaping

1.3 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
1. Section, SITE PREPARATION; Site preparation including clearing and grubbing.
 2. Section, STONEDUST SURFACING; Correction of subgrades.
 3. Section, PLANTING SOILS; Placing and preparing topsoil for lawns, finish grading of planting soils.

1.4 REFERENCES

- A. The following standards shall apply to the work of this Section.
1. Associated General Contractors of America, Inc. (AGC):

Manual	Manual of Accident Prevention in Construction
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 2. American Society for Testing and Materials (ASTM):

D 422	Particle - Size Analysis of Soils
D698-00a	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ³ (600 kN-m/m ³))
D 1556	Density of Soil In-Place by the Sand Cone Method
D 1557	Test Method for Laboratory Compaction Characteristics of Soil Using Modified Method Effort

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| D 2167 | Density and Unit Weight of Soil In-Place by the Rubber Balloon Method |
| D 2487 | Classification of Soils for Engineering Purposes (Unified Soil Classification System) |
| D 2922 | Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth) |
| D 2937 | Density of Soil In-Place by the Drive-Cylinder Method |
| D 3017 | Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth) |
| D 4318 | Liquid Limit, Plastic Limit, and Plasticity Index of Soils |
| D 4491 | Test Methods for Water Permeability of Geotextiles by Permittivity |
| D 4632 | Test Method for Grab Breaking Load and Elongation of Geotextiles |
| D 4751 | Test Method for Determining the Apparent Opening Size of a Geotextile |
| D 4759 | Practice for Determining the Specification Conformance of Geosynthetics |
3. Massachusetts Department of Transportation (MassDOT):
- | | |
|----------------|--|
| Specifications | Standard Specifications for Highways and Bridges |
|----------------|--|
4. American Association of State Highway and Transportation Officials (AASHTO):
- | | |
|-----|--|
| T11 | Material Finer than 75 um (No. 200) Sieve in Mineral Aggregates by Washing |
| T27 | Sieve Analysis of Fine and Course Aggregates |

1.5 SUBMITTALS

- A. Aggregate Samples: A 70 lb. (31.85 kg) sample of each off-site material proposed for use, and of any on-site material when so requested by the Owner's Representative or testing laboratory, shall be submitted for approval.
1. Samples shall be delivered to office the Contractor's testing laboratory, as directed.
 2. Samples required in connection with compaction tests will be taken by and transported to the testing laboratory.
- B. Product Data: Submit product data for the following:
1. Each type of plastic warning tape.
- C. Test Reports: In addition to test reports required under the Paragraph, Quality Control Testing Requirements of Part 1, submit the following:
1. Mechanical gradation (sieve analysis) of each soil material proposed for fill and backfill from on-site materials and off-site borrow sources. Mechanical gradation shall be performed on off-site sources of fill and backfill materials using the same sieves as the materials specified. Mechanical gradation shall be performed on on-site fill and backfill materials using the same sieves or testing procedures as would be required for off-site borrow materials for which the on-site materials are proposed to replace.

2. One optimum moisture-maximum density curve for each soil material.
3. Report of actual unconfined compressive strength and/or results of bearing tests of each stratum tested.

1.6 QUALITY CONTROL TESTING REQUIREMENTS

- A. Contractor shall select and the Owner shall approve a qualified independent geotechnical engineering testing agency to perform on-site observation and testing during the following phases of the construction operations. Independent geotechnical engineering testing agency shall be paid directly by the Contractor.
1. Classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing.
 2. Observation during excavation and replacement of existing fill under paved areas.
 3. Observation of compaction of excavation subgrade and paved area subgrade.
 4. Observation during placement and compaction of fills.
 5. Laboratory testing and analysis of fill and bedding materials specified, as required by the Owner's Representative.
 6. Observe construction and perform water content, gradation, and compaction tests at a frequency and at locations determined by the testing laboratory and approved by the Owner. The results of these tests will be submitted to the Owner's Representative, copy to the Contractor, on a timely basis so that the Contractor can take such action as is required to remedy indicated deficiencies. During the course of construction, the testing laboratory will advise the Owner's Representative in writing with copy to Contractor if, at any time, in his opinion, the work is not in substantial conformity with the Contract Documents.
 7. Observation of fills following interruptions by rains or other inclement weather.
 8. Payments for these services will be paid for the Owner on an hourly basis and will be paid only after careful review of submitted invoices and test results.
- B. Contractor shall perform field in-place density tests according to ASTM D 1556, ASTM D 2167, or ASTM D 2937, as applicable. Testing laboratory shall submit test results directly to the Owner's Representative for review and acceptance.
1. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 3017.
 2. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gauges at beginning of work, on each different type of material encountered, and at intervals as directed by the Owner's Representative.
 3. Footing Subgrade: At footing subgrade, perform at least one test of each soil stratum to verify design bearing capacities. Subsequent verification and approval of other footing subgrade may be based on a visual comparison of each subgrade with related tested strata when acceptable to the Owner's Representative.
 4. Paved Areas: At subgrade and at each compacted fill and backfill layer, perform at least one field in-place density test for every 2,000 sq. ft. or less of paved area, but in no case fewer than three tests as directed by the Owner's Representative.
 5. Fills and Embankments: For each 500 cubic yards or fraction thereof per shift, perform at least one field in-place density test as directed by the Owner's Representative.

- C. When subgrade, fills or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required density is obtained.
- D. Testing of soils shall be in accordance with the following:

<u>Property</u>	<u>ASTM Test Method</u>
Particle - Size Analysis	D 422
Liquid Limit	D 4318
Plasticity Index	D 4318

- E. The testing laboratory's presence does not include supervision or direction of the actual work by the Contractor, his employees or agents. Neither the presence of the testing laboratory, nor any observations and testing performed by the testing laboratory shall excuse the Contractor from defects discovered in his work.
- F. The Owner reserves the right to modify or waive testing laboratory services.

1.7 QUALITY ASSURANCE

- A. Codes and Standards: Perform EARTH MOVING complying with requirements of authorities having jurisdiction.
- B. Comply with applicable requirements of NFPA 495.
- C. Pre-installation Conference: Conduct conference at Project site.
 - 1. Before commencing EARTH MOVING, meet with representatives of the governing authorities, Owner, Owner's Representative, consultants, geotechnical engineer, independent testing agency, and other concerned entities. Review EARTH MOVING procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least three working days prior to convening conference. Record discussions and agreements and furnish a copy to each participant.
- D. Compliance: Comply with local safety regulations and with provisions of "Accident Prevention in Construction" published by the Associated General Contractors of America, Inc.

1.8 EXAMINATION OF EXISTING CONDITIONS

- A. The Contractor shall become thoroughly familiar with the existing conditions of the site, consult records and drawings of adjacent structures and of existing utilities and their connections, and note all conditions which may influence the work of this Section, EARTH MOVING.
 - 1. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Owner's Representative and then only after acceptable temporary utility services have been provided.
 - 2. Provide a minimum 48-hours' notice to the Owner's Representative and receive written notice to proceed before interrupting any utility.
 - 3. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shutoff services if lines are active.
- B. By submitting a bid, the Contractor affirms that he has carefully examined the site and all conditions affecting work under this Section, EARTH MOVING. No claim for additional costs will be allowed because of lack of full knowledge of existing conditions.
- C. The Contractor may, at his own expense, conduct additional subsurface testing as required for his own information.

1.9 INFORMATION NOT GUARANTEED

- A. Information in the Contract Documents relating to subsurface conditions, natural phenomena, and existing utilities and structures is from the best sources presently available. Such information is

furnished only for the information and convenience of the Contractor, and the accuracy or completeness of this information is not guaranteed.

- B. Plans, surveys, measurements, and dimensions under which the work is to be performed are believed to be correct, but the Contractor shall examine them for himself during the bidding period. Compensation for unforeseen subsurface conditions shall be in accordance with the general provisions of contract, including:

- 1. General and Supplementary Conditions and Division 1 Specification Sections

1.10 PERMITS, CODES, AND SAFETY REQUIREMENTS

- A. Comply with all rules, regulations, laws and ordinances of the City and State, and all other authorities having jurisdiction over the project site. All labor, materials, equipment and services necessary to make the work comply with such requirements shall be provided by the Contractor without additional cost to the Owner.
- B. Comply with the provisions of the Manual for Accident Prevention in Construction of the Associated General Contractors of America, Inc., and the requirements of the Occupational Safety and Health Administration, United States Department of Labor.
- C. The Contractor shall procure and pay for all permits and licenses required for the complete work specified herein and shown on the Drawings.
- D. The Contractor shall not close or obstruct any street, sidewalk, or passageway without written permission from authorities having jurisdiction. The Contractor shall so conduct his operations as to interfere as little as possible with the use ordinarily made of roads, driveways, or other facilities near enough to the work to be affected thereby.
- E. The Contractor shall secure a DIG-SAFE permit number for the project to certify notification of gas, electrical and telephone utilities. All other affected utilities shall be contacted by the Contractor who shall secure notification receipts in accordance with requirements of Massachusetts law. The phone number is 1-888-DIG-SAFE. Contractors shall notify "Dig-Safe" of contemplated excavation, demolition or explosive work in public or private ways, and utility company right-of-way or easement. This notification shall be made at least 72 hours prior to the work, but not more than sixty days before the contemplated work. Such notice shall set forth the name of the street or the route number of said way and an accurate description of the location and nature of the proposed work. The Owner's Representative requires that the notification be sent to "Dig-Safe" by certified mail, with copies to the Owner. The Architect requires a copy of the signed receipt of the delivery. "Dig-Safe" is required to respond to the notice within 72 hours from the time said notice is received by designating at the locus the location of pipes, mains, wires and conduits. Contractor shall not commence work until "Dig-Safe" has responded as noted above. The work shall then be performed in such a manner, and with reasonable precaution taken to avoid damage to utilities under the surface in said areas of the work.
- F. Contractor shall contact all utility companies whose utilities might be affected by the Work of this Section, EARTH MOVING, and notify these utility companies of contemplated excavation, demotion or explosive work in public or private ways, and utility right-of-way easement. This notification shall be made at least 72 hours prior to the work, but not more than sixty days before the contemplated work. Such notice shall set forth the name of the street or the route number of said way and an accurate description of the location and nature of the proposed work. Contractor shall secure notification receipts for submission to the Owner's Representative prior to the start of the contemplated work. Contractor shall not commence work until all utility companies have responded and provided the necessary receipts. The work shall then be performed in such a manner, and with reasonable precaution taken to avoid damage to utilities under the surface in said areas of the work.

1.11 LAYOUT AND GRADES

- A. Benchmarks: The Contractor shall maintain and/or reestablish benchmarks and survey monuments necessary for the work of these Contract Documents and as shown in the Contract Documents or found to exist on the site to provide a base reference for the construction. Replace any which may become destroyed or disturbed. The Contractor shall employ and pay all costs for a registered Civil Engineer or Surveyor who is licensed within the jurisdiction of the project site to lay out all lines and grades in accordance with the Drawings, and as necessary or required for the construction. The

selection of the registered Civil Engineer or Surveyor shall be subject to the Owner's Representative's approval.

1.12 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. Observe all rules and regulations governing the respective utilities in executing work under this Section, EARTH MOVING. The work shall be executed in such manner as to prevent any damage to adjacent property and any other property and existing improvements such as, but not limited to: streets, curbs, paving, utility lines and structures, monuments, bench marks and other public and private property. Protect existing structures and foundations from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by EARTH MOVING operations.
- B. In case of any damage or injury caused in the performance of the work, the Contractor shall, at his own expense, make good such damage or injury to the satisfaction of, and without cost to the Owner. Existing roads, sidewalks, and curbs damaged during the project work shall be repaired or replaced to their original condition at the completion of operations. The Contractor shall replace, at his own cost, existing bench marks, monuments, and other reference points which are disturbed or destroyed.
- C. Buried structures, utility lines, and the like, including those which project less than 18 in. (457 mm) above grade, which are subject to damage from construction equipment shall be clearly marked to indicate the hazard. Markers shall indicate limits of danger areas, by means which will be clearly visible to operators of trucks and other construction equipment, and shall be maintained at all times until completion of Project.
- D. Locate and mark underground utilities to remain in service before beginning the work. Protect all existing utilities to remain during operations. Do not interrupt existing utilities except when authorized in writing by authorities having jurisdiction.
- E. When an active utility line is exposed during construction its location and elevation shall be plotted on the Record Drawing by the Contractor and both the Owner's Representative and the Utility Owner notified in writing.
- F. Provide barricades, fences, lights, signs, and all other safety devices required for the protection of the public.

1.13 DEFINITIONS

- A. Base Course: The layer placed between the subbase course and surface pavement in a paving system.
- B. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations.
- C. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of pore water.
- D. Embankment: Any area on the site where the Contractor is required to raise grades to proposed subgrade elevations. Embankments are placed in layers to a predetermined elevation and cross section.
- E. Excavation: The removal of material encountered to subgrade elevations and the reuse of the material on site as Backfill, Fill or Ordinary Borrow material as it conforms to these specifications or disposal of materials removed.
- F. Finish Grade: Final grade elevations indicated on the Drawings. Spot elevations shall govern over proposed contours. Where not otherwise indicated, project site areas shall be given uniform slope between points for which finished grades are indicated or between such points and existing established grades. Spot elevations shall govern over proposed contours. No ponding of surfaces shall be allowed due to lack of improper pitches across surfaces that will not allow proper drainage to occur.
- G. Rock: A sound and solid mass, layer, or ledge of mineral matter in place of such hardness and texture that it:

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1. Mechanical Definition of Rock: Cannot be effectively loosened or broken down by ripping in a single pass with a late model tractor-mounted hydraulic ripper equipped with one digging point of standard manufacturer's design adequately sized for use with and propelled by a crawler type tractor rated between 210- and 240-net flywheel horsepower, operating in low gear, or
 2. Manual Definition of Rock: In areas where the use of the ripper described above is impracticable, rock defined as sound material of such hardness and texture that it cannot be loosened or broken by a 6 lb. (2.7 kg) drifting pick. The drifting pick shall have a handle not less than 34 in. (0.86 m) in length.
- H. Rough grade: The top surface of subbase or base courses such as gravel, crushed stone, ordinary fill, and the like, ready to receive the final surface material application. Unless stated otherwise, all rough grades shall represent compacted material depths, as specified herein.
- I. Soil: All earth materials, organic or inorganic, which have resulted from natural processes such as weathering, decay, and chemical action of in situ rock or the deposition of unconsolidated material in which more than 35 percent by weight will pass a No. 200 sieve.
- J. Surplus Materials: On-site materials not used during the course of construction.
- K. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.
- L. Structural Backfill: The designated material as indicated in the Contract Documents to attain the proposed grades abutting or adjacent to site structures.
- M. Subbase Course: The layer placed between the subgrade and base course in a paving system or the layer placed between the subgrade and surface of a pavement or walk.
- N. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase course, drainage fill, or topsoil materials.
- O. Topsoil: The upper layer of the soil profile which is supporting the growth of vegetation as evidenced by the existence therein of numerous roots and other organic matter.
- P. Unauthorized excavation: Removing materials beyond indicated subgrade elevations or dimensions without direction by the Owner's Representative. Unauthorized excavation, as well as remedial work directed by the Owner's Representative, shall be at the Contractor's expense.
- Q. Unclassified excavation: Removal of materials encountered when establishing required grade elevations to the depths and extents shown on the Contract Documents. Unclassified excavation includes removal and disposal of pavements and other obstructions visible on ground surface, underground structures and utilities indicated to be demolished and removed, material of any classification indicated in data on subsurface conditions.
- Q. Unsuitable Material: Material that is classified as "unsuitable" shall be material having at least one of the following properties:
1. Material with a maximum unit dry weight per cubic foot less than 90 lb. (40.9 kg) as determined by ASTM D 1557.
 2. Material containing visible organic matter, topsoil, organic silt, peat, construction debris, frozen material, roots, and stumps.
 3. Material which has a Liquid Limit greater than 55 when tested in accordance with ASTM D 4318.
 4. Material designated in the field by the Owner's Representative or the testing laboratory.
- R. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

- S. Utility Trench Backfill: The area bounded by the proposed finished subgrade and the cover material over the respective pipe or conduit. This material shall conform with applicable requirements for embankment or structural backfill depending on the area or zone into which the utility is installed.

1.14 COORDINATION

- A. Prior to start of EARTH MOVING the Contractor shall arrange an on-site meeting with the Owner's Representative for the purpose of establishing Contractor's schedule of operations and scheduling inspection procedures and requirements.
- B. As construction proceeds, the Contractor shall be responsible for notifying the Owner's Representative prior to start of EARTH MOVING operations requiring inspection and/or testing.

In the event that the Contractor does not notify the Owner's Representative prior to the start of EARTH MOVING operations and inspections and tests are not made or performed by the Owner's testing agents, the Owner's Representative may require the Contractor to remove all EARTH MOVING performed without the necessary inspections and replaced under the required supervision, review, inspections or tests at no additional cost to the Owner.

- C. The Contractor shall be responsible for obtaining test samples of soil materials proposed to be used and transporting them to the site sufficiently in advance of time planned for use of these materials for testing of materials to be completed. Use of these proposed materials by the Contractor prior to testing and approval or rejection, shall be at the Contractor's risk.

1.15 ARCHEOLOGICAL PROTECTION

- A. The entire project area is an archeologically sensitive area. If Contractor discovers potential archeological resources, Contractor shall contact the City and relocate work to non-sensitive areas until directed further.

PART 2 PRODUCTS

2.1 AGGREGATE MATERIALS

- A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations. Gradation requirements shall be determined by AASHTO T11 and T27.
 - 1. Borrow material shall from on-site or off-site sources shall contain salt levels less than 1.0 milliohms/cm as measured by electrical conductivity (EC2) of a 1:2 soil-water suspension (Test minus sieve #4 material.). Borrow material with levels of salt in excess of this level will be considered unsuitable material and shall be removed from the site by the Contractor at no additional cost to the Owner.
 - 2. Borrow material from on-site and off-site sources shall contain levels of heavy metals or PCB less than the following levels:

Toxic Elements Maximum Concentration (mg/kg dry weight)

Arsenic	30
Boron	300
Cadmium	14
Chromium	1000
Copper	1000
Lead	300
Mercury	10
Molybdenum	10
Nickel	200
Selenium	36
Zinc	2500
PCBs	1

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Borrow material with levels of heavy metals and PCBs in excess of these levels will be considered unsuitable material and shall be removed by the Contractor from the site and disposed of legally at no additional cost to the Owner.

3. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GW, GP, SW, and SP; free of rock or gravel larger than 2 in. (50 mm) in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.
 4. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, GM, SC, SM, ML, MH, CL, CH, OL, OH, and PT.
- B. Backfill and Fill Materials: Satisfactory soil materials as described above. On-site material for use in compacted backfill shall be natural, inorganic, granular soil, taken from areas of excavation after stripping of topsoil and removal of unsatisfactory soil materials as described above.
1. Use only backfill materials meeting the requirements of satisfactory soil materials that are free from rocks greater than 4in. (200 mm) in diameter or length, that have largest dimension no greater than $\frac{3}{4}$ lift thickness, or are no greater than $\frac{1}{2}$ ft.³ in volume. Do not use any foreign matter, such as construction debris, trash, wood, roots, leaves, sod, organic matter, or soft clay and silt. Sound pieces of building stone, masonry, and concrete from on-site sources subject to the same size limitations as stone, may be employed in backfill. Individual pieces shall be mixed into general backfill material, leaving no voids between pieces. Backfill shall be clean, non-organic material, of non-swelling character, capable of being readily compacted to form a solid, stable embankment. Pieces of bituminous pavement shall be excluded from the backfill unless their use is expressly permitted by the Owner's Representative, in which case they shall be broken up as directed. Materials containing ice or frozen lumps shall not be employed.
 2. Backfill and fill materials for use under lawns and planted areas shall be free draining materials that drain at a rate greater than or equal to one inch per hour after compaction to the specified levels.
 3. Suitable Excavated Material:
 - a. Free from clods, silt lumps or balls of clay.
 - b. Free from stones or rock fragments over 50 pounds.
 - c. Free from organics, peat, etc.
 4. Frozen Material:
 - a. Do not backfill with or on frozen materials.
 - b. Remove, or otherwise treat as necessary, previously placed material that has frozen prior to placing backfill.
 5. Wet Material:
 - a. Do not mechanically or hand compact material that is, in the opinion of the Engineer, too wet.
 - b. Do not continue backfilling until the previously placed and new materials have dried sufficiently to permit proper compaction.
- C. Ordinary borrow shall conform to ASTM D2487 soil classification groups GW, GP, SW, and SP, and be well graded, natural inorganic soil, meeting the following requirements:
1. It shall be free of organic or other weak or compressible materials, of frozen materials, and of stones larger than 4 inches (250 mm) maximum dimension.
 2. It shall be of such nature and character that it can be placed to form embankments and compacted to the specified densities in a reasonable length of time.
 3. It shall be free from highly plastic clays, from all materials subject to decay, decomposition, or dissolution and from cinders or other materials which will corrode piping or other metal.
 4. It shall have a maximum dry density of not less than 100 lbs. Per cubic foot.
 5. Material from excavation on the site may be used as ordinary fill if it meets the above requirements and is approved by the Owner's Representative.

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#50 (300 um)	8-24
#200 (75 um)	3-10

- D. Processed Gravel shall consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coatings, and deleterious materials. Gradation shall conform to the following:

<u>Sieve No.</u>	<u>% Passing by Weight</u>
3" (75 mm)	100
1 1/2" (37.5mm)	70-100
3/4" (19 mm)	50-85
#4 (4.75um)	30- 60
#200 (75 um)	0 –10

2.2 USES OF MATERIALS

- A. Uses of Fill Materials: Fill materials listed above shall be utilized as follows and as otherwise indicated on the Drawings, specified or directed.

1. Processed Gravel:
 - a. Subbase for path.
 - b. As shown on the Contract Documents.

2. Ordinary Borrow:
 - a. General site fills.
 - b. As shown on the Contract Documents.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by EARTH MOVING operations.

- B. Protect subgrade and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.

3.2 GRADES AND ELEVATIONS

- A. The Contract Documents indicate, in general, alignments, grade elevations and invert elevations. Establish the lines and grades in conformity with the Drawings. The Owner's Representative, however, may make such adjustments in the field in grades and alignments as are found necessary in order to avoid interference with any special conditions encountered.

- B. Spot elevations shall govern over proposed contours. Where not otherwise indicated, project site areas shall be given uniform slopes between points for which finished grades are indicated or between such points and existing established grades.

- C. Establish and maintain suitable stakes over all areas to be graded as directed, specified or required. Maintain sufficient reference points at all times during construction to properly perform the contract installation.

3.3 UNCLASSIFIED EXCAVATION

- A. The work of excavation shall be conducted at such locations, at such rates of progress and in such a manner as will ensure the continued progress of the work, with a minimum inconvenience to the general public.
- B. All material encountered during excavation shall be unclassified excavation and shall include the removal of boulders up to 3 cubic yards, earth, rock, concrete, covered pavements, abandoned utilities, abandoned foundations and all miscellaneous materials encountered as required for excavation. Boulders and rock over 3 cubic yards shall be covered under "Rock Excavation" in this Section, EARTH MOVING. The sequence of all excavation operations shall be such as to ensure the most efficient reuse of acceptable excavated borrow materials for particular improvement application. Acceptable materials shall be used or stockpiled for later use in backfill and subgrade preparation.
- C. Excavate all materials to the elevations, dimensions and form as shown in the Contract Documents and as specified for the construction of drainage structures, utilities, lawn and site improvements necessary for the completion of the utilities and site work. Excavate to elevations indicated or required within a tolerance of plus or minus 0.10 foot and as will allow footings to rest on firm, undisturbed earth or rock, free of loose materials, and as will permit rough grades to be at indicated or specified depths. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections.
 - 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
- D. Unauthorized Excavation: Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation.
 - 1. Any excavation which has been carried, through error, beyond specified depths or dimensions, shall be backfilled by the Contractor at his own expense with compacted gravel borrow, with concrete, or with other material as directed by the Owner's Representative.
- E. Hand Excavation: In general, machine excavation will be permitted with the exception of work in the vicinity of trees to remain, existing utilities and excavation of pipe bells which will be hand work. Excavate to 6 inches below the bottom of pipe or as shown on Drawings. Excavation to final grade shall be made in such a manner as to maintain the undisturbed bearing character of the soil exposed at the excavation level.
- F. Inspection: After completion of the excavation and prior to commencement of foundation footings, pavements and concrete slab construction, the excavation will be inspected by the Owner's Representative to ensure that foundation elevations have been reached.

3.4 STOCKPILING

- A. Stockpiling: No excavation shall be deposited or stockpiled at any time so as to endanger portions of the new or an existing structure, either by direct pressure or indirectly by overloading banks contiguous to the operation. Stockpile soil materials away from edge of excavations. Material, if stockpiled, shall be stored so as not to interfere with the established sequence of the construction. If there is not sufficient area available for stockpiling within the limits of the project, the Contractor will be required to furnish his own area for stockpiling, and for moving the material back and forth from the storage area, at no additional cost to the Owner. No excavation shall be deposited within existing tree protection zones. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water away from existing drainage structures, ponds, basins, or wetland areas. Cover stockpiles to prevent wind-blown dust. The Contractor shall provide and install all erosion control specified under the Division 1 Section, EROSION AND SEDIMENTATION CONTROL and receive payment for this work under this Section, EARTH MOVING.
- B. Throughout the course of the work the Contractor shall provide and maintain all erosion control systems for stockpiled materials.

3.5 EXCAVATION, FILLING AND GRADING AROUND TREES

- A. Excavate within drip line of trees only where indicated or directed. Notify Owner's Representative prior to any excavation.
- B. Maintain existing grade within drip line of trees, unless otherwise indicated.
- C. Place no fill within the drip line of existing trees unless otherwise shown on the Drawings.

3.6 FILLING, BACKFILLING AND COMPACTION

A. Placing Fills and Compacting:

1. Preparation: All areas to be filled or backfilled shall be free of vegetation, topsoil, wet materials, unsatisfactory soil materials, obstructions, deleterious materials, construction debris, refuse, compressible or decayable materials and standing water from ground surface prior to placing fills. Do not place fill when fill materials or material below it are frozen. No fill materials containing ice or frozen lumps shall be used.
 - a. Plow, furrow, till or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface.
2. Remove all concrete formwork, temporary shoring, bracing, and sheeting prior to inspection by Owner's Representative. If approved in writing by the Owner's Representative, leave concrete formwork, temporary shoring, bracing, or sheeting in place.
3. The Contractor shall notify the Owner's Representative when excavation is ready for formal inspection. Filling and backfilling shall not be started until conditions have been approved by the Owner's Representative.
4. At the completion of excavation and before placing any fills, proof-roll compact subgrades to the same compaction levels required for placed fills as required hereinafter. Compaction procedure shall be approved by the Owner's Representative.
 - a. Notify Owner's Representative when excavations have reached required subgrade.
 - b. When test results determines that unforeseen unsatisfactory soil is present, stop excavation work immediately and contact the Owner's Representative to determine whether or not to continue excavation work and replace the unsatisfactory soil material with compacted backfill or fill material as directed by the Owner's Representative..
5. Unforeseen additional excavation and replacement material will be paid according to the Contract provisions for changes in Work.
6. Reconstruct subgrade damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Owner's Representative.
7. Subgrade compaction shall be tested by the testing laboratory before proceeding further.
8. All fill is to be placed "in-the-dry", to which end dewatering may be required. Spreading and drying of each layer may also be required. Dewatering, as necessary, shall be a part of the work of this Section, EARTH MOVING, and shall be done at no additional cost to the Owner
9. Conversely, if the testing laboratory determines that the fill is too dry for proper compaction, water shall be added to provide the specified optimum moisture content, as necessary for proper compaction.
10. Compaction of each lift shall be as specified herein and as determined by ASTM Test, Designation D1556. Fill shall be placed in successive horizontal lifts no thicker than 6 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers. Compact fill to the required density as specified in this Section, EARTH MOVING. Maximum dry density shall be determined in accordance with ASTM D1557, Method D. The following percentages of minimum to maximum dry densities shall be achieved for fill materials or prepared subgrades.

Under structures, footings, paved surfaces, drainage piping, utilities and other improvements:

FORT PICKERING SITE IMPROVEMENTS

	<u>Minimum</u>	<u>Maximum</u>
a. All fills	95%	98%
b. Top twelve inches of subgrades in cut	95%	98%
c. Fills within lawn and planting areas to within eighteen inches of finished subgrade	85%	90%

Maximum dry density for topsoils and loam shall be determined in accordance with ASTM D698. The following percentages of minimum to maximum dry densities shall be achieved for fill materials or prepared subgrades.

In lawn and plant beds:

	<u>Minimum</u>	<u>Maximum</u>
d. Fills within lawn and planting areas in top eighteen inches of finished grade	80%	85%

11. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.
12. In the case of lawn and planting areas, compaction requirements for subgrades and fills shall be considered minimums and maximums within the density percentages called for, and any over-compaction of subgrades or fills which would be detrimental to lawn or planting objectives shall be corrected by loosening subgrades or fills through tilling or other means and re-compacting to specified compaction limits.
13. The Contractor shall notify the Owner's Representative 3 days in advance when the rough grades are established and ready for formal inspection. No loam shall be placed on rough grades before inspection by the Owner's Representative.

3.7 AGGREGATE BASE COURSE FOR PAVEMENTS

- A. Aggregate subbase and base courses for paving and the spreading, grading, and compaction methods employed shall conform to standard requirements for usual base course of this type for first class road work, and the following:
 1. MassDOT Specifications Section 100
- B. Compaction of aggregate base courses shall be to 95 percent of maximum density as determined by ASTM D 1557, Method D. Stone greater than 2 inches (64 mm) shall be excluded from course.
- C. Width of base courses shall be greater than or equal to the width of pavement surface, if continuous lateral support is provided during rolling, and shall extend a distance of at least twice the base thickness beyond edge of the course above, if not so supported.
- D. Aggregate material shall be applied in lifts less than or equal to 6 inches (150 mm) thick, compacted measure. Each lift shall be separately compacted to specified density.
 1. Material shall be placed adjacent to wall, manhole, catch basin, and other structures only after they have been set to required grade and level.
 2. Rolling shall begin at sides and progress to center of crowned areas, and shall begin on low side and progress toward high side of sloped areas. Rolling shall continue until material does not creep or wave ahead of roller wheels.

3. Surface irregularities which exceed 1/2 inches (12 mm) measured by means of a 10 feet (3 m) long straightedge shall be replaced and properly compacted.
- E. Subgrade, subbase course and base course shall be kept clean and uncontaminated. Less select materials shall not be permitted to become mixed with gravel or dense graded crushed stone. Materials spilled outside pavement lines shall be removed and area repaired.
- F. Portions of subgrade or of construction above which become contaminated, softened, or dislodged by passing of traffic, or otherwise damaged, shall be cleaned, replaced, and otherwise repaired to conform to the requirements of this specification before proceeding with next operation.

3.8 ROUGH GRADING

- A. Rough grading shall include the shaping, trimming, rolling, and refinishing of all surfaces of the subbase and base courses, shoulders, and earth slopes in preparation for final, finish grading of pavements, loams and site improvements as shown on the Drawings. The rough grading of shoulders and sloped areas may be done by machine methods. All ruts shall be eliminated. Traffic of men and equipment across soil subgrade areas shall be prohibited following excavation to the required lines and grades.
 1. Shape subbase and base courses to required crown elevations and cross-slope grades.
 2. When thickness of compacted subbase or base course is 6 inches or less, place materials in a single layer.
 3. When thickness of compacted subbase or base course exceeds 6 inches, place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.
- B. If, during the progress of the Work, any pipe, drain or other construction is damaged due to operations under this Contract, the Contractor shall repair all damage at no additional cost to the Owner and restore damaged areas to their original conditions.
- C. Do all other cutting, filling and grading to the lines and grades indicated on the Drawings. Grade evenly to within the dimensions required for grades shown in the Contract Documents and as specified herein. No stones larger than 3 inches in largest dimension shall be placed in upper 6 inches of the subgrade. Fill shall be left in a compacted state at the end of the workday and sloped to drain.
- D. Slope grades to direct water away from buildings and to prevent ponding. Rough grade to required elevations within the following tolerances:
 1. Lawn or Unpaved Areas: Plus or minus 0.10 foot.
 2. Paved Areas: Plus or minus 0.05 foot.
- E. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders at least 12 inches wide of acceptable soil materials and compact simultaneously with each subbase course and base course layer.
- F. The Contractor shall bring all areas to grades as shown in the Contract Documents and in the details. The Owner's Representative, however, may make such adjustments in grades and alignments as are found necessary to avoid special conditions encountered.
- G. No rubbish of any description shall be allowed to enter fill material. Such material shall be removed from the site.
- H. Wherever streets, lawns, or sidewalks or other items contained within or outside the Limit of Contract lines have been excavated in fulfilling the work required under this Contract, the Contractor shall furnish and install all materials necessary to bring finish surfaces level with the existing adjacent surfaces. All work shall be installed to match the existing conditions in accordance with the governing authority. Notify the proper authorities prior to restoring surfaces outside the Contract Limit Lines.

- I. Placed fill materials that become disturbed shall be regraded and re-compacted. Fill materials that become contaminated shall be removed and replaced, as directed by the Owner's Representative.
- J. Contractor shall clean the subgrade of all stones greater than 2 inches and all debris and rubbish. Such material shall be removed from the site, not raked to the edges and buried. Notify the Owner's Representative that the subsoil has been cleaned and request his/her attendance on site to review and approve subgrade conditions prior to spreading additional specified material over the subgrade.

3.9 REMOVAL OF SURPLUS AND UNSUITABLE MATERIALS

- A. Surplus excavated or surplus off-site borrow materials not required to complete site construction and unsuitable excavated materials shall, unless directed otherwise by the Owner's Representative, become the property of the Contractor who shall remove such materials from the site and legally dispose of it at no additional cost to the Owner.

3.10 DRAINAGE AND DEWATERING

- A. The Contractor shall control the grading in areas under construction on the site so that the surface of the ground will properly slope to prevent accumulation of water in excavated areas and adjacent properties. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrade, and from flooding Project site and surrounding area. The Contractor shall grade and ditch the site as necessary to direct surface runoff away from open excavations and subgrade surfaces. Positive drainage (minimum 1.0 percent slope) shall be maintained at all times.
- B. Protect subgrade and foundation soils from softening and damage by rain or water accumulation.
- C. Should surface, rain or ground water be encountered during the operations, the Contractor shall furnish and operate pumps or other equipment, and provide all necessary piping to keep all excavation clear of water at all times and shall be responsible for any damage to work or adjacent properties from such water. All piping exposed above surface for this use shall be properly covered to allow foot traffic and vehicles to pass without obstruction.
- D. Water from trenches and excavations shall be disposed of in such a manner as will not cause injury to public health nor to public or private property, nor to existing work, nor to the work completed or in progress, nor to the surface of roads, walks, and streets, nor cause any interference with the use of the same by the public. Methods of disposal of pumped effluent shall not cause erosion or siltation.
 - 1. Provide and install all erosion and sedimentation control as specified in Division 1 Section, EROSION AND SEDIMENTATION CONTROL and be paid for this work under the scope of this Section, EARTH MOVING.
- E. There shall be sufficient pumping equipment, in good working order, available at all times to remove water.
- F. Presence of ground water in soil will not constitute a condition for which an increase in the Contract price may be made. Do not place concrete fill, lay piping or install appurtenance under any circumstances in excavation containing free water.
- G. Under no circumstances place fills, pour concrete, or install piping and appurtenances in excavations containing free water.
- H. Where, in the opinion of the Owner's Representative, pumping of excavations is not effective in maintaining a dry firm subgrade, provide other dewatering methods acceptable to the Owner's Representative.

3.11 FROST PROTECTION

- A. Do not excavate to full indicated depth when freezing temperatures may be expected, unless footings or slabs can be poured immediately after the excavation has been completed. Protect the excavation from frost if placing of concrete is delayed.

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- B. Completed foundations that have not been backfilled shall be protected from freezing by temporary additional earth cover, insulating blankets, heaters, or other methods acceptable to the Owner's Representative.
- C. Frozen material shall not be placed as fill or backfill.
- D. No work shall be installed on frozen ground.
- E. Should protection fail, remove frozen materials and replace with concrete or gravel borrow as directed by the Owner's Representative at not additional cost to the Owner.

3.12 DUST CONTROL

- A. During the construction period, the Contractor shall take special measures including, but not limited to, wetting down to control dust on site, in order to prevent annoyance/and or damage to adjacent property, whether public or private. Calcium chloride or any other chemical material may not be used on subgrades of areas to be seeded or planted.
- B. The Contractor shall take all necessary measures to keep streets, over which equipment and service for project travel, clean and free from dirt, dust, mud and debris resulting from construction operations. The actions taken shall meet the requirements of all authorities having jurisdiction.

3.13 CLEANUP

- A. At the end of all excavation, filling and grading operations and before acceptance of the work, the Contractor shall remove all debris, rubbish, garbage, trash, and discarded material, from the site. He shall dispose of them in a manner satisfactory to the Owner's Representative. The premises shall be left clean, presentable, and satisfactory.

END OF SECTION 31 20 00
EARTH MOVING

SECTION 32 15 00: STONE DUST SURFACING

PART 1—GENERAL

1.1 GENERAL PROVISIONS

Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

- A. The work of this Section consists of providing labor, equipment, materials, incidental work, and construction methods necessary to furnish and install the stone dust surfacing, including aggregate base and edging, as indicated on the Drawings and as specified.

1.3 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 - 1. Division Section, EARTH MOVING; Excavation and backfill and establishment of subgrade elevations.

1.4 SUBMITTALS

- A. Submit for Owner's Representative's approval a 1 pound sample of stone dust material demonstrating material gradation and color for review and acceptance.

PART 2—PRODUCTS

2.1 Material for processed gravel base shall be specified, provided, installed and paid for under the work of the SECTION, EARTH MOVING, of this Specification.

2.2 Stone dust shall be decomposed granite or trap rock meeting the following requirements:

- 1. Stonedust blend shall be 4 parts unwashed AASHTO #10, 4 parts AASHTO #8 and 1 part minus #200 fines blended uniformly
- 2. Stone dust shall be gray in color with color relatively uniform and shall be subject to the approval of the Owner's Representative.

PART 3— EXECUTION

3.1 STONE DUST SURFACING

- A. Processed gravel base shall be placed on the compacted base course per the EARTH MOVING section.
- B. Stone dust surfacing shall be placed only after excavation and construction work that might injure the surfacing have been completed. Damage to edging, stone dust surfacing, adjacent grades or materials occurring during construction shall be repaired by the Contractor before acceptance at no additional cost to the Owner.
- C. Stone dust surfacing shall be constructed on the compacted base course.

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- D. Stone dust shall be spread evenly over the base in 4 inch maximum lifts and compacted to 95 percent of maximum density as determined by ASTM D 1557.
- E. Water shall be added to stone dust surface as required to achieve a dense, hard packed surface conforming to the finish grades indicated.
- F. Variations in smoothness of finished stone dust surface shall be less than or equal to 1/4 inch when tested with a 10-foot straightedge, applied both parallel to and at right angles to centerline of stone dust surface areas. Irregularities exceeding these amounts or which retain water on surface shall be corrected by removing defective work and replacing with new material conforming to this specification.

END OF SECTION 32 15 00
STONE DUST SURFACING

SECTION 32 30 00: SITE IMPROVEMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to furnish and install designated Site Improvements and related items as indicated on the Contract Documents, as specified in this Section, and includes, but is not limited to, the following:
 - 1. Magazine gate restoration

1.3 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 - 1. Section: Earth Moving
 - 2. Section: Stonedust Surfacing

1.4 REFERENCES

- A. The following standards shall apply to the work of this Section:
 - 1. Massachusetts Department of Transportation (MassDOT):
 - Specifications Standard Specifications for Highways and Bridges
 - 2. ASTM: American Society for Testing and Materials
 - A36 Structural Steel
 - A53 Pipe, Steel, Black and Hot-dipped, Zinc-coated
 - A120 Standard Galvanized Steel Pipe
 - A153 Zinc Coating (Hot-dip) on Iron and Steel Hardware
 - A386 Zinc Coating (Hot-dip) on Assembled Steel Products.
 - A325 High Strength Bolts
 - 3. AISI: American Steel and Iron Institute.
 - 4. AWS: American Welding Society.
 - D1.1 Structural Welding Code

1.5 SUBMITTALS

- A. Manufacturer's Product Literature (Required Prior to Ordering):
 - 1. Certificate for hot-dipped galvanizing.
 - 2. Paint system for gate.

1.6 QUALITY ASSURANCE

- A. Gate fabricator qualifications: sufficient production capability and 10 year experience with comparable work.

PART 2 - PRODUCTS

2.1 GATE MATERIALS

- A. Steel
 - 1. Workmanship and finish shall be equal to the best practice of modern shops for each item of work. Exposed surfaces shall have a smooth finish and sharp, well defined lines and arrises. Sections shall be well formed to shape and size with sharp lines and angles; curved work shall be sprung evenly to curves. Welding shall be in accordance with the Structural Welding Code of the American Welding Society. All welding, except as otherwise indicated, shall extend the entire length of joints. All welded face joints shall be ground flush and smooth.
 - 2. Steel fabrication shall be accomplished using the highest standards of workmanship. Individual steel pieces shall be saw cut and carefully fit together. All connections shall be full welded and ground flush and smooth. All fabricated steel items shall be fine sanded throughout to produce a high standard of surface smoothness. All surfaces and connections shall be without visible grinding marks, surface differentiation or variation.
 - 3. All material to be galvanized shall be hot-dipped galvanized after fabrication, in accordance with ASTM A123, A153, or A386, as applicable. The galvanizer shall provide a notarized statement indicating compliance with the ASTM standard.
 - 4. Galvanized surfaces damaged shall be wire brushed to remove all cracked zinc coating and re-galvanized with a 95 percent zinc cold galvanizing coating prior to finishing.
 - 5. Where provisions must be made for attaching other materials included under this Section or where provisions must be made for assembly and installation of steel and metal fabrications in the field, the required holes shall be provided in the shop, unless such connections are to be welded. The sizes and locations of all such holes shall be shown on the Shop Drawings. Such holes shall be either drilled or punched and reamed.
- B. All metal used in the fabrication and installation of the site improvements of this Section shall conform to the following specifications:
 - 1. Steel for fabrication shall be in conformance with ASTM A36/A36M-00 or AISI M1020 requirements for flat bar stock and solid squares, and ASTM A500-99 Grade B requirements for steel tubing.
 - 2. Hinge bushing: ¼" thick bronze
 - 3. Padlock: provided by Owner: coordinate size and location of padlock with hasp fabrication.

2.2 PAINT

- A. Primer coating for shop painting of galvanized surfaces shall be an epoxy or urethane coating. Recommended Dry Film Thickness shall be as recommended by manufacturer and approved by Contracting Officer. Acceptable products and their manufacturers shall include the following:
 - 1. Ply-Tile 520-W-45 Epoxy Primer
Manufactured by M.A.B Industrial Coatings
Broomall, PA 19008

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2. Amercoat 385
Ameron International
Alpharetta, GA 30004
 3. Pitt-Guard 97-946 Series All Weather Direct-to-Rust Epoxy Coatings
PPG Architectural Finishes, Inc.
One PPG Place
Pittsburgh, PA 15272
 4. Macropoxy 646 Fast Cure Epoxy
Sherwin-Williams Company
www.sherwin-williams.com
 5. MC-Ferrox B
Wasser High-Tech Coatings
Kent, WA 98032
- B. Finish over epoxy or urethane coating shall be an aliphatic urethane coating. Recommended Dry Film Thickness shall be as recommended by manufacturer and approved by Contracting Officer. Acceptable products and their manufacturers shall include the following:
1. Ply-Thane 890 HS Coating
Manufactured by M.A.B Industrial Coatings
Broomall, PA 19008
 2. Amercoat 450HS
Ameron International
Alpharetta, GA 30004
 3. Pitthane II
PPG Architectural Finishes, Inc.
One PPG Place
Pittsburgh, PA 15272
 4. Acrolon 218 HS Acrylic Polyurethane
Sherwin-Williams Company
www.sherwin-williams.com
 5. MC-Ferrox A
Wasser High-Tech Coatings
Kent, WA 98032
- Surface Preparation: Coat over preceding epoxy or urethane coat within 24 hours
- C. Color shall be gloss black. Contractor to furnish a 5 year warranty on the paint finish.

PART 3 – EXECUTION

3.1 FABRICATION

1. Take all measurements required at the work site. Check measurements, compare dimensions and other data with various trades installing adjoining work to assure proper coordination.
2. Do all shop drilling, shop fitting, shop cutting, shop welding, and bolting required to erect, install and fit metal work to adjoining work. Conform to AISI Code for Steel or Stainless Steel as applicable. Furnish all screws, bolts, anchors, etc., required to attach metal work securely to adjoining work.

3. Welding shall be continuous except where tack welding is specifically permitted. Tack welding will not be permitted on exposed surfaces. All exposed welds shall be ground smooth. All welds shall comply with AWS.
4. Do not enlarge unfair holes by burning and forcing, but correct by reaming.
5. Install all supports and anchors for metal work except those to be cast into concrete or built into masonry as indicated.
6. Furnish all required metal inserts, anchor slots, anchors, anchor bolts, fastenings, etc., for attachment of work of all trades to Cast-in-Place Concrete and Unit Masonry, except where otherwise specified or obviously included under other Sections of the Specifications.
7. Weld with uncoated wire to prevent flux deposits. If coated wire is used, all flux residue shall be thoroughly removed and bare white metal exposed. Where overlapping surfaces are welded, seal off contact area by welding all edges around contact area.

3.1 METAL PREPARATION AND GALVANIZING

A. Prior to galvanizing, all specified metal items shall be cleaned (pickled) in accordance with SSPC-SP8. Cleaning shall remove all rust, scale, and coating surface must be clean, dry, undamaged and free of all loose rust, dirt, grease, or other contaminants including salt deposits. Specified metal items calling for galvanizing shall be hot-dipped galvanized after fabrication and chromated after galvanizing by dipping in a 0.15 percent chromic acid solution. Galvanizing bath shall contain 0.05 – 0.09 percent nickel. Galvanize all ferrous fasteners, clips, sleeves, anchors and accessories in contact with galvanized items. Galvanizing shall comply with ASTM A123M-97A, A153/A153M-98, ASTM A385-00 as applicable. All galvanized materials shall be inspected for compliance with these specifications and marked with a stamp indicating the name of the galvanizer, the ASTM Specification and the weight of the zinc coating in ounces per square foot. Unless otherwise indicated, all items to be galvanized shall receive a 3 mil coating of zinc.

Items to be galvanized shall be galvanized after fabrication. Where size of assembly is too large for complete unit galvanizing, these assemblies shall be galvanized prior to fabrication, in as large sections as practical and then only with the written approval of the Contracting Officer. Touch up for damaged and field welded zinc-coated surfaces, clean welds, bolted connections and abraded areas. Following galvanizing, each item shall receive surface grinding to remove lumps, sags or spikes resultant from the galvanizing process. The finished surface following grinding shall be hand smooth and without irregularities. Take care not to damage the galvanized surface coating.

3.2 PAINTING

- A. Surface preparation, priming and topcoat application shall follow the paint manufacturer's instructions for coating galvanized steel surfaces. All coatings shall be shop applied.
- B. All galvanized surfaces shall then be solvent cleaned in accordance with SSPC-SP1 - "Solvent Cleaning" before being blast cleaned.
- C. Abrasive blast cleaning shall be performed in accordance with SSPC-SP7, "Brush-off Blast Cleaning" using a production line shot and grit blast machine or by air blast. The abrasive working mix shall be maintained such that the final surface profile is within the range specified in this Section.
- D. All coatings shall be applied in the shop except for field touch-up after installation.
- E. All galvanized steel surfaces shall receive the 2-coat shop applied paint
- F. Application Methods: The coating system shall be applied by spray equipment of a type and size capable of applying each coat within the required thickness range. The applicator shall strictly adhere to the manufacturer's recommendations about application methods, cure times, temperature and humidity restrictions

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and recoat times for each individual coat of the specified system. Brushes shall be used in areas where spray application will not achieve acceptable results. Brushing technique shall be performed in a manner that will provide a uniform, blended finish. No coating material shall be thinned in any way except as directed by manufacturer.

1. Conventional spray equipment with mechanical agitators shall be used for prime coat application on bare steel and for epoxy or urethane intermediate coat on galvanized surfaces.
 2. All storage, mixing, thinning, application and curing efforts, techniques and methods shall be accomplished in strict accordance with the printed material data sheets and application instructions published by the respective coating material manufacturer.
 3. Surfaces shall be painted with the specified prime coat material before the end of the same work shift that they were blast cleaned and before any visible rust back occurs.
 4. Applied coatings shall not have runs, sags, holidays, pinholes or discontinuities.
 5. The dry film thickness shall be within the range specified in the manufacturer's printed literature for the specified coating system. Dry film thickness shall be measured in accordance with SSPC-PA 2.
 6. The intermediate coat shall be of a contrasting color to the prime and top coat colors.
- M. All storage, mixing, thinning, application and curing efforts, techniques and methods shall be accomplished in strict accordance with the written requirements and procedures published by the respective coating material manufacturer.
- N. Additional coats: Provide additional coats necessary to eliminate show through and bleed through conditions.
- O. Drying Time: Allow manufacturer's recommended drying time between successive coats. However, allow each coat to thoroughly dry prior to application of subsequent coat.
- P. All compressed air sources shall be properly sized and designed with oil and moisture separators, attached and functional, to allow air at the nozzle, either for blast cleaning, blow-off, painting or breathing, to be oil-free and moisture-free. It shall be of sufficient pressure to accomplish the associated work efficiently and effectively.
- Q. Surfaces not in contact with other steel surfaces but inaccessible after assembly shall be coated prior to assembly.
- R. Critical attention shall be given to edges and bolted connections. All bolts, nuts and washers shall be fully coated and no gaps left unfilled and un-coated.
- S. Adhesion strength of the fully coated assemblies shall be within 80 percent of the values for Adhesion as described in the approved manufacturer's literature measured per ASTM D4541 using apparatus under Annex A4.
- T. Strict attention must be directed to the re-coat times of all applied materials. Shop bolted connections shall also have all bolt heads and nuts striped in a circular brush motion with the same material.
- U. All applied coating shall have no runs, sags, holidays or discontinuities; the dry film thickness shall be within the range specified. There shall be no color variation in the topcoat as determined by Federal Standard 595B. Also, there shall be no gloss variation in the topcoat where tested in accordance with ASTM D523.

3.3 ACCEPTANCE

- A. Gate shall conform to the requirements of the Contract Documents.
- B. Rails shall form a continuous smooth line parallel with the grade unless otherwise described on the Contract Documents.
- C. Gates will be rejected by the Owner's Representative for the following reasons:
 - 1. Welders were not qualified under or did not perform work in accordance with AWS "Standard Qualification Procedure".
 - 2. Fabricated items show metal pieces that were not accurately saw cut and were not fitted together. Gaps, spaces, voids, breaks and crooks in arris lines, humps, bumps, sags and saddles are present.
 - 3. Sections are not well formed and do not meet the shapes and sizes indicated on the Contract Documents.
 - 4. Exposed surfaces do not have a smooth finish and show surface differentiation and variation. Edges show nicks, grind marks or machine marks.
 - 5. Castings do not have sharp corners and edges and are not clean, smooth and true to pattern.
 - 6. Welds are not continuous, extending for the entire length of the joints.
 - 7. Welds are not ground smooth.
 - 8. The presence of flux deposits.
 - 9. Welds are not water tight.
 - 10. Connections are not full seam welded, not ground flush and smooth.
 - 11. Threaded connections are not drawn up tightly. Threads have not been deformed to prevent loosening.
 - 12. Paint has runs, sags, hairs, defective brushing, and clogging of lines and angles.

**-END OF SECTION 32 30 00-
SITE IMPROVEMENTS**

SECTION 32 32 00: PLANTING SOILS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to supply and place planting soils as indicated on the Contract Documents and as specified. Supplying and placement of planting soils shall include, but not be limited to:
 - 1. Sampling and testing of loam borrow.
 - 2. Modifying, screening, placing, spreading and grading of loam borrow.
 - 3. Providing all other sampling, testing, supplying, placing, spreading and grading of planting soils as required by this Section.

1.3 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 - 1. Section, EARTHWORK.
 - 2. Section 32 92 19, SEEDING.

1.4 REFERENCES

- 1. American Society for Testing and Materials (ASTM):
 - D 75 Practice for Sampling Aggregates
 - D 422 Test Method for Particle-Size Analysis of Soils
 - D698-00a Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³)
 - D1557 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 10-lb Rammer and 18-in. Drop
- 3. A.O.A.C.: Association of Official Agricultural Chemists.

1.5 SUBMITTALS

- A. At least 30 days prior to ordering materials, the Contractor shall submit to the Owner's Representative representative samples, certifications, manufacturer's product data and certified test results for materials as specified below for approval in conformance with the requirements of Section, SUBMITTALS, of this Specification. No materials shall be ordered or delivered until the required submittals have been reviewed and approved by the Owner's Representative. Delivered materials

shall closely match the approved samples. Approval shall not constitute final acceptance. The Owner's Representative reserves the right to reject, on or after delivery, any material that does not meet these Specifications.

1. Loam Borrow: The Contractor shall provide a one cubic foot representative sample for testing. All stockpile sampling shall be per ASTM D 75 and Appendixes for securing samples from stockpiles.

Testing will be at the Contractor's expense. Contractor shall deliver all samples to testing laboratories via overnight courier and shall have the testing report sent directly to the Owner's Representative. Perform all tests for gradation, organic content, soil chemistry and pH by UMASS Soil and Plant Tissue Laboratory, West Experiment Station, North Pleasant Street, University of Massachusetts, Amherst, MA 01003, (413) 545-2311.

Testing reports shall be dated within 30 days of submission to the Owner's Representative. Testing reports beyond 30 days old will be rejected and new testing reports mandated.

Testing reports shall include the following tests and recommendations. Contractor shall deliver samples to testing laboratories and shall have the testing report sent directly to the Owner's Representative from the Soil and plant Tissue Laboratory. Testing reports shall include the following tests and recommendations.

- a. Mechanical gradation (sieve analysis) shall be performed and compared to the USDA Soil Classification System. Sieve analysis shall be by combined hydrometer and wet sieving using sodium hexametaphosphate as a dispersant in compliance with ASTM D 422 after destruction of organic matter by H₂O₂. To facilitate review and approval of sieve analysis, provide a computer generated gradation curve from UMASS Soil & Plant Tissue Laboratory.
 - b. Percent of organics shall be determined by the loss on ignition of oven-dried samples. Test samples minus #10 material shall be oven-dried to a constant weight at a temperature of 450 degrees Fahrenheit (752 degrees Centigrade).
 - c. Chemical analysis shall be undertaken for Nitrate Nitrogen, Ammonium Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, extractable Aluminum, Lead, Zinc, Cadmium, Copper, Soluble Salts, and pH and buffer pH. A Conductivity Meter shall be used to measure Soluble Salts in 1:2 soil/water (v/v). Except where otherwise noted, nutrient tests shall be for available nutrients.
 - d. Soil analysis tests shall show recommendations for soil additives to correct soils deficiencies as necessary, and for additives necessary to accomplish lawn and planting work as specified.
3. Limestone: Submit supplier's certification that the limestone being supplied conforms to these Specifications.
 4. All additives needed to amend a specific soil in order to meet these specifications.

1.6 EXAMINATION OF CONDITIONS

- A. All areas of the existing site where topsoil is to be sampled for testing shall be inspected by the Contractor before starting work and any issues that might inhibit or prevent the sampling operation shall be reported to the Owner's Representative prior to beginning this work.
- B. The Contractor and any sub-Contractor responsible for the execution of the Work of this Section, PLANTING SOILS, shall review and confirm in writing that the subsoil elevations have been brought to the proper subgrade elevations prior to proceeding with the spreading of the loam borrow.

PART 2 - PRODUCTS

2.1 LOAM

- A. Loam borrow shall be one of the following loamy sands and sandy loams; “loamy sand”, “loamy fine sand”, “loamy very fine sand”, or “coarse sandy loam”: determined by mechanical analysis (ASTM D 422) and based on the "USDA Classification System" and as defined in this Section. It shall be of uniform composition, without admixture of subsoil. It shall be free of stones greater than 0.75 inches (19 mm) lumps, plants and their roots, debris and other extraneous matter as determined by the Owner's Representative.

Planting soil for lawn areas shall have the following grain size distribution for material passing the #10 (2.0 mm) sieve:

<u>Millimeter</u>	<u>Percent Passing by Weight</u>	
	<u>Maximum</u>	<u>Minimum</u>
2	-----	100
1	100	82
0.5	87	65
0.25	72	49
0.10	45	30
0.05	32	22
0.002	5	2

- 1. Maximum size shall be one and one quarter inches largest dimension. The maximum retained on the #10 sieve shall be 25% by weight of the total sample.
- 2. The ratio of the particle size for 80% passing (D80) to the particle size for 30% passing (D30) shall be 6.0 or less. (D80/D30 < 6.0).
- 3. In addition to the foregoing, all loam borrow to be used for loaming and seeding shall be mechanically screened processed loam borrow that passes a 3/4 inch by 6 inch (19 mm by 150 mm) screen size.

- B. Organic content and pH for specific planting use shall be as follows:

- 1. Areas planted with turf grasses per the Section 32 92 19, SEEDING, of this Specification:
 - a. pH: 6.0 through 7.0
 - b. Organic Content 4.0 - 6.0 percent as determined by the loss on ignition of oven-dried samples passing #10 sieve (Muffle furnace temperature: 450 +/- 10 degrees C for 8 hours)
- 2. Loam borrow shall be pH adjusted for particular planting applications and shall be adjusted prior to delivery to the Project sites as recommended by UMASS Soil & Plant Tissue Laboratory test results.
 - a. When pH of loam borrow is equal to or greater than 7 use aluminum sulfate to adjust pH downward to required levels.

- b. When pH of loam borrow is less than 7 use either sulfur or ferrous sulfate to adjust pH downward to required levels.
 - c. When pH of loam borrow must be raised to the required levels use limestone.
 - d. Regardless of amendment Contractor chooses to use, Contractor, not the Owner, shall be responsible for obtaining specified pH by seeding and/or planting time.
- C. All loam borrow proposed for use shall be tested for conformance to the specifications. Soil additives shall be used to counteract soil deficiencies as recommended by the soils analysis and as supplements for lawn construction as specified herein.
- D. The Owner's Representative reserves the right to reject on or after delivery to the project site any material which does not, in his opinion, meet these specifications.

PART 3 - EXECUTION

3.1 FILLING AND COMPACTION

- A. Subsoil or ordinary borrow shall have been excavated and filled as required by the Contract Documents and specified and paid for under the Section, EARTHWORK, of this Specification. Do not damage the work previously installed. Maintain all required angles of repose of materials adjacent to the loam as shown on the Contract Documents. Do not over excavate compacted subgrades of adjacent pavement or structures during loaming operations.
- B. Confirm that the subgrade is at the proper elevation and that no further earthwork is required to bring the subgrade to proper elevations. Subgrade elevations shall slope parallel to the finished grade and or toward the subsurface drain lines as shown on the Contract Documents.
- C. Clear the subgrade of all construction debris, trash, rubble and any foreign material. In the event that fuels, oils, concrete washout or other material harmful to plants have been spilled into the subgrade material, excavate the soil sufficiently to remove the harmful material. Such construction debris, trash, rubble and foreign material shall be removed from the site and disposed of in a legal manner. Fill any over excavation with approved fill and compact to the required subgrade compaction levels.
- D. Do not proceed with the installation of loam borrow until all utility work in the area has been installed.
- E. Protect adjacent walls, walks and utilities from damage or staining by the loam borrow. Use 0.5-inch (13 mm) plywood and or plastic sheeting as directed to cover existing concrete, metal and masonry work and other items as directed during the progress of the work. Clean up all trash and any soil or dirt spilled on any paved surface at the end of each working day.

3.2 FINE GRADING

- A. Place loam in two lifts. Place the first lift to a depth of 2 inches and harrow or till the loam into the underlying subsoil to a depth of 2 inches, creating a blended interface of loam and subsoil approximately 4 inches deep. Spread the second lift of loam to a minimum depth of 4 inches or greater as shown on the Contract Documents.
- B. No loam borrow shall be handled, planted, or seeded in any way if it is in a wet or frozen condition. A moist loam borrow is desirable.
- C. Soil additives shall be spread and thoroughly incorporated into the layer of loam borrow by harrowing or other methods reviewed by the Owner's Representative. The following soil additives shall be incorporated:
 - 1. Ground limestone or acidulant as required by soil analysis to achieve the required pH.
 - 2. Fertilizer at the rate and of analysis recommended by the soil analysis

- 3. Other soil amendments as required by soil analysis.
- D. Sufficient grade stakes shall be set for checking the finished grades. Stakes must be set in the bottom of swales and at the top of slopes. Deviation from indicated elevations that are greater than one-tenth of a foot shall not be permitted. Connect contours and spot elevations with an even slope. Finish grades shall be smooth and continuous with no abrupt changes at the top or bottom of slopes.
- E. During the compaction process, all depressions caused by settlement or rolling shall be filled with additional loam borrow and the surface shall be regraded and rolled until presenting a smooth and even finish corresponding to the required grades.
- F. The Contractor shall install loam borrow in successive horizontal lifts no thicker than 6 inches (150 mm). The Contractor shall install the soil at a higher level to anticipate any reduction of loam borrow volume due to compaction, settling, erosion, decomposition, and other similar processes during the warranty period. The Owner's Representative will ensure that the full depths of loam borrow for lawn are obtained by digging holes in the loam borrow at the same frequency as for compaction testing.
 - 1. Compact loam to the required density as specified herein.
 - 2. Maximum dry density for topsoils and loam shall be determined in accordance with ASTM D698. The following percentages of minimum to maximum dry densities shall be achieved for fill materials or prepared subgrades.

In lawn and plant beds:

	Minimum	Maximum
a. Fills within seeding and planting areas in top eighteen inches of finished grade	80%	85%

- 3. The surface area of each lift shall be scarified by raking prior to placing the next lift.
 - G. Select equipment and otherwise phase the installation of the loam borrow to ensure that wheeled equipment does not travel over subsoil, placed fills or ordinary borrow or already installed soil.
 - H. Disturbed areas outside the limit of lawn work shall be graded smooth and spread with a minimum of 6 inches (150 mm) of loam borrow to the finished grade.
- 3.3 ACCEPTANCE**
- A. Confirm that the final grade of the loam borrow is at the proper finish grade elevations. Adjust grade as required to meet the contours and spot elevations noted on the Plans. Request the presence of the Owner's Representative to inspect final grade. Do not proceed with the remaining work of this Contract until the Owner's Representative has given his/her written approval of the final grade.

-END OF SECTION 32 32 00-

PLANTING SOILS

SECTION 32 33 00: SEEDING

PART 1-GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to perform all lawn installation and fine grading work and related items as indicated on the Contract Documents and/or as specified in this Section and includes, but is not necessarily limited to, the following:
 - 1. Seeding
 - 2. Maintenance and protection

1.3 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 - 1. Section 32 32 00, PLANTING SOILS

1.4 REFERENCES

- A. Not Applicable.

1.5 SUBMITTALS

- A. At least 30 days prior to intended use, the Contractor shall provide the following samples and submittals for approval in conformance with the requirements of Section, SUBMITTALS. Do not order materials until Owner's Representative's approval of samples, certifications or test results has been obtained. Delivered materials shall closely match the approved samples. Acceptance shall not constitute final acceptance. The Owner's Representative reserves the right to reject on or after delivery any material that does not meet these Specifications.
 - 1. Material Sampling and Testing of Loam Borrow from Off-Site Sources shall be specified, performed and paid for under Section 32 32 00, PLANTING SOILS, of this Specification.
 - 2. Seed: Submit a manufacturer's Certificate of Compliance to the Specifications with each shipment of each type of seed. These certificates shall include the guaranteed percentages of purity, weed content and germination of the seed, and also the net weight and date of shipment. No seed may be sown until the Contractor has submitted the certificates.
 - 3. Hydroseeding: Prior to the start of hydroseeding, submit a certified statement for approval as to the number of pounds of materials to be used per 100 gallons of water.
 - 4. Wood Cellulose Fiber Mulch: Submit 4 copies of manufacturer's literature and one material sample.
 - 5. Limestone: Submit supplier's certification that the limestone being supplied conforms to these Specifications.
 - 6. All additives needed to amend a specific soil in order to meet these specifications.

7. Erosion control matting: Submit 4 copies of manufacturer's literature and one material sample.

1.6 EXAMINATION OF CONDITIONS

- A. All areas to be improved shall be inspected by the Contractor before starting work and any defects such as incorrect grading, or drainage problems shall be reported to the Owner's Representative prior to beginning this work. The commencement of work by the Contractor shall indicate his acceptance of the areas to be improved, and he shall assume full responsibility for the work of this Section, SEEDING.
- B. The Contractor shall be solely responsible for judging the full extent of work requirements involved.

1.7 QUALITY ASSURANCE

- A. Qualification of Landscape Contractor: The work of this Section, SEEDING, shall be performed by a landscape contracting firm which has successfully installed work of a similar quality, schedule requirement, and construction detailing with a minimum of five years experience. Proof of this experience shall be submitted per SUBMITTALS paragraph of this Section, SEEDING.

PART 2 - PRODUCTS

2.1 LOAM

- A. Loam borrow shall be specified, provided, installed and paid for under the work of the Section 32 91 13, PLANTING SOILS, of this Specification.

2.2 SOIL ADDITIVES

- A. Soil additives shall be specified, and provided under Section 32 32 00, PLANTING SOILS

2.3 SEED

- A. Seed mixture shall be fresh, clean, new crop seed. Grass shall be of the previous year's crop and in no case shall the weed seed content exceed 0.25% by weight. The seed shall be furnished and delivered in the proportion specified below in new, clean, sealed and properly labeled containers. All seed shall comply with State and Federal seed laws. Submit manufacturer's Certificates of Compliance. Seed that has become wet, moldy or otherwise damaged shall not be acceptable. Chewings fescue, hard fescue, tall fescue and rygrass shall contain *Acromonium* endophytes. Seed containing endophyte must be kept cool and dry at all times; do not stockpile in the sun.

1. Seed Mixture #1 Composition

Chewings Fescue	30%
Creeping Red Fescue	30%
Rough Bluegrass	20%
Annual Ryegrass	20%

- a. Seeding rate for Seed Mix #1 shall be 4 pounds per 1,250 square feet.

2.4 FERTILIZERS

- A. Do not apply fertilizer on this site due to the proximity to coast and wet ditches.

2.5 LIMESTONE

- A. Ground limestone for adjustment of loam borrow pH shall contain not less than 85 percent of total carbonates and shall be ground to such fineness that 40 percent will pass through 100 mesh sieve and 95 percent will pass through a 20 mesh sieve. Contractor shall be aware of loam borrow pH and

the amount of lime needed to adjust pH to specification in accordance with testing lab recommendations.

2.6 WOOD CELLULOSE FIBER MULCH

- A. Mulch to cover hydroseeded areas with slopes less than 3 to one shall be fiber processed from whole wood chips and clean recycled newsprint in a 1:1 proportion manufactured specifically for standard hydraulic mulching equipment. Fiber shall not be produced from recycled material such as sawdust, paper, or cardboard.
- B. Moisture content shall not exceed 10 percent, plus or minus 3 percent as defined by the pulp and paper industry standards. Fiber shall have a water holding capacity of not less than 900 grams water per 100 grams fiber.
- C. The mulch shall be of such character that the fiber will be dispersed into a uniform slurry when mixed with water. It shall be nontoxic to plant life or animal life.
- D. The mulch shall contain a non-petroleum based organic tackifier and a green dye to allow for easy visual metering during application but shall be non-injurious to plant growth.

2.7 HERBICIDES, CHEMICALS AND INSECTICIDES

- A. No herbicides, chemicals or insecticides shall be used within 100' of the wetland resource areas.

2.8 WATER

- A. Water from existing water system is available for use with metering and with payment of use charges. Provide connections and extensions of services as required for construction operations.

PART 3-EXECUTION

3.1 FILLING AND COMPACTION

- A. Filling and compaction of loam shall be specified, performed and paid for under the work of the Section 32 32 00, PLANTING SOILS, of this Specification.

3.2 FINE GRADING

- A. Fine grading shall be specified, performed and paid for under the work of the Section 32 32 00, PLANTING SOILS, of this Specification.

3.3 SEEDING

- A. Contractor shall obtain Owner's Representative's written approval of fine grading and bed preparation before doing any seeding.
- B. Limit of grading and earthwork shall be limit of seeding unless otherwise indicated on the Contract Documents. All areas disturbed outside the limit of seeding shall be prepared and seeded as specified herein at no additional cost.
- C. The season for seeding shall be from April 1 to June 1 and from August 15 to October 30. The actual planting of seed shall be done, however, only during periods within this season which are normal for such work as determined by weather conditions and by accepted practice in this locality. To prevent loss of soil via water and wind erosion and to prevent the flow of sediment, fertilizer, and pesticides onto roadways, sidewalks, and into catch basins, seed loam areas within 5 Days of spreading the loam.
- D. Seed only when the bed is in a friable condition, not muddy or hard.

- E. Seeding shall be by Hydroseeding Method specified as follows:
1. Prior to the start of work, furnish a certified statement as to the number of pounds of materials to be used per 100 gallons of water. This statement shall also specify the number of square feet of hydroseeding that can be covered with the quantity of solution in the hydroseeder.
 2. Hydroseed with wood cellulose fiber mulch at a rate of 46 pounds per 1,000 square feet or 2000 pounds per acre.
 3. For the hydroseeding process, a mobile tank with a capacity of at least 500 gallons shall be filled with water and the mixture noted above in the specified proportions. The resulting slurry shall be thoroughly mixed by means of positive agitation in the tank. Apply the slurry by a centrifugal pump using the hose application techniques from the mobile tank. Only hose application shall be permitted. At no time shall the mobile tank or tank truck be allowed onto the prepared hydroseed beds. The hose shall be equipped with a nozzle of a proper design to ensure even distribution of the hydroseeding slurry over the area to be hydroseeded and shall be operated by a person thoroughly familiar with this type of seeding operation.
 4. Contractor shall obtain Owner's Representative's written approval of fine grading and bed preparation before doing any hydroseeding.
 5. Limit of grading and earthwork shall be limit of hydroseeding unless otherwise indicated on the Contract Documents. All areas disturbed outside the limit of hydroseeding shall be hydroseeded.
 6. Seed only when the bed is in a friable condition, not muddy or hard. Construction methods shall conform to hydraulic method requirements specified in the Standard Specification.
 7. Hydroseeding shall be a two-step process.
 - a. Step one shall consist of spreading 100 percent of the required seed uniformly over the prepared loam bed so that the seed comes into direct contact with the soil. To mark the progress of the hydroseeding operation the Contractor may add 10 percent of the wood cellulose fiber mulch to the slurry.
 - b. Step two shall consist of a separate application of wood cellulose fiber mulch immediately following the first step of hydroseeding noted above. Apply the wood cellulose fiber mulch at a rate of 2,000 pounds per acre.

3.5 LAWN MAINTENANCE

- A. Maintenance shall begin immediately after any area is seeded and shall continue for a 60 day active growing period for seeded areas or until Final Acceptance, whichever is longer; following the completion of all lawn construction work, and until final acceptance of the project. [* In the event that seeding operations are completed too late in the Fall for adequate germination and growth of grass, then maintenance shall continue into the following Spring for the minimum 60 Day period. In addition, install blankets or netting to prevent loam degradation and movement over the winter. Submit product literature and samples to the Owner's Representative for review. Blankets and netting shall be placed in a timely manner at no additional cost to the Owner.
- B. Maintenance shall include reseeding, mowing, watering, weeding, and resetting and straightening of protective barriers.
- C. During the maintenance period, any decline in the condition of seeded areas shall require immediate action to identify potential problems and to undertake corrective measures.
- D. Watering shall be done in a manner that will provide uniform coverage, prevent erosion due to application of excessive quantities over small areas, and prevent damage to the finished surface by the watering equipment.

1. The Contractor shall provide all labor and arrange for all watering necessary to establish an acceptable lawn. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary to maintain moist soil to a depth of at least 2 inches for seeded areas.
 2. Watering shall be done in a manner that will provide uniform coverage, prevent erosion due to application of excessive quantities over small areas, and prevent damage to the finished surface by the watering equipment. The Contractor shall furnish sufficient watering equipment to apply water to the required soil depths each 8-hour period.
- E. Protection
1. Lawn areas shall be protected by a 3-foot high barrier constructed of 2 inch by 2 inch hardwood stakes or iron pipes set 18 inches in the ground at 10 foot intervals and connected by No. 10 wire. Flags of white cloth shall be secured to the wire at center points between stakes.
 2. Barriers must be raised immediately after lawn construction and shall be maintained until Acceptance.
- F. After the grass in seeded areas has germinated, reseed all areas and parts of areas that fail to show a uniform stand of grass. Reseed such areas and parts of areas repeatedly until all areas are covered with a satisfactory growth of grass with no less than 20 grass shoots per square inch and 2880 grass shoots per square foot. Reseeding together with necessary grading, and trimming shall be done at the Contractor's expense.
- G. Mowing and Edging:
1. The Contractor shall keep lawn areas mowed until Acceptance of the contract by cutting to a height of 2 inches when growth reaches 3 inches or as directed by the Owner's Representative.

3.6 APPLYING LIMESTONE

- A. The Contractor shall return to the site at the beginning of the next seeding season and spread limestone across all lawn areas installed under this Contract. The work of liming the fields shall be as specified under Section 32 32 00, PLANTING SOILS, of this Specification, and performed and paid for under this Section, SEEDING. Limestone shall be spread at rates determined by the soil tests specified, performed and paid for under Section 31 32 00, PLANTING SOILS.

3.7 ACCEPTANCE OF SEED

- A. Following the minimum required maintenance periods for construction, the Contractor shall request the Owner's Representative in writing for a formal inspection of the completed work. Request for inspection shall be received by the Owner's Representative at least 10 Days before anticipated date of inspection.
- B. Acceptance Requirements
1. At the end of the maintenance period, seeded areas shall show complete germination of specified grass species such that:
 - a. No weeds present.
 - b. No bare spots greater than 12 inches in diameter over greater than 10% of overall seeded area.
 - C. At least 90 percent of the grass and forbs established shall be permanent grass and forb species. If seeded areas are deficient, the Contractor's responsibility for maintenance of all seeded areas shall be extended until deficiencies are corrected. Seeded areas to be corrected shall be prepared and reseeded in accordance with the requirements of this Section.
 - D. Owner's Representative's inspection shall determine whether maintenance shall continue in any part.

3.8 CLEAN UP

- A. Absolutely no debris may be left on the site. Excavated material shall be removed as

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directed. Repair any damage to site or structures to restore them to their original condition, as directed by the Owner's Representative, at no cost to the Owner.

END OF SECTION 32 33 00
SEEDING