



CITY OF GREENFIELD
Department of Public Works

CONTRACT DPW 21-04

Fiske Ave. Retaining Wall Replacement

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ADVERTISEMENT FOR BIDDERS
DEPARTMENT OF PUBLIC WORKS
189 Wells Street
Greenfield, MA 01301

Sealed Proposals addressed to the Department of Public Works, 189 Wells Street, Greenfield, Massachusetts and endorsed “Proposal for Contract DPW 21-04, Fiske Ave. Retaining Wall Replacement” will be accepted by the Department of Public Works in the new DPW Administration Building adjacent to the DPW Yard. Bids will be accepted until 2:00 p.m. on Thursday, September 10, 2020, at which time said bids will be publicly opened and read aloud in the Administration Building Meeting Room.

Work consists of the replacement of the existing timber retaining wall with a concrete Versa-Lok retaining wall system or approved equal (approximately 65 S.Y.) and replacement of the existing concrete stairs.

Bid documents will be available starting August 26, 2020, and will be emailed upon request by contacting alan.twarog@greenfield-ma.gov or by downloading them from the City’s Purchasing Department’s webpage at <https://greenfield-ma.gov/p/2959/FY-2021-IFBRFPRFORFS>. To get on the Bidder’s List, proposers should contact the DPW at alan.twarog@greenfield-ma.gov or by calling 413-772-1528 x6104.

The Bid Security from the Contractor in the form of cash, certified check, treasurer’s check, or cashier’s check, drawn upon a responsible bank in the Commonwealth of Massachusetts or a bid bond in the amount of five percent (5%) of the bid shall be made payable to the City of Greenfield, Massachusetts and shall be enclosed with the bid.

A 50% Payment Bond will be required of the successful bidder.

Attention is called to the following:

- A. Bids for this project are subject to the provisions of the Massachusetts General Laws Chapter 30, Section 39M, as amended.
- B. Wages are subject to Massachusetts minimum wage rates as per M.G.L. Chapter 149, Section 26 to 27H inclusive.
- C. The successful bidder must comply with Chapter 151B as amended, of the Massachusetts General Laws and with the provisions of Executive Order No. 74, as amended by Executive Order No. 116 dated May 1, 1975 pertaining to Equal Opportunity Anti-Discrimination and Affirmative Action.

A non-mandatory pre-bid site visit is scheduled for Tuesday, September 1st at 10:00am at the Fiske Avenue Municipal Parking Lot located off Miles Street, Greenfield, MA.

The responsible and eligible bidder offering the lowest price shall be awarded the project, subject to the availability of funding. The City of Greenfield reserves the right to reject any or all bids or to waive any informalities in the bidding.

The Contract/Bid/Proposal awarding authority is:

City of Greenfield
Department of Public Works
Greenfield, Massachusetts

INFORMATION FOR BIDDERS

INFORMATION FOR BIDDERS

1.1 **Location and work to be done:**

The work herein specified to be done (herein sometimes referred to as the “Work”) consists of the replacement of the existing timber retaining wall adjacent to Fiske Avenue and the Fiske Avenue Parking Lot with a new concrete Versa-Lok or approved equal retaining wall system (approximately 65 S.Y.); and if funding permits, replacement of the existing concrete stairs.

The Contractor shall furnish all labor, services, materials, equipment, plant, machinery, apparatus, appliances, tools, supplies, and all other items necessary to do all the work required for the completion of the Work, as specified.

The Work to be done and paid for shall not be limited to the extent mentioned or described, but shall include all incidental work necessary or customarily done for the completion of the work.

- 1.2 **Questions Regarding Drawings and Documents.** In general, no answers will be given to prospective bidders in reply to an oral question if the question involves an interpretation of the intent or meaning of the Drawings or other Contract Documents, or the equality or use of products or methods other than those designated or described on the drawings or in the specifications. Any information given to bidders other than by means of the Drawings and other Contract Documents, including Addenda, as described below, is given informally, for information and the convenience of the bidder only and is not guaranteed. The bidder agrees that such information shall not be used as the basis of nor shall the giving of any such information entitle the bidder to assert any claim or demand against the owner or the engineer on account thereof.

To receive consideration, such questions shall be submitted in writing to the City at least 7 days before the established date for receipt of bids. If the question involves the equality or use of products or methods it must be accompanied by drawings, specifications or other data in sufficient detail to enable the City to determine the equality or suitability of the product or method. In general, the City will neither approve nor disapprove particular products prior to the opening of Bids; such products will be considered when offered by the Contractor for incorporation into the Work.

The City will set forth as Addenda, which shall become a part of the Contract Documents, such questions received as above provided as in his sole judgment are appropriate or necessary and his decision regarding each. At least three days prior to the receipt of Bids, he will send a copy of these Addenda to those prospective bidders known to have taken out sets of the Drawings and other Contract Documents.

The Contractor agrees to use the products and methods designated or described in the Specifications as amended by the Addenda.

- 1.3 **Bidders to Investigate.** Bidders are required to submit their Bids upon the following express conditions which shall apply to and be deemed a part of every Bid received, viz:

Bidders must satisfy themselves by personal examinations of the site of the work and by such other means as they may wish, as to the actual conditions there existing, the character and requirements of the Work, the difficulties attendant upon its execution, and the accuracy of all estimated quantities stated in the Bid.

- 1.4 **Information not Guaranteed.** All information given on the Drawings or in the Contract Documents relating to sub-surface and other conditions, natural phenomena, existing pipes and other structures is from the best sources at present available to the City. All such information is furnished only for the information and convenience of bidders and is not guaranteed.

It is agreed and understood that the City does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes or other structures encountered during construction, will be the same as those indicated on the Drawings or in the other Contract Documents.

It is agreed further and understood that no bidder or contractor shall use or be entitled to use any of the information made available to him or obtained in any examination made by him in any manner as a basis of or ground for any claim or demand against the City, arising from or by reason of any variance which may exist between the information made available and the actual subsurface or other conditions, natural phenomena, existing pipes or other structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

- 1.5 **Submitting Bids.** All Bids must be upon the blank form for Bid annexed hereto, state the proposed price of each item of the Work, both in words and in figures, and be signed by the Bidder with his business address and place of residence. The Bid Security shall be enclosed with the Bid.

Bidders shall not remove and submit the Bid pages separate from the volume of Contract Documents, but shall submit their Bids bound with the complete volume of attached Contract Documents, including all pages correctly assembled.

Each bid shall be submitted to the City in a sealed envelope. On the outside of the envelope shall be written the bidder's name and address and the name of and description of the project for which the Bid is submitted.

If forwarded by mail, the sealed envelope containing the Bid and marked as directed above, must be enclosed in another envelope addressed to the City.

- 1.6 **Time for Completion.** The successful bidder will be required to substantially complete the Work no later than 30 days from the Notice to Proceed.

- 1.7 **Withdrawal of Bids.** Except as hereinafter in this subsection otherwise expressly provided, once his Bid is submitted and received by the City for consideration and comparison with other bid similarly submitted, the bidder agrees that he may not and will not withdraw it within 40 (forty) consecutive calendar days after the actual date of the opening of Bids.

Upon proper written request and identifications, Bids may be withdrawn as follows:

1. At any time prior to the designated time for the opening of Bids.
 2. Provided the Bid has not therefore been accepted by the City at any time subsequent to the expiration of the period during which the bidder has agreed not to withdraw his Bid. Unless a Bid is withdrawn as provided above, the Bidder agrees that it shall be deemed open for acceptance until the City notifies a Bidder in writing that his Bid is rejected or that the City does not intend to accept it. Notice of acceptance of a Bid shall not constitute rejection of any Bid.
- 1.8 **Ability and Experience of Bidder.** No award will be made to any Bidder who cannot satisfy the City that he has sufficient ability and experience in this class of work and sufficient capital and plant to enable him to prosecute and complete the Work successfully within the time named. The City decision or judgment on these matters shall be final, conclusive, and binding.

The Bidder is to submit a list of comparable projects with the list of references.

The City may make such investigations as it deems necessary, and the Bidder shall furnish to the City, under oath if so required, all such information, and data for this purpose as the City may request.

- 1.9 **Bids.** The City may reject Bids which in its sole judgment are either incomplete, conditional, obscure or not responsive or which contain additions not called for, erasures not properly initialed, alterations, or similar irregularities, or the City may waive such omissions, conditions or irregularities.
- 1.10 **Right to Reject Bids.** The City reserves the right to reject any or all Bids, or alternative Bid Items should the City deem it to be in the public interest to do so.
- 1.11 **Execution of Agreement.** The Bidder whose bid is accepted will be required and agrees to duly execute the AGREEMENT, after notification that the AGREEMENT is ready for signature.
- 1.12 **Insurance Certificates.** The Contractor will not be permitted to start any construction work until he has submitted certificates covering all insurance called for, and has obtained approval in writing of such certificates from the City.

Before starting, and until completion of the guarantee period, the Contractor shall procure, deposit, and maintain with the City, insurance satisfactory to the City as follows:

- A. Workmen’s Compensation and Employer’s Liability Insurance as required by the Workmen’s Compensation Laws of the Commonwealth of Massachusetts.
- B. Comprehensive Commercial Liability Insurance covering Bodily Injury and Property Damage (Broad Form) as follows:

Limits of Liability*	\$1,000,000 each occurrence
	\$2,000,000 aggregate

* or \$1,000,000 single limit combined Bodily Injury and Property Damage.

The Comprehensive Commercial Liability Policy shall provide insurance for the Contractor for Bodily Injury and Property Damage to third persons arising out of:

- 1. Work performed by the Contractor himself with his own employees, called “premises operations.”
- 2. Work performed by his subcontractors, called “sublet work” or Independent Contractors (this is referred to as Contractor’s Protective Liability).
- 3. The Contractor’s liability assumed under this contract, called “Hold Harmless” clauses or indemnity agreement. (This is referred to as Contractual Liability Insurance).
- 4. Products liability coverage covering the completed building or installation or products furnished. (This is called Products Liability Insurance for the manufacturer and Complete Operations Liability Insurance for the Contractor).
- 5. If any work is to be performed below the surface of the ground, the coverage shall be extended to include protection against property damage caused by explosion (including blasting), collapse of structures and damage to underground pipes and utilities. (This is known as “XCU” coverage).

- C. Comprehensive Automobile Liability Insurance covering Bodily Injury and Property Damage, as follows:

Limits of Liability

Bodily Injury	\$500,000 each person
	\$1,000,000 each accident
Property Damage	\$1,000,000 each accident

* or \$500,000 single limit combined Bodily Injury and Property Damage.

This insurance is to apply with respect to all owned or hired vehicles of the Contractor and non-ownership protection for all employees of the Contractor engaged in the performance of this contract.

D. All policies shall be so written that the City will be notified of cancellation or restrictive amendment at least 30 days prior to the effective date of such cancellation or amendment. Certificates from the insurance carrier stating the limits of liability and expiration date shall be filed in triplicate with the City before operations are begun. Such certificates not only shall name the types of policy provided, but also shall refer specifically to this Contract* and article and the above paragraphs in accordance with which insurance is being furnished and shall state that such insurance is as required by such paragraphs of this Contract and shall be sufficiently comprehensive as to permit the owner to determine that the required insurance coverage has been provided without the necessity of examining the individual insurance policies.

If the initial insurance expires prior to completion of the Work, renewal certificates shall be furnished by the date of expiration.

* If blanket coverage is furnished, this particular Contract need not be referred to.

E. The Contractor shall require each of his sub-contractors to procure and maintain until the completion of that sub-contractor's work, insurance of the types and to the limits specified in paragraphs A to C, inclusive, above. It shall be the responsibility of the Contractor to insure that all his sub-contractors comply with all of the insurance requirements contained herein relating to such sub-contractors.

No insurances required or furnished hereunder shall, in any way, relieve the Contractor of, or diminish any of his responsibilities, obligations and liabilities under the Contract.

1.13 **Comparison of Bids.** Bids will be compared on the basis of lump-sum or unit prices stated in the BID.

In the event that there is a discrepancy in the Bid between the lump-sum or unit prices written in words and figures, the prices written in words shall govern.

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

1.14 **Bid Security.** The Bid Security from the contractor in the form of cash, certified check or treasurer's or cashier's check drawn upon a responsible bank in the Commonwealth of Massachusetts or a bid bond in the amount of five percent (5%) of the bid shall be made payable to the City of Greenfield, Massachusetts and shall be enclosed with the bid.

Each such check may be held by the City as security for the fulfillment the bidder's agreements as hereinabove set forth and as set forth in the BID. Should the bidder fail to

fulfill such agreements, his bid check shall become the property of the City as liquidated damages; otherwise, the bid check shall be returned to the bidder as hereinafter provided.

Bid checks will be returned to all except the three lowest bidders within three days, Sundays and legal holidays excluded, after the owner and the accepted bidder have executed the AGREEMENT. In the event that the AGREEMENT has not been executed by both the accepted bidder and the owner within 40 consecutive calendar days after the opening of bids, the bid check will be returned promptly upon demand of any bidder who has not been notified of the acceptance of his bid.

None of the three lowest bids shall be deemed rejected, notwithstanding acceptance of any bid, until the AGREEMENT has been executed by both the City and the accepted bidder.

The bid deposit must be enclosed in the sealed envelope containing the bid.

- 1.15 **Disputes.** In the event of any dispute as to any of the terms and conditions of this contract, it shall be determined in accord with the laws of the Commonwealth of Massachusetts and the Courts of the Commonwealth of Massachusetts shall have exclusive jurisdiction of the same.
- 1.16 **Minimum Wage Rates.** In the employment of mechanics, teamsters, chauffeurs, and laborers in the construction of the public work projects, the Minimum Wage rates shall be paid as issued by the Commissioner of Labor and Industries of Massachusetts, in accordance with Sections 26 and 27 of Chapter 149, of the General Laws, as amended, and as included in Appendix A.
- 1.17 **Equal Employment Opportunity Anti-Discrimination and Affirmative Action.** The successful bidder must comply with Chapter 151B as amended, of the Massachusetts General Laws and with the provisions of Executive Order No. 74, as amended by Executive Order No. 116 dated May 1, 1975 pertaining to Equal Opportunity Anti-Discrimination and Affirmative Action.
- 1.18 **Notice to Proceed and Pre-Construction Conference.** A written Notice to Proceed shall be issued to the Contractor after receipt of proof of required insurance. No work shall be performed by the Contractor until he has received the Notice to Proceed.

Prior to the start of construction, the Contractor, all subcontractors, the project manager, and the owner shall attend a pre-construction conference. The conference will serve to acquaint the participants with the general plan of contract administration and requirements under which the construction operation is to proceed.

The date, time, and place of the conference will be furnished to the Contractor by the project manager.

- 1.19 **Bonds.** A 50% Labor and Materials (Payment) Bond is required of the awarded bidder.

FORMS FOR BID

Bidder's Name

PROPOSAL FORM

To the City of Greenfield, Massachusetts, (hereinafter called the "Owner") acting through its Department of Public Works, duly authorized therefore, who act solely for said City and without personal liability to themselves:

Gentlemen:

The undersigned _____, as bidder, declares that the only persons or parties interested in this bid as principals are those named herein; that the bidder has carefully examined the proposed form of Proposal and the Specifications (and amendments thereto); and he bids and agrees, if this bid is accepted, that the bidder will furnish all materials and labor necessary for the completion of the Work as specified in the Proposal, in the manner and time therein prescribed and according to the requirements of Owner as herein set forth.

The Bidder agrees that the Owner will have forty (40) consecutive days from date of opening to accept the bid, except as described in the specifications, the unit(s) at the price, therein. The Bidder also understands that the Owner reserves the right to accept or reject any or all bids and to waive any informalities in the Proposals if it is in the Owner's interest to do so. The Advertisement for Bidders, Information for Bidders, Specifications and Proposal Form attached thereto, shall become a contract upon the receipt by the Bidder of written acceptance of this bid by the Owner.

The Bidder will take in full payment, therefore, the following price, to wit:

Item Number	Estimated Quantity	Brief Description; unit or lump-sum price bid in both words and figures	Total in Figures
1	1 Lump Sum	Site Preparation and Cleanup (Mobilization/Demobilization – Maximum of 5%)	
			_____ dollars
			and _____ cents (\$_____)
2	30 C.Y.*	Earth Excavation (Unsuitable Materials)	
			_____ dollars
			and _____ cents (\$_____)

3	30 C.Y.*	Processed Gravel Base	_____dollars and _____cents (\$_____)
4	1 Lump Sum	Remove and Dispose of Existing Timber Retaining Wall	_____dollars and _____cents (\$_____)
5	65 S.Y.*	Versa-Lok or Approved Equal Retaining Wall	_____dollars and _____cents (\$_____)
6	25 C.Y.*	Loaming	_____dollars and _____cents (\$_____)
7	25 S.Y.*	Seeding	_____dollars and _____cents (\$_____)

* Indeterminate quantity assumed for comparison of Bids.

**ADDITIONAL ALTERNATE 1
REMOVE AND REPLACE EXISTING CONCRETE STAIRS**

8	1 Lump Sum	Remove and Replace Existing Concrete Stairs	_____dollars and _____cents (\$_____)
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The undersigned agrees that for extra work, if any, performed in accordance with the terms and provisions of the annexed form of AGREEMENT, he will accept compensation as stipulated therein in full payment for such extra work.

If this BID is accepted by the City, the undersigned agrees to complete the entire work provided to be done under the Contract within the time stipulated as otherwise expressly provided in the AGREEMENT.

The total price for the base bid, derived as described in the INFORMATION FOR BIDDERS under the heading "Comparison of Bids," is \$** _____.

The total price for Additional Alternate 1, derived as described in the INFORMATION FOR BIDDERS under the heading "Comparison of Bids," is \$** _____.

As provided in the INFORMATION FOR BIDDERS, the bidder hereby agrees that he will not withdraw this BID within 40 consecutive calendar days after the actual date of the opening of BIDS and that, if the City shall accept this BID, the bidder will duly execute and acknowledge the AGREEMENT and furnish, duly executed and acknowledged, the required CONTRACT BONDS within ten (10) days after notification that the AGREEMENT and other Contract Documents are ready for signature.

Should the bidder fail to fulfill any of his agreements as hereinabove set forth, the City shall have the right to retain as liquidated damages the amount of the bid check which shall become the City's property.

This BID includes Addenda number *** _____.

** Bidder must fill in this blank

*** To be filled in by Bidder if Addenda are issued.

The Bidder, by submittal of this BID, agrees with the Owner that the amount of the bid security deposited with this BID fairly and reasonably represents the amount of damages the Owner will suffer due to the failure of the Bidder to fulfill his agreements as above provided.

The Bidder hereby certifies he shall comply with the minority manpower ration and specific action steps contained in the STATE REQUIREMENTS under Massachusetts Equal Employment Program, including the minority contractor compliance. Prior to the award of the Contract, the Contractor must submit a Contractor's Certification of Compliance. The Contractor receiving the award of the Contract shall be required to obtain from each of its Sub-Contractors and submit to the contracting or administering agency prior to the performance of any work under said Contract a certification by said Sub-Contractor, regardless of tier, that it will comply with the minority manpower ratio and specific affirmative action steps contained in the Massachusetts Equal Employment Program.

(SEAL)

By _____
(Signature and title of authorized representative)

(Business Address)

(City & State)

Date _____

The Bidder is a corporation incorporated in the State (or Commonwealth) of _____

(Bidder must add and delete, as necessary, to make this sentence read correctly).

(Note: If the Bidder is a corporation, affix corporate seal and give below the names of its president, treasurer, and general manager, if any; if a partnership, give full names and residential addresses of all partners, and if an individual, give residential address if different from business address.)

CERTIFICATE OF 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 individual submitting bid or proposal

Name of Business

TAX COMPLIANCE CERTIFICATION

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

Signature of individual submitting bid or proposal

Name of business

DEBARMENT STATEMENT
(to be used for any public construction project)

Any person or corporation that fails to date, sign with original signature, and submit the following statement shall not be awarded this contract.

DEBARMENT (Chapter 550, Acts of 1991)

The undersigned certifies under penalties of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth of Massachusetts under the provisions of Section 29F of Chapter 29 of the General Laws, or any other applicable debarment provisions of any other Chapter of the General Laws, or any Rule or Regulation promulgated thereunder.

DATE: _____

Typed or Printed Name of Person Signing

Authorized Official's Signature

Company or Corporation

A. Contractor's Certification

Name of Project _____

A contractor will not be eligible for award of a contract unless such contractor has submitted the following certification, which is deemed a part of the resulting contract:

CONTRACTOR'S CERTIFICATION

_____ certified that:

1. it tends to use the following listed construction trades in the work under the contract _____

and

2. will comply with the minority manpower ration and specific affirmative action steps required by law, and
3. will obtain from each of its Sub-Contractors and submit to the contracting or administering agency prior to the award of any Sub-Contract under this contract the Sub-Contractor certification required by these bid conditions.

Signature of authorized representative
of Contractor.

B. Sub-Contractor's Certification

Name of Project _____

Prior to the award of any sub-contract, regardless of tier, the prospective sub-contractor must execute and submit to the prime contractor the following certification, which will be deemed a part of the resulting sub-contract:

SUB-CONTRACTOR'S CERTIFICATION

_____ certifies that:

1. it tends to use the following listed construction trades in the work under the sub-contract _____

and;

- 2. will comply with the minority manpower ration and specific affirmative action steps required by law; and
- 3. will obtain from each of the sub-contractors prior to the award of any sub-contract under this sub-contractor certification required by these bid conditions.

Signature of Authorized Representative

In order to ensure that the said sub-contractor's certification becomes a part of all sub-contractors under the prime contract, no sub-contract shall be executed until an authorized representative of the City agency (or agencies) administering this project has determined, in writing, that the said certification has been incorporated in such sub-contract, regardless of tier. Any sub-contract executed without such written approval shall be void.

OSHA TRAINING CERTIFICATION

Pursuant to M.G.L. Ch. 30, Sec. 39S(A), I certify under the penalties of perjury to the following:

- (1) that I am able to furnish labor that can work in harmony with all other elements of labor employed or to be employed at the work;
- (2) 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
- (3) that all employees to be employed in the work subject to this contract 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.

(Signature of authorized representative of Bidder)

(Name of authorized representative of Bidder)

(Name of business)

AGREEMENT

AGREEMENT FOR CONTRACT DPW 21-04

Fiske Ave. Retaining Wall Replacement

THIS AGREEMENT, executed this _____ day of _____
in the year Two Thousand and Twenty.

(herein referred to as the “AGREEMENT”), by and between the City of Greenfield, Massachusetts, acting by and through its Department of Public Works, duly authorized therefore, which acts solely for said City and without personal liability to itself, party of the first part, and _____ party of the second part.

WITNESSETH, that the parties to these presents, each in consideration of the undertakings, promises, and agreements on the part of the other herein contained, have undertaken, promised and agreed and do hereby undertake, promise, and agree, the party of the first part for itself, its successors and assigns, and the party of the second part for himself and his heirs, executors, administrators, successors and assigns, as follows:

The Contractor agrees to furnish all equipment, machinery, tools and labor, to furnish and deliver all materials required to be furnished and delivered in and about the improvement and to do and perform all work in accordance with the specifications and conditions attached hereto and made a part hereof, in strict conformity with the provisions herein contained and the Advertisement for Bidders, Information for Bidders, Proposal, and General, Supplemental and Special Conditions hereto annexed. All said Advertisement for Bidders, Information for Bidders, Proposal, General, Supplemental, and Special Conditions, and Contract Drawings are hereby specifically made a part of this contract as fully and to the same effect as if the same had been set forth at length herein.

In consideration of the foregoing premises, the Owner agrees to pay and the Contractor agrees to receive as full compensation for everything furnished and done by the Contractor under this contract; including all work required, for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any delay or from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all risks of every description connected with the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work as herein specified, and for well and faithfully completing the work, and the whole thereof, as herein provided, such price or prices as are set out in the accompanying proposal, and for all work required, for which there is no item in the proposal, such compensation as is provided for in the aforesaid specifications.

The Contractor’s bid price for this project is _____.

IN WITNESS WHEREOF, the Owner has caused this instrument to be signed and its corporate seal to be hereto affixed in its behalf, and the Contractor has caused this instrument to be signed in its behalf.

AGREEMENT FOR CONTRACT DPW 21-04

Fiske Ave. Retaining Wall Replacement

FOR THE OWNER,

By the _____

FOR THE CONTRACTOR,

Witness: _____

By the _____

(If a corporation, attach to each signed Agreement a notarized copy of the corporate vote authorizing the signatory to sign this Agreement.)

Approved as to Appropriation:

City Accountant

Certificate of Acknowledgment of Contractor if a Corporation

For AGREEMENT

State of _____)

SS:

County of _____)

On this _____ day of _____, 20____,

before me personally came _____

to me known, who being by me duly sworn, did depose and say as follows:

That he resides at _____

and is the _____

of _____

the corporation described in and which executed the foregoing instrument; that he knows the corporate seal of said corporation; that the seal affixed to the foregoing instrument is such corporate seal and it was so affixed by order of the Board of Directors of said corporation; and that by the like order he signed thereto his name and official designation.

Notary Public (Seal)

My commission expires: _____

NOTICE TO PROCEED

Date: _____

Project: Fiske Ave. Retaining Wall Replacement	
Owner: City of Greenfield, MA	Owner's Contract No.: DPW 21-04
Contract: Fiske Ave. Retaining Wall Replacement	
Contractor:	
Contractor's Address: <i>[send Certified Mail, Return Receipt Requested]</i>	

You are notified that the Contract Times under the above Contract will commence to run on _____. On or before that date, you are to start performing your obligations under the Contract Documents. The date of Substantial Completion is _____.

Before you may start any Work at the Site, Paragraph 1.12 of the Information for Bidders provides that you must deliver to the Owner (with copies to Engineer and other identified additional insured and loss payees) certificates of insurance which Contractor is required to purchase and maintain in accordance with the Contract Documents.

	Owner
	Given by:
	Authorized Signature
	Title
	Date

Copy to Engineer

BONDS

LABOR AND MATERIALS (PAYMENT) BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____

(an individual, a partnership, a corporation)

duly organized under the Laws of the State (or Commonwealth) of _____,
and having a usual place of business at _____, as
Principal, and _____, a corporation duly
organized under the Laws of the State (or Commonwealth) of _____, and
having a usual place of business at _____,
as Surety, are holden and stand firmly bound and obligated unto the City of Greenfield,
Massachusetts, as obligee, in the sum of _____,
lawful money of the United States of America to and for the true payment whereof we bind
ourselves and, each of us, our heirs, executors, administrators, successors, and assigns, jointly and
severally, firmly by these presents.

WHEREAS, the Principal, by means of a written AGREEMENT (which together with the Contract Documents in said AGREEMENT referred to are collectively sometimes referred to as the "Contract") dated _____.

Has entered into a contract with the said obligee for _____

a copy of which AGREEMENT is attached hereto and by reference made a part hereof.

NOW, THEREFORE, THE CONDITION of this obligation is such that if the Principal shall promptly make payments to all claimants as hereinafter defined, for all labor performed or furnished and for all materials and equipment furnished for or used or in connection with the Work called for by said AGREEMENT and/or Contract and any modifications thereof, including lumber used, but not incorporated in said Work, and for the rental or hire of vehicles, tools and other appliances and equipment furnished for or used in connection with said Work, this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contract with the Principal or with a subcontractor of the Principal for labor, materials, and/or equipment used or reasonably required for use in the performance of the said Work, labor and materials, being

construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the said AGREEMENT and/or Contract and any modifications thereof.

2. The above named Principal and Surety hereby jointly and severally agree with the City that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials or equipment were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The City shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by a claimant,
 - (a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: The Principal, the City or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials or equipment for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials or equipment were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, City, or Surety at any place where an office is regularly maintained for the transaction of business, or served in the state in which the said Work is located, save that such service need not be made by a public officer;
 - (b) After the expiration of one (1) year following the date on which the Principal ceased work on said AGREEMENT and/or Contract and any modifications thereof, it being understood, however, that if any limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
 - (c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the said Work, or any part thereof, is situated, or in the United States District Court for the district in which the said Work, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics liens which may be filed of record against said AGREEMENT and/or Contract or said Work, whether or not claim for the amount of such lien be presented under and against this bond.

The Surety, for value received, agrees further that no changes in, omissions from, or alterations, modifications or additions to the terms and provisions of said AGREEMENT

and/or Contract or the Work to be performed thereunder, and that no extensions of time given or changes made in the manner or time of making payments thereunder, shall in any way affect the Surety's obligations on this Bond, and the Surety hereby waives notice of any such changes, omissions, alterations, modifications, additions or extensions.

IN WITNESS WHEREOF, we have hereunto set our hands and seals to _____
counterparts of this Bond, this _____ day of _____
in the year Two Thousand and Twenty.

(NOTE: _____(Seal)
Principal

If the Principal (Contractor)
is a partnership, the Bond
should be signed by each of the
partners. _____(Seal)
Principal

If the Principal (Contractor)
is a corporation, the Bond
should be signed in its correct
corporate name by its duly
authorized officer or officers. _____(Seal)
Principal

_____ (Seal)
Surety

If this Bond is signed on
behalf of the Surety by an
attorney-in-fact, there should
be attached to it a duly certi-
fied copy of his power of
attorney showing his authority
to sign such Bonds. _____(Seal)
Surety

_____ (Seal)
Surety

There should be executed an
appropriate number of counter-
parts of the Bond corresponding
to the number of counterparts of
the AGREEMENT.)

Certificate of Acknowledgment of Contractor if a Corporation

For CONTRACT BONDS

State of _____)

SS:

County of _____)

On this _____ day of _____, 20____,

before me personally came _____

to me known, who being by me duly sworn, did depose and say as follows:

That he resides at _____

and is the _____

of _____

the corporation described in and which executed the foregoing instrument; that he knows the corporate seal of said corporation; that the seal affixed to the foregoing instrument is such corporate seal and it was so affixed by order of the Board of Directors of said corporation; and that by the like order he signed thereto his name and official designation.

Notary Public (Seal)

My commission expires: _____

SPECIAL CONDITIONS

SPECIAL CONDITIONS

TITLE

- 1.1 Construction Warning Signs
- 1.2 Traffic Control
- 1.3 Access to Property
- 1.4 Conflict or Inconsistency
- 1.5 Percentage of Progress Payments to be Retained

1.1 **Construction Warning Signs.** All construction warning signs shall be erected in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways. All construction warning signs shall be erected and maintained by the Contractor at their own expense.

1.2 **Traffic Control.** For control of moderate traffic, the Contractor shall provide an adequate number of flagmen employed at his own expense.

Whenever and wherever, in the opinion of the Engineer, traffic is sufficiently congested or public safety is endangered, the Owner will furnish uniformed special officers to direct traffic and to keep traffic off the highway area affected by construction operations. Such officers shall be in addition to the watchmen, required under other provisions of the contract.

The employment or presence of traffic flagmen, special officers, or police shall, in no way, relieve the Contractor of any responsibility or liability, which is his under the terms of the Contract.

1.3 **Access to Property.** The Contractor shall maintain access to all properties whether over sidewalks or driveways through the use of ramps, bridges, or steel plating. Bridging is required for all properties where handicap accessibility must be maintained.

Temporary handicap ramps shall be constructed according to the Commonwealth of Massachusetts Architectural Barrier Board Regulations 521 CMR.

1.4 **Conflict or Inconsistency.** If there be any conflict or inconsistency between the provisions of the SPECIAL CONDITIONS and the provisions of the other Contract Documents, the provision of the SPECIAL CONDITIONS shall prevail. If there be any conflict or inconsistency between the provisions of the AGREEMENT and the provisions of any of the Contract Documents other than the SPECIAL CONDITIONS, the provisions of the AGREEMENT shall prevail.

1.5 **Percentage of Progress Payments to be Retained.** The percentage of value to be retained under that Subsection of the GENERAL CONDITIONS, entitled "Progress Estimates," shall be 5 percent.

GENERAL CONDITIONS

GENERAL CONDITIONS

TITLE

1.1	Definitions.....
1.2	Obligations and Liability of Contractor.....
1.3	Planning and Progress Schedules.....
1.4	Supervision of Work.....
1.5	Patents.....
1.6	Electrical Energy.....
1.7	Compliance with Laws.....
1.8	Provisions Required by Law Deemed Inserted.....
1.9	Permits.....
1.10	Not to Sublet or Assign.....
1.11	Delay by City.....
1.12	Time for Completion.....
1.13	Liquidated Damages.....
1.14	Employ Sufficient Labor and Equipment.....
1.15	Handling and Distribution.....
1.16	Occupying Private Land.....
1.17	Interference With and Protection of Streets.....
1.18	Safety.....
1.19	Sanitary Regulations.....
1.20	Intoxicating Liquors.....
1.21	Access to Work.....
1.22	Examination of Work.....
1.23	Defective Work, Etc.....
1.24	Precautions During Adverse Weather.....
1.25	Right to Materials.....
1.26	Changes.....
1.27	Extra Work.....
1.28	Extension of Time on Account of Extra Work.....
1.29	Changes Not to Affect Bonds.....
1.30	Claims for Damages.....
1.31	Abandonment of Work or Other Default.....
1.32	Prices for Work.....
1.33	Formal Acceptance.....
1.34	Progress Estimates.....
1.35	Partial Acceptance.....
1.36	Final Estimate and Payment.....
1.37	Liens.....
1.38	Claims.....
1.39	No Waiver.....
1.40	Liability of City.....
1.41	Guarantee.....
1.42	Cleaning Up.....
1.43	Legal Address of Contractor.....
1.44	Modification of Termination.....

1.1 **Definitions.** Wherever the words hereinafter defined or pronouns used in their stead occur in the Contract Documents, they shall have the following meanings:

The word “Owner” shall mean the City of Greenfield.

The word “Contractor” shall mean the party of the second part above designated.

The word “Specifications” when used herein shall be deemed to refer to both the General and Technical Specifications.

The words “herein”, “hereinafter”, hereunder” and words of like import shall be deemed to refer to the Contract Documents.

1.2 **Obligations and Liability of Contractor.** The Contractor shall do all the work and perform and furnish all the labor, services, materials, equipment, plant, machinery, apparatus, appliances, tools, supplies and all other things (except as otherwise expressly provided herein) necessary and as herein specified for the proper performance and completion of the Work in the manner and within the time hereinafter specified, in strict accordance with the Specifications and other Contract Documents, in conformity with the directions and to the satisfaction of the City, and at the prices herein agreed upon.

All parts of the Work and all fixtures, equipment, apparatus and other items indicated in the Specifications and all work and material usual and necessary to make the Work complete in all its parts, including all incidental work necessary to make it complete and satisfactory and ready for use and operation, whether or not they are mentioned in the Specifications, shall be furnished and executed the same as if they were called for by the Specifications.

The Contractor shall conduct his work so as to interfere as little as possible with private business and public travel. Wherever and whenever necessary or required, he shall maintain fences, furnish watchmen, maintain lights, and take such other precautions as may be necessary to protect life and property.

The Contractor shall indemnify and save harmless the City and its officers, agents, servants, and employees from and against any and all claims, demands, suits, proceedings liabilities, judgments, awards, losses, damages, costs and expenses, including attorney’s fees, on account of bodily injury, sickness, disease or death sustained by any person or persons or injury or damage to or destruction of any property, directly or indirectly arising out of, relating to or in connection with the Work, whether or not due or claimed to be due in whole or in part to the active, passive or concurrent negligence or fault of the Contractor, his officers, agents, servants or employees, any of his subcontractors, the City or any of its respective officers, agents, servants or employees and/or any other person or persons, and whether or not such claims, demands, suits or proceedings are just, unjust, groundless, false or fraudulent; and the Contractor shall and does hereby assume and agrees to pay for the defense of all such claims, demands, suits and proceedings.

The Contractor shall have complete responsibility for the Work and the protection thereof, and for preventing injuries to persons and damage to the Work and property and utilities on or about the Work, until final completion and final acceptance thereof. He shall, in no way, be relieved of his responsibility by any right of the City to give

permission or directions relating to any part of the Work, by any such permission or directions given, or by failure of the City to give such permission or directions. The Contractor shall bear all costs, expenses, losses and damages on account of the quantity or character of the Work or the nature of the land (including but not limited to subsurface conditions) in or under or on which the Work is done being different from those indicated or shown in the Contract Documents or from what was estimated or expected, or on account of the weather, elements, or other causes.

The Contractor shall conduct his operations so as not to damage existing structures or work installed either by him or by other contractors. In case of any such damage resulting from his operations, he shall repair and make good as new the damaged portions at his own expense with the consent of the damaged party. In the event that consent is not given, the Contractor shall continue to be liable for the damage caused.

The Contractor shall be as fully responsible to the City for the acts and omissions of his subcontractors, their officers, agents, servants and employees as he is for his own acts and omissions and those of his officers, agents, servants and employees.

Should the Contractor sustain any loss, damage or delay through any act or omission of any other contractor or any subcontractor of any such other contractor, the Contractor shall have no claim against the City therefore, other than for any extension of time, but shall have recourse solely to such other contractor or subcontractor.

If any other contractor or any subcontractor of any such other contractor shall suffer or claim to have suffered loss, damage or delay by reason of the acts or omissions of the Contractor or of any of his subcontractors, the Contractor agrees to assume the defense against any such claim and to reimburse such other contractor or subcontractor for such loss or damage. The Contractor agrees to and does hereby indemnify and save harmless the City from and against any and all claims by such other contractors or subcontractors alleging such loss, damage or delay and from and against any and all claims, demands, suits, proceedings, liabilities, judgments, awards, losses, damages, costs and expenses, including attorneys' fees, arising out of, relating to or resulting from such claims.

The Contractor shall promptly pay all federal, state and local taxes which may be assessed against him in connection with the Work or his operations under the AGREEMENT and/or the other Contract Documents, including but not limited to, taxes attributable to the purchase of material and equipment, to the performance of services, and the employment of persons in the prosecution of the Work.

- 1.3 **Planning and Progress Schedules.** The Contractor shall submit to and for the approval of the Engineer, a detailed schedule of operations. The schedule shall show the proposed methods of construction and sequence of work and the time the Contractor proposes to complete the various items of work within the time specified in the Contract. No work shall begin until the Progress Schedule is approved by the Engineer.

If the Contractor's operations are materially affected by changes in the plans or in the quantity of the Work or if he has failed to comply with the submitted and approved schedule, the Contractor shall submit a revised schedule if requested by the Engineer within seven days after the date of the Engineer's request. This revised schedule shall

show how the Contractor proposes to prosecute the balance of the Work, so as to complete the Work within the time specified in the Contract.

- 1.4 **Supervision of Work.** The Contractor shall be solely responsible for supervision of the Work, shall give the Work the constant attention necessary to ensure the expeditious and orderly progress thereof, and shall cooperate with the City in every possible way.

At all times, the Contractor shall have as his agent on the Work a competent superintendent capable of reading and thoroughly understanding the Specifications, with full authority to execute the directions of the City, without delay, and to supply promptly such labor, services, materials, equipment, plant, apparatus, appliances, tools, supplies and other items as may be required. Such superintendent shall not be removed from the Work without the prior written consent of the City. If, in the opinion of the City, the superintendent or any successor proves incompetent, the Contractor shall replace him with another person approved by the City; such approval, however, shall, in no way, relieve or diminish the Contractor's responsibility for the supervision of the Work.

Whenever the Contractor or his agent or superintendent is not present on any part of the Work where it may be necessary to give directions or instructions with respect to such Work, such directions or instructions may be given by the City to, and shall be received and obeyed by the foreman or any other person in charge of the particular work involved.

- 1.5 **Patents.** The Contractor shall indemnify and save harmless the City and all persons acting for or on behalf of the City from all claims and liability of any nature or kind, and all damages, costs and expenses, including attorneys' fees, arising from or occasioned by any infringement or alleged infringement of any patents or patent rights on any invention, process, material, equipment, article or apparatus, or any part thereof, furnished and installed by the Contractor, or arising from or occasioned by the use or manufacture thereof, including their use by the City.

- 1.6 **Electrical Energy.** The Contractor shall make all necessary applications and arrangements and pay all fees and charges for electrical energy for power and light necessary for the proper completion of the Work and during its entire progress. The Contractor shall provide and pay for all temporary wiring, switches, connections and meters.

The Contractor shall provide sufficient lighting so that all work may be done in a workman like manner when there is not sufficient daylight.

- 1.7 **Compliance with Laws.** The Contractor shall keep himself fully informed of all existing and future federal, state and local laws, ordinances, rules, and regulations affecting those engaged or employed on the Work, the material and equipment used in the Work or the conduct of the Work, and of all orders, decrees and other requirements of bodies or tribunals having any jurisdiction or authority over the same. If any discrepancy or inconsistency is discovered in the Specifications or other Contract Documents in relation to any such law, ordinance, rule, regulation, order, decree, or other requirement, the Contractor shall forthwith report the same to the City in writing. The Contractor shall, at all times, observe and comply with, and cause all his agents, servants, employees and subcontractors to observe and comply with all such existing and future laws, ordinances, rules, regulations, orders, decrees and other requirements, and he shall protect, indemnify

and save harmless the City, its officers, agents, servants and employees, from and against any and all claims, demands, suits, proceedings, liabilities, judgments, penalties, losses, damages, costs and expenses, including attorneys' fees, arising from or based upon any violation or claimed violation of any such law, ordinance, rule, regulation, order, decree or other requirement, whether committed by the Contractor or any of his agents, servants, employees or subcontractors.

- 1.8 **Provisions Required by Law Deemed Inserted.** Each and every provision of law and clause required by law to be inserted in the Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though they were included herein. If through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the Contract shall forthwith be physically amended to make such insertion.
- 1.9 **Permits.** The Contractor shall, at his own expense, take out and maintain all necessary permits from the county, municipal, or other public authorities; shall give all notices required by law; and shall post all bonds and pay all fees and charges incident to the due and lawful prosecution of the Work.
- 1.10 **Not to Sublet or Assign.** The Contractor shall constantly give his personal attention to the faithful prosecution of the Work, shall keep the same under his personal control, shall not assign the Contract or sublet the Work or any part thereof without the previous written consent of the City, and shall not assign any of the monies payable under the Contract, or his claim thereto, unless by and with the like written consent of the City and the surety on the contract bonds. Any assignment or subletting in violation hereof shall be void and unenforceable.
- 1.11 **Delay by City.** The City may delay the beginning of the Work or any part thereof if the necessary lands or rights of way for such work shall not have been obtained. The Contractor shall have no claim for additional compensation or damages on account of such delay, but shall be entitled only to an extension of time as hereinafter provided.
- 1.12 **Time for Completion.** The rate of progress shall be such that the Work shall be performed and completed in accordance with the Contract before the expiration of the time limit stipulated under INFORMATION FOR BIDDERS, except as otherwise expressly provided herein.

It is agreed that the rate of progress herein required has been purposely made low enough to allow for the ordinary and foreseeable delays incident to work of this character. No extension of time will be given for ordinary or foreseeable delays, inclement weather, or accidents, and the occurrence of such will not relieve the Contractor from the necessity of maintaining this rate of progress and completing the Work within the stipulated time limit.

If delays are caused by acts of God, acts of Government, unavoidable strikes, extra work, or other causes or contingencies clearly beyond the control or responsibility of the Contractor, the Contractor may be entitled to additional time to perform and complete the Work, provided that the Contractor shall, within ten (10) days from the beginning of such delay notify the City, in writing, of the cause and particulars of the delay. Upon receipt of such notification, the City shall review and evaluate the cause and extent of the delay.

If, under the terms of the AGREEMENT, the delay is properly excusable, the City will, in writing, appropriately extend the time for completion of the Work. The Contractor agrees that he shall not have or assert any claim for nor shall he be entitled to any additional compensation or damages on account of such delays.

- 1.13 **Liquidated Damages.** In case the Contractor fails to complete the Work satisfactorily on or before the date of completion fixed herein or as duly extended as hereinbefore provided, the Contractor agrees that the City shall deduct from the payments due the Contractor each month, the sum of five hundred (\$500) dollars for each calendar day of delay. If the payments due the Contractor are less than the amount of such liquidated damages, said damages shall be deducted from any such monies due or to become due the Contractor, and, in case such damages shall exceed the amount of all monies due or to become due the Contractor, the Contractor or his surety shall pay the balance to the Owner.
- 1.14 **Employ Sufficient Labor and Equipment.** If, in the sole judgment of the City, the Contractor is not employing sufficient labor, plant, equipment or other means to complete the Work within the time specified, the City may, after giving written notice, require the Contractor to employ such additional labor, plant, equipment and other means as the City deems necessary to enable the Work to progress properly.
- 1.15 **Handling and Distribution.** The Contractor shall handle, haul, and distribute all materials on the different portions of the Work, as necessary or required; shall provide suitable and adequate storage room for materials and equipment during the progress of the Work, and be responsible for the protection, loss of, or damage to materials and equipment furnished by him, until the final completion and acceptance of the Work.
- 1.16 **Occupying Private Land.** The Contractor shall not (except after written consent from the proper parties) enter or occupy with men, tools, materials, or equipment, any land outside the rights-of-way or property of the Owner. A copy of the written consent shall be given to the Engineer.
- 1.17 **Interference With and Protection of Streets.** The Contractor shall not close or obstruct any portion of a street, road, or private way without obtaining permits from the proper authorities. If any street, road or private way shall be rendered unsafe by the Contractor's operations, he shall make such repairs or provide such temporary ways or guards as shall be acceptable to the City.

Streets, roads, private ways, and walks not closed shall be maintained passable and safe by the Contractor, who shall assume and have full responsibility for the adequacy and safety of provisions made therefore.

The Contractor shall, at least 24 hours in advance, notify the Police and Fire Departments, in writing, with a copy to the Department of Public Works, if the closure of a street or road is necessary. He shall cooperate with the Police Department in the establishment of alternate routes and shall provide adequate detour signs, plainly marked and well lighted, in order to minimize confusion.

- 1.18 **Safety.** The Contractor shall take all necessary precautions and provide all necessary safeguards to prevent personal injury and property damage. The Contractor shall provide

protection for all persons including but not limited to his employees and employees of other contractors or subcontractors; members of the public; and employees, agents, and representatives of the City, and regulatory agencies that may be on or about the Work. The Contractor shall provide protection for all public and private property including but not limited to structures, pipes and utilities, above and below ground.

The Contractor shall provide and maintain all necessary safety equipment such as fences, barriers, signs, lights, walkways, guards and fire prevention and fire fighting equipment and shall take such other action as is required to fulfill his obligations under this subsection.

The Contractor shall comply with all applicable federal, state and local laws, ordinances, rules and regulations and lawful orders of all authorities having jurisdiction for the safety of persons and protection of property.

The Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This responsible person shall have the authority to take immediate action to correct unsafe or hazardous conditions and to enforce safety precautions and programs.

- 1.19 **Sanitary Regulations.** The Contractor shall provide adequate sanitary facilities for the use of those employed on the Work. Such facilities shall be made available when the first employees arrive on the site of the Work, shall be properly secluded from public observation, and shall be constructed and maintained during the progress of the Work in suitable numbers and at such points and in such manner as may be required or approved.

The Contractor shall maintain the sanitary facilities in a satisfactory and sanitary condition at all times and shall enforce their use. He shall rigorously prohibit the committing of nuisances on the site of the Work, on the lands of the Owner, or on adjacent property.

The City shall have the right to inspect such facilities at all times to determine whether or not they are being properly and adequately maintained.

- 1.20 **Intoxicating Liquors.** The Contractor shall not sell and shall neither permit nor suffer the introduction or use of intoxicating liquors upon or about the Work.

- 1.21 **Access to Work.** The City and its officers, agents, servants and employees may at all times and for any and all purposes, enter upon the Work and the site thereof and the premises used by the Contractor, and the Contractor shall at all times provide safe and proper facilities therefore.

- 1.22 **Examination of the Work.** The City shall be furnished by the Contractor with every reasonable facility for examining and inspecting the Work and for ascertaining that the Work is being performed in accordance with the requirements and intent of the Contract, even to the extent of requiring the uncovering or taking down portions of finished work by the Contractor.

Should the work thus uncovered or taken down prove satisfactory, the cost of uncovering or taking down and the replacement thereof shall be considered as extra work unless the

original work was done in violation of the Contract in point in time or in the absence of the Engineer or his inspector and without his written authorization, in which case said cost shall be borne by the Contractor. Should the work uncovered or taken down prove unsatisfactory, said cost shall likewise be borne by the Contractor.

Examination or inspection of the Work shall not relieve the Contractor of any of his obligations to perform and complete the Work as required by the Contract.

- 1.23 **Defective Work, Etc.** Until acceptance and during the applicable guarantee period thereafter, the Contractor shall promptly, without charge, repair, correct or replace work, equipment, materials, apparatus or parts thereof which are defective, damaged or unsuitable or which in any way fail to comply with or be in strict accordance with the provisions and requirements of the Contract or applicable guarantee and shall pay to the City all resulting costs, expenses, losses or damages suffered by the City.

If any material, equipment, apparatus or other items brought upon the site for use or incorporation in the Work, or selected for the same, is rejected by the City as unsuitable or not in conformity with the Specifications or any of the other Contract Documents, the Contractor shall forthwith remove such materials, equipment, apparatus and other items from the site of the Work and shall at his own cost and expense make good and replace the same.

- 1.24 **Precautions During Adverse Weather.** During adverse weather and against the possibility thereof, the Contractor shall take all necessary precautions so that the Work may be properly done, and satisfactory in all respects.

- 1.25 **Right to Materials.** Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the materials, equipment, apparatus and other items furnished after they have been installed or incorporated in or attached or affixed to the Work or the site, but all such materials, equipment, apparatus and other items shall, upon being so installed, incorporated, attached or affixed, become the property of the City. Nothing in this subsection shall relieve the Contractor of his duty to protect and maintain all such materials, equipment, apparatus and other items.

- 1.26 **Changes.** The City may make changes in the Work and in the Specifications therefore by making alterations therein, additions thereto or omissions therefrom. All work resulting from such changes shall be performed and furnished under and pursuant to the terms and conditions of the Contract. If such changes result in an increase or decrease in the work to be done hereunder, or increase or decrease the quantities thereof, adjustment in compensation shall be made therefore at the unit prices stipulated in the Contract for such work.

Except in an emergency endangering life or property, no change shall be made unless in pursuance of a written order from the City authorizing the change, and no claim for additional compensation shall be valid unless the change is so ordered.

The Contractor agrees that he shall neither have or assert any claim for or be entitled to any additional compensation for damages or for loss of anticipated profits on work that is eliminated.

1.27 **Extra Work.** The Contractor shall perform any extra work (work in connection with the Contract but not provided for herein) when and as ordered in writing by the City, at the unit prices stipulated in the Contract for such work or, if none are so stipulated, either (a) at the price agreed upon before such work is commenced and named in the written order for such work, or (b) if the City so elects, for the actual cost of such work, as determined by the Contractor and approved by the City, plus a percentage of such cost, as set forth below. No extra work shall be paid for unless specifically ordered as such in writing by the City.

The cost of extra work done under (b) above shall include the actual cost to the Contractor of materials used and equipment installed, common and skilled labor, and foremen, and the fair rental of all machinery and equipment used on the extra work for the period of such use.

At the request of the City, the Contractor shall furnish itemized statement of the cost of the extra work ordered as above and give the City access to all records, accounts, bills and vouchers and correspondence relating thereto.

The Contractor may include in the cost of extra work the amounts of additional premiums, if any, (other than premiums on bonds) paid on the required insurance on account of such extra work, of Social Security or other direct assessments upon the Contractor's payroll by federal or other properly authorized public agencies, and of other approved assessments when such assessments are not normally included in payments made by the Contractor directly to his employees, but in fact, are, and are customarily recognized as, part of the cost of doing work.

The fair rental of all machinery and equipment shall be based upon the most recent edition of "Compilation of Rental Rates for Construction Equipment", published by the Associated Equipment Distributors, or a similar publication approved by the City. Rental for machinery or equipment shall be based upon an appropriate fraction of the approved monthly rate schedule. If said extra work requires the use of machinery or equipment not already on the site of the Work, the cost of transportation, not exceeding a distance of 100 miles, of such machinery or equipment to and from the Work shall be added to the fair monthly rate; provided however, that this shall not apply to machinery or equipment already required to be furnished under the terms of the Contract.

The Contractor shall not include in the cost of extra work any cost or rental of small tools, building, or any portion of the time of the Contractor, his superintendent, or his office and engineering staff.

To the cost of extra work done by the Contractor's own forces under (b) above (determined as stated above), the Contractor shall add 15 percent to cover his overhead, use of capital, the premium on the bonds as assessed upon the amount of this extra work, and profit.

In the case of extra work done under (b) above by a subcontractor, the subcontractor shall compute, as above, his cost for the extra work, to which he shall add 15 percent as in the case of the Contractor, and the Contractor shall be allowed an additional 15 percent of the subcontractor's cost for the extra work to cover the costs of the Contractor's overhead,

use of capital, the premium on the bonds as assessed upon the amount of this extra work, and profit. Said subcontractor's cost must be reasonable and approved by the City.

If extra work is done under (b) above, the Contractor and/or subcontractor shall keep daily records of such extra work. The daily record shall include the names of men employed, the nature of the work performed, and hours worked, materials and equipment incorporated, and machinery or equipment used, if any, in the prosecution of such extra work. This daily record, to constitute verification that the work was done, must be signed both by the Contractor's authorized representative and by the City. A separate daily record shall be submitted for each extra work order.

- 1.28 **Extension of Time on Account of Extra Work.** When extra work is ordered near the completion of the Contract or at any time during the progress of the Work which unavoidably increases the time for the completion of the Work, an extension of time shall be granted as hereinbefore provided.
- 1.29 **Changes Not to Affect Bonds.** It is distinctly agreed and understood that any changes made in the Work or the drawings or specifications therefore (whether such changes increase or decrease the amount thereof or the time required for its performance) or any changes in the manner or time of payments made by the City to the Contractor, or any other modifications of the Contract, shall in no way annul, release, diminish or affect the liability of the surety on the contract bonds given by the Contractor, it being the intent hereof that notwithstanding such changes the liability of the surety on said bonds continue and remain in full force and effect.
- 1.30 **Claims for Damages.** If the Contractor makes claim to any damages alleged to have been sustained by breach of contract or otherwise, he shall, within ten (10) days after occurrence of the alleged breach or within ten (10) days after such damages are alleged to have been sustained, whichever date is earlier, file with the City a written, itemized statement in triplicate of the details of the alleged breach and the details and amount of the alleged damages. The Contractor agrees that unless such statement is made and filed as so required, his claim for damages shall be deemed waived, invalid and unenforceable, and that he shall not be entitled to any compensation for any such alleged damages.
- 1.31 **Abandonment of Work or Other Default.** If the Work shall be abandoned, or any part thereof shall be sublet without previous written consent of the City, or the Contract or any monies payable hereunder shall be assigned otherwise than as herein specified, that the conditions herein specified as to rate of progress are not being complied with, or that the Work or any part thereof is being unnecessarily or unreasonably delayed, or that the Contractor has violated or is in default under any of the provisions of the Contract, or if the Contractor becomes bankrupt or insolvent or goes or is put into liquidation or dissolution, either voluntarily or involuntarily, or petitions for an arrangement or reorganization under the Bankruptcy Act, or makes a general assignment for the benefit of creditors or otherwise acknowledges insolvency, the happening of any of which shall be and constitute a default under the Contract, the City may notify the Contractor in writing, with a copy of such notice mailed to the surety, to discontinue all work or any part thereof; thereupon the Contractor shall discontinue such work or such part thereof as the City may designate; and the City may, upon giving such notice by contract or otherwise as it may determine, complete the Work or such part thereof and charge the entire cost and expense of so completing the Work or such part thereof to the Contractor.

In addition to the said entire cost and expense of completing the work, the City shall be entitled to reimbursement from the Contractor and the Contractor agrees to pay to the City any losses, damages, costs and expenses, including attorney's fees, sustained or incurred by the City by reason of any of the foregoing causes. For the purposes of such completion, the City may, for itself, or for any contractors employed by the City, take possession of and use or cause to be used any and all materials, equipment, plant, machinery, appliances, tools, supplies and such other items of every description that may be found or located at the site of the Work.

All costs, expenses, losses, damages, attorney's fees and any and all other charges incurred by the City under this subsection shall be charged against the Contractor and deducted and/or paid by the City out of the monies due or payable or to become due or payable under the Contract to the Contractor; in computing the amounts chargeable to the Contractor, the City shall not be held to a basis of the lowest prices for which the completion of the Work or any part thereof might have been accomplished, but all sums actually paid or obligated therefore to effect its prompt completion shall be charged to and against the account of the Contractor. In case the costs, expenses, losses, damages, attorney's fees and other charges together with all payments therefore made to or for the account of the Contractor if the Work had been properly performed and completed by the Contractor, the Contractor shall be entitled to receive the difference, and, in case such costs, expenses, losses, damages, attorney's fees and other charges, together with all payments therefore made to or for the account of the Contractor, shall exceed the said sum, the Contractor shall pay the amount of the excess to the City.

- 1.32 **Prices for Work.** The City shall pay and the Contractor shall receive the prices stipulated in the BID made a part hereof as full compensation for everything performed and furnished and for all risks and obligations undertaken by the Contractor under and as required by the Contract.
- 1.33 **Formal Acceptance.** Fixing of the date of completion and acceptance of the Work or a specified part thereof shall only be effective when accomplished by a writing specifically so stating and signed by the City.
- 1.34 **Progress Estimates.** Once a month, except as hereinafter provided, the City shall make an estimate in writing of the total amount and value of the work done to the first of the month by the Contractor. The City shall retain 5 percent of such estimated value, as part security for fulfillment of the Contract by the Contractor and shall deduct from the balance of all previous payments made to the Contractor, all sums chargeable against the Contractor and all sums to be retained under the provisions of the Contract. The City shall pay monthly to the Contractor the balance not deducted and/or retained as aforesaid, except that payment may be withheld at any time, if in the judgment of the City, the work is not proceeding in accordance with the Contract. If the City deems it expedient to do so, it may cause estimates and payments to be made more frequently than once in each month. No progress estimate or payment need be made when in the judgment of the City, the total value of the Work done since the last estimate amounts to less than \$5,000.

Estimates of lump-sum items shall be based on a schedule dividing each such item into its appropriate component part, together with a quantity and a unit price for each part so that the sum of the products of prices and quantities will equal the contract price for the

item. This schedule shall be submitted by Contractor for and must have the approval of the City before the first estimate becomes due.

If the City determines that the progress of the Work will be benefited by the delivery to the site of certain materials and equipment, when available, in advance of actual requirement therefore and if such materials and equipment are delivered and properly stored and protected, the cost to the Contractor or subcontractor as established by invoices or other suitable vouchers satisfactory to the City, less the retained percentages as above provided, may be included in the progress estimates; provided always that there be duly executed and delivered by the Contractor to the City at the same time a Bill of Sale in form satisfactory to the City, transferring and assigning to the City full ownership and title to such materials or equipment.

- 1.35 **Partial Acceptance.** The City may at any time, in a written order to the Contractor (1) declare that he intends to use a specified part of the Work which, in his opinion, is sufficiently complete, in accordance with the Contract Documents, to permit its use; (2) enclose a tentative list of items remaining to be completed or corrected, and (3) fix the date of acceptance of that specified part of the Work.

Within 45 days after acceptance under this subsection, the City shall make an estimate, in writing, of the amount and value of the part of the Work, so accepted and shall pay said amount to the Contractor after deducting therefrom all previous payments, all charges against the Contractor as provided for hereunder, and all amounts to be retained under the provisions of the Contract, said payment to be made at the time of the next monthly progress estimate.

Acceptance by the City under this sub-section shall not relieve the Contractor of any obligations under the Contract Documents except to the extent agreed upon in writing between the City and the Contractor.

The City shall have the right to exclude the Contractor from any part of the Work which has been accepted, but the City will allow the Contractor reasonable access thereto to complete or correct items on the tentative list.

- 1.36 **Final Estimate and Payment.** As soon as practicable (but not more than sixty-five (65) days) after final completion of the Work, the City shall make a final estimate, in writing, of the quantity of work done under the Contract and the amount earned by the Contractor.

The City shall pay to the Contractor the entire amount found to be earned and due hereunder after deducting therefrom all previous payments, all charges against the Contractor as provided for hereunder, and all amounts to be retained under the provisions of the Contract. Except as in this sub-section otherwise provided such payment shall be made not later than fifteen (15) days after, but in no event before, the expiration of the time within which claims for labor performed or materials or equipment furnished must be filed under the applicable Lien Law, or, if such time is not specified by law, the expiration of thirty (30) days after the completion of the Engineer's final estimate. All quantities shown on progress estimates and all prior payments shall be subject to correction in the final estimate and payment.

- 1.37 **Liens.** If, at any time, any notices of lien are filed for labor performed or materials or equipment manufactured, furnished, or delivered to or for the Work, the Contractor shall, at its own cost and expense, promptly discharge, remove or otherwise dispose of the same, and until such discharge, removal or disposition, the City shall have the right to retain from any monies payable hereunder an amount which, in its sole judgment, it deems necessary to satisfy such liens and pay the costs and expenses, including attorneys' fees, of defending any actions brought to enforce the same, or incurred in connection therewith or by reason thereof.
- 1.38 **Claims.** If, at any time, there be any evidence of any claims for which the Contractor is or may be liable or responsible hereunder, the Contractor shall promptly settle or otherwise dispose of the same, and until such claims are settled or disposed of, the City may retain from any monies which would otherwise be payable hereunder so much thereof as, in its sole judgment, it may deem necessary to settle or otherwise dispose of such claims and to pay the costs and expenses, including attorneys' fees, of defending any actions brought to enforce such claims, or incurred in connection therewith or by reason thereof.
- 1.39 **No Waiver.** Neither the inspection by the City, nor any order, measurement, approval, determination, decision of certificate by the City for the payment of money; nor any payment for or use, occupancy, possession or acceptance of the whole or any part of the work by the City, nor any extension of time, nor any other act or omission of the City shall constitute or be deemed to be an acceptance of any defective or improper work, materials, or equipment nor operate as a waiver of any requirement or provision of the Contract, nor of any remedy, power or right of or herein reserved to the City, nor of any right to damages for breach of contract. Any and all rights and/or remedies provided for in the Contract are intended and shall be construed to be cumulative; and, in addition to each and every other right and remedy provided for herein or by law, the City shall be entitled as of right to a writ of injunction against any breach or threatened breach of the Contract by the Contractor, by his sub-contractors or by any other person or persons.
- 1.40 **Liability of City.** No person, firm or corporation, other than the Contractor, who signed the Contract as such, shall have any interest herein or right hereunder. No claim shall be made or be valid either against the City or any agent of the City and neither the City nor any agent of the City shall be liable for or be held to pay any money, except as herein provided. The acceptance by the Contractor of the payment as fixed in the final estimate shall operate as and shall be a full and complete release of the City and of every agent of the City of and from any and all claims, demands, damages and liabilities of, by or to the Contractor for anything done or furnished for or arising out of or relating to or by reason of the Work or for or on account of any act or neglect of the City or of any agent of the City or of any other person, arising out of, relating to or by reason of the Work, except the claim against the City for the unpaid balance, if any there be, of the amounts retained as herein provided.
- 1.41 **Guarantee.** The Contractor guarantees that the Work and services to be performed under the Contract, and all workmanship, materials and equipment performed, furnished, used or installed in the construction of the same, shall be free from defects and flaws, and shall be performed and furnished in strict accordance with the drawings, specifications, and other contract documents, that the strength of all parts of all manufactured equipment

shall be adequate and as specified and that the performance test requirements of the Contract shall be fulfilled.

- 1.42 **Cleaning Up.** The Contractor, at all times, shall keep the site of the Work free from rubbish and debris caused by his operations under the Contract. When the Work has been completed, the Contractor shall remove from the site of the Work all of his plant, machinery, tools, construction equipment, temporary work and surplus materials so as to leave the Work and the site clean and ready for use.
- 1.43 **Legal Address of Contractor.** The Contractor's business address and his office at or near the site of the Work are both hereby designated as places to which communications in a postpaid wrapper directed to the Contractor's business address in a post office box regularly maintained by the Post Office Department or the delivery at either designated address of any letter, notice, or other communication by mail or otherwise shall be deemed sufficient service thereof upon the Contractor, and the date of such service shall be the date of receipt. The first named address may be changed at any time by an instrument, in writing, executed and acknowledged by the Contractor and delivered to the City. Service of any notice, letter or other communication upon the Contractor personally shall likewise be deemed sufficient service.
- 1.44 **Modification of Termination.** Except as otherwise expressly provided herein, the Contract may not be modified except in writing signed by the parties hereto.

MEASUREMENT AND PAYMENT

MEASUREMENT AND PAYMENT

General: The following subsections describe the measurement of and payment for the work to be done under items listed in the Bid.

Each unit or lump sum price stated in the Bid shall constitute full compensation as herein specified for each item of work completed in accordance with the drawings and specifications, including cleaning up.

The price for those items that involve excavation shall include compensation for disposal of surplus excavated materials, handling water, and installation of all necessary sheeting and bracing.

In all items involving excavation, the price shall be based on doing the entire excavation in earth. Where rock is excavated, the price, therefore, shall be in addition to the cost of excavating earth and no deduction will be made in the amount for earth excavation.

Item 1 Site Preparation and Cleanup (Mobilization/Demobilization). The total price bid for Site Preparation shall not exceed five (5) percent of the total amount of the remaining bid items. The lump sum price for Item 1 shall constitute full compensation for preparing the site including (but not limited to): sawcutting of sidewalks, roadways, and driveways; removal and stockpiling of loam; removal and disposal of trees, brush, and stumps as required; disposal of surplus loam material as directed; protecting property pins, bounds and other documentation, fences, walls, and walks; and removing and resetting signs as required. The price shall also include protection of excavations left open, all safety and construction signage, obtaining all permits, cleanup and all other related work necessary, indicated by the plans, or as specified or directed.

Item 2 Earth Excavation (Unsuitable Materials). Under Item 2, the quantity of earth excavation to be paid for shall be the number of cubic yard of excavation not otherwise classified or paid for under other items.

The unit price per cubic yard for Item 2 shall constitute full compensation for general excavation and disposal of surplus materials.

Item 3 Processed Gravel Base. The unit price for Item 3 shall constitute full compensation for the furnishing, placing, grading and compacting of processed gravel as directed and as specified, including all labor and equipment.

Under Item 3, the quantity of processed gravel shall be measured in cubic yards, placed and compacted. The amount of processed gravel paid for will be equal to the actual amount of processed gravel placed and compacted.

Item 4 Remove and Dispose of Existing Timber Retaining Wall. The lump sum price for Item 4 shall constitute full compensation for the removal and disposal of the existing timber retaining wall as directed and as specified, including all labor and equipment.

Item 5 Constructing Versa-Lok or Approved Equal Retaining Wall. The unit price for Item 5 shall constitute full compensation for constructing Versa-Lok or approved equal retaining wall,

including underdrain and placement and compaction of backfill as shown on the plans and as directed by the Engineer.

Under Item 5, measurement for constructing Versa-Lok or approved equal retaining wall shall be measured in square yards. The amount paid for will be the actual square yards of retaining wall constructed, including all labor, materials, and equipment required for or incidental to the Work.

Item 6 Loaming The unit price for Item 6 shall constitute full compensation for placing loam in the areas shown on the plans and to the specifications given, or as directed by the Engineer.

Under Item 6, the quantity shall be measured in cubic yards. The amount paid for will be the actual cubic yards of loam placed, including all labor and equipment required.

Item 7 Seeding The unit price for Item 7 shall constitute full compensation for placing seed in the areas shown on the plans and to the specifications given, or as directed by the Engineer.

Under Item 7, the quantity shall be measured in square yards. The amount paid for will be the actual square yards of seed placed, including all labor and equipment required.

Item 8 Removing and Replacing Existing Concrete Stairs. The unit price for Item 8 shall constitute full compensation, including all material, labor, equipment, tools, and incidentals, for the removal and disposal of the existing concrete stairs between Fiske Avenue and the Fiske Avenue Parking Lot, and the construction of new concrete stairs, according to the plans and specifications given, or as directed and specified. The existing metal railings for the stairs shall be refurbished under this Bid Item. The metal railings shall be removed prior to the demolition of the existing concrete stairs, sanded, re-painted black, and reattached to the new sidewalls of the stairs.

Under Item 8, Removing and Replacing Existing Concrete Stairs, will not be measured but will be paid for at the Contract Bid Lump Sum Price.

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

ITEM 1 SITE PREPARATION AND CLEANUP (Mobilization/Demobilization)

- 1.1 General
- 1.2 Clearing
- 1.3 Grubbing
- 1.4 Disposal
- 1.5 Care of Loam
- 1.6 Work in Improved Property
- 1.7 Relocation of Trees, Shrubs, Hedges, and Fences
- 1.8 Work in Easements
- 1.9 Stone Walls and Fences
- 1.10 Fill
- 1.11 Clean-up
- 1.12 Construction Signs
- 1.13 Sawcutting

1.1 General. The Contractor shall furnish all labor, materials, tools and equipment necessary and shall do all work to prepare the site as indicated on the drawings and as herein specified.

Extreme care shall be taken by the Contractor and his employees not to damage trees, and the Contractor shall be responsible for all damage done.

1.2 Clearing. From areas to be cleared, the Contractor shall cut or otherwise remove all designated trees, saplings, brush, vines, and other vegetable matter such as snags, sawdust, bark, etc., and refuse.

1.3 Grubbing. The area to be grubbed shall be the same as that which is to be cleared. Grubbing shall consist of the complete removal of all tree stumps and all roots larger than 3 in. in diameter to a depth of 6 in. below the ground surface. Such depths shall be measured from the existing ground surface or the proposed finished grade, whichever is the lower.

1.4 Disposal. All material collected by the Contractor in the course of clearing and grubbing shall be hauled away for disposal off the site. Such disposal shall be carried on as promptly as possible after removal of material in the grubbing operations and shall not be left until the final period of cleaning up.

1.5 Care of Loam. Wherever work in easements is to be done, the Contractor shall first scrape all loam to one side so that it will not become mixed with the roadway or other excavation materials. After the construction work is completed, the loam shall be re-spread upon the land. No loam shall be taken away from the easements, and if the existing loam is of an insufficient amount, the Contractor at his own expense, shall furnish and spread loam to a minimum compacted thickness of 6 in.

1.6 Work in Improved Property. Trees, cultivated hedges, lawns, shrubs, and plants which might be damaged by the Contractor's operations shall be protected by suitable means or shall be dug up and temporarily replanted and cared for. After the construction operations have been substantially completed, they shall be replanted in their original positions and cared for until growth is re-established. If trees, cultivated hedges, lawns, shrubs and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced at the Contractor's expense by items of kind and quality at least equal to the kind and quality existing at the start of the Work.

In all work in improved property, the Contractor shall do such hand work as may be required to prevent damage to buildings or trees.

1.7 Relocation of Trees, Shrubs, Hedges, and Fences. Where trees, shrubs, hedges, and fences interfere with the Work, the trees, shrubs, and hedges will be replanted by the Contractor, as indicated on the plans, or directed by the Engineer. Said trees, shrubs, and hedges will be replanted on improved property. The Contractor shall be responsible for care of said plantings, and responsible for re-establishing growth. If the trees, shrubs, or hedges are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced at the Contractor's expense (see Item 1.6).

In the instance of fences conflicting with the construction work these fences shall be relocated to private property by the Contractor as indicated on the plans, or directed by the Engineer.

Any trees, shrubs, or hedges requiring trimming over City land shall be done by the Contractor as indicated on the plans, or as directed by the Engineer.

1.8 Work in Easements. After the construction work is completed, all easements shall be loamed and seeded as specified under LOAMING AND SEEDING.

1.9 Stone Walls and Fences. Wherever stone walls or fences need to be removed to provide access to the Work or if stone walls or fences are damaged during the progress of the Work, they shall be restored or repaired to as good condition as existed prior to entry, or disposed of if directed by the Engineer.

1.10 Fill. The Contractor shall fill where needed, within the easement, to provide cover as indicated on the drawings.

1.11 Clean-up. During its progress the work and the adjacent areas affected thereby shall be kept cleaned up and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damage repaired so that the public and property owners will be inconvenienced as little as possible.

Where material or debris have washed or flowed into or been placed in existing water courses, ditches, gutters, drains, pipes, structures, work done under this contract or elsewhere during the course of the Contractor's operations, such material or debris shall be entirely removed and satisfactorily disposed of during the progress of the work, and the ditches, channels, drains, pipes, structures, and work, etc., shall upon completion of the work, be left in a clean and neat condition.

On or before the completion of the work, the Contractor shall, unless otherwise especially directed or permitted, in writing, tear down and remove all temporary buildings and structures built by him; shall remove all temporary works, tools, and machinery or other construction equipment furnished by him; shall remove, acceptably disinfect, and cover all organic matter and material containing organic matter in, under, and around privies, houses and other buildings used by him; shall remove all rubbish from any grounds which he has occupied; and shall leave the roads and all parts of the premises and adjacent property affected by his operations in a neat and satisfactory condition.

The Contractor shall restore or replace, when and as directed, any public or private property damage by his work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end, the Contractor shall do as required all necessary highway or driveway walk and landscaping work. Suitable materials, equipment, and methods shall be used for such restoration. The Contractor shall be responsible for replacing or resetting lost or damaged property pins and bounds, whether private or public, by a registered land surveyor.

1.12 Construction Signs. The Contractor shall supply, erect, and properly maintain all temporary advance warning construction signs in all areas to be affected by his operations. Signs shall be placed in locations shown on the plans or as specified and no work will begin until all such signs are in place and their locations approved by the Engineer.

All signs shall conform to the specifications set forth in the Manual on Uniform Traffic Control Devices, latest edition, or to specifications shown in the detail section of the plans.

1.13 Sawcutting. Any sawcutting required for the sidewalk, roadways and driveways shall be performed by the Contractor utilizing a water cooled saw, as indicated on the plans, or as directed by the Engineer.

ITEM 2 EARTH EXCAVATION, BACKFILL, FILL, AND GRADING

- 2.1 General
- 2.2 Description
- 2.3 Extent of Open Excavation
- 2.4 Separation of Surface Materials
- 2.5 Sheeting and Bracing
- 2.6 Drainage
- 2.7 Trench Excavation
- 2.8 Depth of Trench
- 2.9 Width of Trench
- 2.10 Trench Excavation in Fill
- 2.11 Excavation Near Existing Structures
- 2.12 Protection of Existing Structures
- 2.13 Relocation and Replacement of Existing Structures
- 2.14 Care and Restoration of Property
- 2.15 Unauthorized Excavation
- 2.16 Elimination of Unsuitable Material
- 2.17 Disposal of Surplus Excavated Materials

- 2.18 Dust Control
- 2.19 Bridging Trenches
- 2.20 Backfilling - General
- 2.21 Fill and Backfill Under Structures
- 2.22 Backfilling Around Structures
- 2.23 Backfilling Pipe Trenches
- 2.24 Material for Filling and Embankments
- 2.25 Preparation of Subgrade
- 2.26 Placing and Compacting Embankment Material

2.1 General. The Contractor shall make excavation of normal depth in earth for trenches and structures; shall backfill such excavations to the extent necessary; shall furnish the necessary materials and construct embankments and fills and shall make miscellaneous earth excavations and do miscellaneous grading. All such work shall be done as indicated on the drawings and as herein specified.

The program of excavation, dewatering, sheeting, and bracing shall be carried out in such manner as to eliminate all possibility of undermining or disturbing the foundations of existing structures or of work previously completed under this contract.

2.2 Description. The Contractor shall make excavations in such manner and to such widths as will give suitable room for building the structures or laying and jointing the piping; shall furnish and place all sheeting, bracing, and supports; shall do all cofferdamming, pumping, and draining; and shall render the bottom of the excavations firm and dry and acceptable in all respects.

In no case, except as provided for in the sections TRENCH EXCAVATION and PREPARATION OF SUBGRADE, shall the earth be plowed, scraped, or dug by machinery so near to the finished subgrade as to result in the disturbance of material below said subgrade, but the last of the material to be excavated shall be removed with pick and shovel just before the placing of the pipe, masonry, or other structure.

All excavation, except as otherwise specified or permitted, shall be made in the open.

2.3 Extent of Open Excavation. The length of trench open at any one time will be controlled by the conditions, subject to any limits that may be prescribed by the Engineer.

2.4 Separation of Surface Materials. The Contractor shall remove only as much of any existing pavement as is necessary for the prosecution of the work. The pavement cut shall be made with an approved saw, without extra compensation to the Contractor. Where pavement is removed in large pieces, it shall be disposed of before proceeding with the excavation.

2.5 Sheeting and Bracing. The Contractor shall furnish, put in place, and maintain such sheeting, bracing, etc., as may be necessary to support the sides of the excavation and to prevent any movement of earth which could in any way diminish the width of the excavation to less than that necessary for proper construction, or could otherwise injure or delay the work, or endanger adjacent structures.

Whenever possible, sheeting shall be driven ahead of the excavation to avoid loss of material from behind the sheeting. If it is necessary to excavate below the sheeting, care shall be taken to

avoid trimming behind the face along with the sheeting will be driven. Care shall be taken to prevent voids outside of the sheeting, but, if voids occur, they shall be filled immediately with sand and compacted.

The Contractor shall leave in place to be embedded in the backfill, or concrete, all sheeting, bracing, etc., which is indicated on the drawings to be so left in place. He also shall leave in place any and all other sheeting, bracing, etc., which the Engineer may direct him in writing to leave in place, at any time during the progress of the work, for the purpose of preventing injury to structures or property.

The Engineer may direct that sheeting and bracing be cut off at any specified elevation.

All sheeting and bracing not to be left in place shall be carefully removed in such manner as not to endanger the construction or other structures. All voids left or caused by the withdrawal of sheeting shall be backfilled immediately using approved materials and compaction methods.

2.6 Drainage.

- a. General. To ensure proper conditions at all time during construction, the Contractor shall provide and maintain ample means and device (including spare units kept ready for immediate use in case of breakdowns) with which to intercept and/or remove promptly and dispose properly of all water entering trenches and other excavation. Such excavations shall be kept dry until the structures, pipes, and appurtenances to be built therein have been completed to such extent that they will not be floated or otherwise damaged.

All water pumped or drained from the work shall be disposed of in a suitable manner without undue interference with other work, damage to pavements, other surfaces, or property. Suitable temporary pipes, flumes, or channels shall be provided for water that may flow along or across the site of the work.

- b. Temporary Underdrains. Temporary underdrains, if used, shall be laid in trenches beneath the grade of the structure. Trenches shall be of suitable dimensions to provide room for the chosen size of underdrain and its surrounding gravel.

Underdrain pipe shall be acceptable vitrified clay or concrete pipe of standard thickness. Sewer pipe of the quality know as "seconds" will be acceptable.

Underdrains, if used, shall be laid at an approved distance below the bottom of the normal excavation and with open joints wrapped in cheesecloth, and entirely surrounded by graded gravel, or crushed stone to prevent the admission of sand or other soil into the underdrains. The distance between the bottom of the pipe or structure and the top of the bell of the underdrain pipe shall be at least 3 inches unless otherwise permitted. The space between the underdrain and the pipe or structure shall be filled with screened gravel or crushed stone which shall be rammed if necessary and left with a surface suitable for laying the pipe or building the structure.

- c. Drainage Wellpoint System. If necessary, the Contractor shall dewater the excavations by means of an efficient drainage wellpoint system which will drain the soil and prevent saturated soil from flowing into the excavation. The wellpoints shall be designed especially for this type of service. The pumping until shall be designed for use with the wellpoints, and

shall be capable of maintaining a high vacuum and, of handling large volumes of air and water at the same time.

The installation of the wellpoints and pump shall be done under the supervision of a competent representative of the manufacturer. The Contractor shall do all special work such as surrounding the wellpoints with sand or gravel or other work which is necessary for the wellpoint system to operate for the successful dewatering of the excavations.

2.7 Trench Excavation. Where pipe is to be laid in gravel bedding or concrete cradle, the trench may be excavated by machinery to, or to just below, the designated subgrade, provided that the material remaining at the bottom of the trench is no more than slightly disturbed.

Where pipe is to be laid directly on the trench bottom, the lowest part of trenches in earth shall not be excavated to subgrade by machinery, but just before the pipe is to be placed, the last of the material to be excavated shall be removed by means of hand tools to form a flat or shaped bottom, true to grade, so that the pipe will have a uniform and continuous bearing and support on firm and undisturbed material between joint except for limited areas where the use of pipe slings may have disturbed the bottom.

2.8 Depth of Trench. Trenches shall be excavated to such depths as will permit the pipe to be laid at the elevations, slopes, or depths of cover indicated on the drawings and as specified.

2.9 Width of Trench. Pipe trenches shall be made as narrow as practicable and shall not be widened by scraping or loosening materials from the sides. Every effort shall be made to keep the sides of the trenches firm and undisturbed until backfilling has been completed and consolidated.

Trenches shall be excavated with approximately vertical sides between the elevation of the center of the pipe and an elevation one foot above the top of the pipe.

2.10 Trench Excavation in Fill. If pipe is to be laid in embankments or other recently filled material, the material shall first be placed to the top of the fill or to a height of at least one foot above the top of the pipe, whichever is the lesser. Particular care shall be taken to ensure maximum consolidation of material under the pipe location. The pipe trench shall be excavated as though in undisturbed material.

2.11 Excavation Near Existing Structures. Attention is directed to the fact that there are pipes, drains, and other utilities in certain locations. Some of these have indicated on the drawings, but no attempt has been made to show all of the services and the completeness of accuracy of the information given is not guaranteed.

As the excavation approaches pipes, conduits, or other underground structures, digging by machinery shall be discontinued and the excavation shall be done by means of hand tools. Such manual excavation when incidental to normal excavation shall be included in the work to be done under items involving normal excavation.

Where determination of the exact location of pipe or other underground structure is necessary for doing the work properly, the Contractor may be required to excavate test pits to determine such locations. When such test pits may be properly considered as incidental to other excavation, the Contractor shall receive no additional compensation, the work being understood to be included

as part of the excavation. When the Engineer orders test pits beyond the limits of excavation he considers a part of the work, such test pits shall be paid for as specified under MEASUREMENT AND PAYMENT.

2.12 Protection of Existing Structures. All existing pipes, poles, wires, fences, curbing, property line markers and other structures which the Engineer decided must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from injury by the Contractor. Should such items be injured, they shall be restored by the Contractor, without compensation, to at least as good condition as that in which they were found immediately before the work was begun.

2.13 Relocation and Replacement of Existing Structures. Whenever the Contractor encounters certain existing structures as described below and is so ordered in writing, he shall do the whole or such portions of the work as he may be directed, to change the location of, remove and later restore, replace such structures, or to assist the owner thereof in so doing. For all such work the Contractor shall be paid under such items of work as may be applicable, other as Extra Work.

In removing existing pipes or other structures, the Contractor shall use care to avoid damage to materials, and the Engineer shall include for payment only those new materials which, in his judgment, are necessary to replace those unavoidably damaged.

The structures to which the provisions of the preceding two paragraphs shall apply include pipes, wires and other structures which meets all of the following: (a) are not indicated on the drawings otherwise provided for, (b) encroach upon or are encountered near and substantially parallel to the edge of the excavation, and (c) in the opinion of the Engineer will impede progress to such an extent that satisfactory construction cannot proceed until they have been changed in location, removed (to be later restored), or replaced.

When fences interfere with the Contractor's operations, he shall remove and (unless otherwise specified) later restore them to at least as good condition as that in which they were found immediately before the work was begun, all without additional compensation. The restoration of fences shall be done as promptly as possible and not left until the end of the construction period.

2.14 Care and Restoration of Property. The Contractor shall enclose the trunks of trees adjacent to his work and not to be cut, with substantial wooden boxes of such height as may be necessary to protect them from injury from piled material, from equipment, from his operations, or otherwise due to his work. Excavation machinery and cranes shall be of suitable type and be operated with care to prevent injury to trees not to be cut and particularly to overhanging branches and limbs.

Branches, limbs, and roots shall be cut except by permission of the Engineer. All cutting shall be smoothly and neatly done without splitting or crushing. In case of cutting or unavoidable injury to branches, limbs, and trunks or trees, the cut or injured portions shall be neatly trimmed and covered with an application of grafting wax or tree healing paint as directed.

Cultivated hedges, shrubs, and plants which might be injured by the Contractor's operations shall be protected by suitable means or shall be dug up and temporarily replanted and maintained. After the construction operations have been substantially completed, they shall be replanted in their original positions and cared for until growth is re-established. If cultivated hedges, shrubs, and plants are injured to such a degree as to affect their growth or diminish their beauty or

usefulness, they shall be replaced by items of kinds and quality at least equal to the kinds and quality existing at the start of the work.

On paved surfaces the Contractor shall not use or operate tractors, bulldozers, or other power-operated equipment the treads or wheels of which are so shaped as to cut otherwise injure such surfaces.

In locations where excavation passes thus existing agricultural areas and fields, the cost of repairing the trench surface is to be included in the pipe laying price.

In such areas, the existing loam and surface materials are to be stripped and placed one side prior to excavation. After completion of backfilling, this "saved" surface material is to be returned to the top of the trench. After natural settlement and compaction has taken place, the trench surface is to be harrowed, dragged and mechanically raked as necessary to produce a smooth and level surface. The area is then to be sowed with "orchard grass" or "rye grass" or other such materials to hold the soil and produce a growth similar to that existing prior to pipe laying operations.

This provision for clean-up in agricultural areas applies only to locations where the trench surface is now substantially pasture land or the equivalent thereof. In cases where the trench surface running alongside a road is in scrub growth or natural weed growth, this provision will not apply.

All surfaces which have been injured by the Contractor's operations shall be restored to a condition at least equal to that in which they were found immediately before work was begun. Suitable materials and methods shall be used for such restoration.

The restoration of existing property or structures shall be done as promptly as practicable and shall not be left until the end of the construction period.

2.15 Unauthorized Excavation. If the bottom of any excavation is taken out beyond the limits indicated or prescribed, the resulting void shall be backfilled at the Contractor's expense with thoroughly compacted, screened gravel, if the excavation was for a pipeline, or with Class B concrete, if the excavation was for a masonry structure.

2.16 Elimination of Unsuitable Material. If material unsuitable for foundation (in the opinion of the Engineer) is found at or below the grade to which excavation would normally be carried in accordance with the drawings and/or specifications, the Contractor shall remove such material to the required width and depth and replace it with thoroughly compacted screened gravel, bank-run gravel, fine aggregate or concrete as directed.

2.17 Disposal of Surplus Excavated Materials. No excavated materials shall be removed from the site of the work or disposed of by the Contractor except as directed or approved.

Surplus excavated materials suitable for backfill shall be used to backfill normal excavations in rock or to replace other materials unacceptable for use as backfill; shall be neatly deposited and graded so as to make or widen fills, flatten side slopes, or fill depressions; or shall be neatly deposited for other purposes within a haul of one mile from the point of excavation; all as directed or approved and without additional compensation.

Surplus excavated materials not needed as specified above shall be hauled away and dumped by the Contractor, at his expense, at appropriate locations, and in accordance with arrangements made by him.

2.18 Dust Control. During the progress of the work, the Contractor shall conduct his operations and maintain the area of his activities, including sweeping and sprinkling of streets as necessary, so as to minimize the creation and dispersion of dust. If the Engineer decides that it is necessary to use liquid calcium chloride for more effective dust control, the Contractor shall furnish and spread the material as directed.

2.19 Bridging Trenches. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings where requires for the accommodation of travel, and to provide access to private property during construction, and shall remove said structures thereafter.

2.20 Backfilling – General. In general, and unless other material is indicated on the drawings or specified, material used for backfilling trenches and excavations around structures shall be suitable material which was removed in the course of making the construction excavations.

Frozen material shall not be placed in the backfill nor shall backfill be placed upon frozen material. Previously frozen material shall be removed or shall be otherwise treated as required, before new backfill is placed.

Wherever a percentage of compaction for backfill is indicated or specified, it shall be the percent of maximum density at optimum moisture as determined by Method D of ASTM Standard Methods of Test for Moisture – Density Relations of Soils Using 10 lbs. Rammer and 18-inch Drop, Designation D1157-70.

2.21 Fill and Backfill Under Structures. Unless otherwise indicated or specified, all fill and backfill under structures and pavements adjacent to structures shall be compacted bank-run gravel containing not more than ten percent material passing a 200 sieve. When coarse aggregate and fine aggregate are indicated or specified for use under structures, they shall conform to the requirements for coarse and fine aggregate specified under CONCRETE WORK.

The fill and backfill materials shall be placed in layers not exceeding 6 inches in thickness. Unless otherwise indicated or specified, each layer shall be compacted to 95 percent.

2.22 Backfilling Around Structures. The Contractor shall not place backfill against or on structures until they have attained sufficient strength to support the loads (including construction loads) to which they will be subjected, without distortion, cracking, or other damage. As soon as practicable after the structures are structurally adequate and other necessary work has been done, special leakage tests, if required, shall be made. Promptly after the completion of such tests, the backfilling shall be started and then shall proceed until its completion.

The best of the excavated materials shall be used in backfilling within two feet of the structures. Unequal soil pressures shall be avoided by depositing the material evenly around the structures. The material shall be placed and compacted to 90 percent unless otherwise indicated or specified.

2.23 Backfilling Pipe Trenches. As soon as practicable after the pipes have been laid and the joints have acquired a suitable degree of hardness, if applicable, or the structures have been build

and are structurally adequate to support the loads, including construction loads to which they will be subjected, the backfilling shall be started and thereafter it shall proceed until its completion.

With the exception mentioned below in this paragraph, trenches shall not be backfilled at pipe joints until after that section of the pipeline has successfully passed any specified test required. Should the Contractor wish to minimize the maintenance of lights and barricades and the obstruction of traffic, he may, at his own risk backfill the entire trench, omitting or including backfill at joints as soon as practicable after the joints have acquired a suitable degree of strength. He shall, however, be responsible for removing and later replacing such backfill, at his own expense, should he be ordered to do so in order to locate and repair or replace leaking or defective joints or pipe.

- a. **Materials.** The nature of materials will govern both their acceptability for backfill and the methods best suited for their placement and compaction in the backfill. No stone or rock fragment larger than 12 inches in greatest dimension shall be placed in the backfill nor shall large masses of backfill material be dropped into the trench in such a manner as to endanger the pipeline. If necessary, a timber grillage shall be used to break the fall of material dropped from a height of more than five feet. Pieces of bituminous pavement shall be excluded from the backfill unless their use is expressly permitted, in which case they shall be broken up as directed.
- b. **Zone Around Pipe.** The zone around the pipe shall be backfilled with the materials and to the limits indicated on the drawings. Material shall be compacted to 90 percent by tamping.
- c. **Remainder of Trench.** The remainder of the trench above the zone around the pipe shall be compacted by tamping, puddling, or water-jetting, in accordance with the nature of the material and the compaction requirements. In general, the tamping method will be used by the Contractor to achieve the desired compaction. Water-jetting or puddling may be used only if, in the opinion of the Engineer, it is necessary to employ one of these methods.
- d. **Water-Jetting.** If the backfill is to be compacted by water-jetting, the material shall be placed in the trench and then shall be thoroughly saturated throughout its full depth and at frequent intervals across and along the trench until all slumping ceases. To accomplish this, the Contractor shall furnish one or more jet pipes, each of sufficient length to reach to the specified depth and of sufficient diameter (not less than 1 ¼ inches) to supply an adequate flow of water to compact the material. The jet pipe shall be equipped with a quick-acting valve and be supplied through a fire hose from a hydrant or a pump having adequate pressure and capacity.
- e. **Puddling.** If the backfill is to be compacted by puddling, the material shall be deposited in water of sufficient depth so that the material will be submerged when in place. Dams or dikes constructed in the trench to hold the water used for puddling shall be compacted by tamping as specified below.
- f. **Tamping.** If the material is to be compacted by tamping, or under appropriate circumstances, rolling, the material shall be deposited and spread in uniform, parallel layers not exceeding 8 inches thick before compaction. Before the next layer is placed, each layer shall be tamped as required so as to obtain a thoroughly compacted mass. Care shall be taken that the material close to the bank, as well as in all other portions of the trench, is thoroughly compacted. When the trench width and the depth to which backfill has been placed are sufficient to make it feasible, and it can be done effectively and without damage to the pipe, backfill may, on approval, be compacted by the use of suitable rollers, tractors, or similar powered equipment instead of by tamping. For compaction by tamping (or rolling), the rate at which backfilling material is deposited in the trench shall not exceed that permitted by the facilities for its spreading, leveling and compacting as furnished by the Contractor.

If necessary to ensure proper compaction by tamping (or rolling), the material shall first be wet by sprinkling. However, no compaction by tamping (or rolling) shall be done when the material is too wet either from rain or too great an application of water to be compacted properly; at such times the work shall be suspended until the previously placed and new materials have dried out sufficiently to permit proper compacting, or such other precautions shall be taken as may be necessary to obtain proper compaction.

- g. Miscellaneous Requirements. Whatever method of compacting backfill is used, care shall be taken that stones and lumps shall not become nested and that all voids between stones shall be completely filled with fine material. Only approved quantities of stones and rock fragments shall be used in the backfill; the Contractor shall, as part of the work done under the items involving earth excavation and rock excavation as appropriate, furnish and place all other necessary backfill material.

All voids left by removal of sheeting shall be completely backfilled with suitable materials, and thoroughly compacted.

Excavated material which is acceptable to the Engineer for surfacing or pavement sub-base shall be placed at the top of the backfill to such depths as may be specified elsewhere or as directed. The surface shall be brought to the required grade and stones raked out and removed.

2.24 Material for Filling and Embankments. Approved selected materials available from the excavations and not required for backfill around pipes or against structures, shall be used for filling and building embankments, except as otherwise specified. The Contractor shall be responsible to handle this material, stockpile, and re-handle it as directed; all without additional compensation. Material needed in addition to that available from construction operations shall be obtained from approved gravel banks or other approved deposits.

All material, whether from the excavations or from borrow, shall be made of such nature that after it's been placed and properly compacted, it will make a dense, stable fill. It shall not contain vegetation, masses of roots, individual roots, more than 18 inches long, or more than 1/2 inch in diameter, stones over 6 inches in diameter, or porous matter. Organic matter shall not exceed minor quantities and shall be well distributed.

2.25 Preparation of Subgrade. The Contractor shall remove loam and topsoil, loose vegetable matter, stumps, large roots, etc., from areas upon which embankments will be built or material will be placed for grading. The subgrade shall be shaped as indicated on the drawings and shall be so prepared by forking, furrowing, or plowing that the first layer of the new material placed thereon will be well bonded to it.

2.26 Placing and Compacting Embankment Material. After the subgrade has been prepared as hereinbefore specified, the material shall be placed thereon and built up in successive layers until it has reached the required elevation.

Layers shall not exceed 12 inches in thickness before compaction. In embankments at structures, the layers shall have a slight downward slope away from the structure; in other embankments the layers shall have a slight downward slope away from the center. In general, the finer and less

previous materials shall be placed against the structures or in the center, and the coarser and more pervious materials, upon the outer parts of embankments.

Each layer of material shall be compacted by the use of approved rollers or other approved means so as to secure a dense, stable, and thoroughly compacted mass. At such points as cannot be reached by mobile mechanical equipment, the materials shall be thoroughly compacted by the use of suitable power-driven tampers.

Previously placed or new materials shall be moistened by sprinkling, if required, to ensure proper bond and compaction. No compacting shall be done when the material is too wet, from either rain or too great an application of water, to compact it properly; at such times the work shall be suspended until the previously placed and new materials have dried out sufficiently to permit proper compaction, or such other precautions shall be taken as may be necessary to obtain proper compaction.

The portion of embankment constructed below proposed structures shall be compacted to 95 percent. The top two feet of an embankment below a pavement base shall be compacted to 95 percent. All other embankments shall be compacted to 90 percent.

ITEM 3 PROCESSED GRAVEL BASE

- 3.1 General
- 3.2 Processed Gravel
- 3.3 Placement and Compaction

3.1 General. The processed gravel base shall conform to the specifications set forth in the following sub-sections.

3.2 Processed Gravel. Processed gravel shall consist of clean, hard, durable particles or fragments, free from an excess of soft thin elongated, laminated or disintegrated pieces, and shall conform to the following gradation requirements. Crushed rock of comparable size and grading may be used.

<u>Sieve</u>	<u>Percent Passing</u>
2 inch	100%
1 ½ inch	70-100%
¾ inch	50-85%
No. 4	30-60%
No. 200	0-12%

All processed gravel must be approved prior to placement. The Contractor shall deliver suitable samples of processed gravel to the Engineer for testing purposes. At the end of a 48 hour period, the Engineer shall either accept or reject the material. Existing on-site base material must be approved by the Engineer prior to re-use.

3.3 Placement and Compaction. The base course shall be placed to the depths indicated on the drawings and/or as specified by the Engineer or his representatives. The gravel shall be placed

in a maximum of 4-inch lifts and shall be thoroughly compacted to not less than 95% of the maximum dry density.

ITEM 4 REMOVAL & DISPOSAL OF EXISTING TIMBER RETAINING WALL

General. The Contractor shall excavate and dispose of the existing timber retaining wall as indicated on the drawings and as directed by the Engineer. The existing retaining wall shall be removed from the site and disposed of in a suitable manner. Care will be taken not to damage or destroy any existing utilities as outlined in the section on EARTH EXCAVATION, BACKFILL, FILL, and GRADING, Protection of Existing Structures. The Contractor shall pay particular attention to the protection of the five (5) existing light poles and associated conduit behind the retaining wall. The existing light poles and conduit shall be secured in place during the removal of the existing wall and during the construction of the new retaining wall. Phased removal and construction shall be done to minimize exposure.

ITEM 5 SPECIFICATION FOR SEGMENTAL RETAINING WALL SYSTEMS

PART 1: GENERAL

1.01 Description

A. Work shall consist of furnishing materials, labor, equipment and supervision to install a segmental retaining wall system in accordance with plans and specifications and in reasonably close conformity with the lines, grades, design and dimensions shown on plans or established by Owner or Owner's Engineer.

1.02 Reference Standards

A. Segmental Retaining Wall Units

1. **ASTM C 140** – Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
2. **ASTM C 1372** – Standard Specification for Dry-Cast Segmental Retaining Wall Units

B. Geosynthetic Reinforcement

1. **ASTM D 4595** – Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method
2. **ASTM D 5262** – Standard Test Method for Evaluating the Unconfined Tension Creep and Creep Rupture Behavior of Geosynthetics
3. **ASTM D 5321** – Standard Test Method for Determining the Shear Strength of Soil-Geosynthetic and Geosynthetic-Geosynthetic Interfaces by Direct Shear
4. **ASTM D 5818** – Standard Practice for Exposure and Retrieval of Samples to Evaluate Installation Damage of Geosynthetics

5. **ASTM D 6706** – Standard Test Method for Measuring Geosynthetic Pullout Resistance in Soil

C. Soils

1. **ASTM D 698** – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort
2. **ASTM D 2487** – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
3. **ASTM D 422** – Standard Test Method for Particle-Size Analysis of Soils
4. **ASTM D 4318** – Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils
5. **ASTM G 51** – Standard Test Method for Measuring pH of Soil for Use in Corrosion Testing

D. Drainage Pipe

1. **ASTM F 758** – Standard Specification for Smooth-Wall Polyvinyl Chloride (PVC) Plastic Underdrain Systems for Highway, Airport and Similar Drainage
2. **ASTM F 405** – Standard Specification for Corrugated Polyethylene (PE) Pipe and Fittings

E. Engineering Design

1. “NCMA Design Manual for Segmental Retaining Walls,” 3rd Edition, 2009.

F. Where specifications and reference documents conflict, the Wall Design Engineer shall make the final determination of applicable document.

1.03 Submittals

- A. **Materials Submittals:** The Contractor shall submit manufacturers' certifications two weeks prior to start of work stating that the SRW units and geosynthetic reinforcement meet the requirements of Section 2 of this specification.
- B. **Design Submittal:** The Contractor shall submit a final retaining wall plan for approval at least one week prior to the beginning of wall construction.

1.04 Delivery, Storage and Handling

- A. Contractor shall check materials upon delivery to ensure that the specified type and grade of materials have been received and proper color and texture of SRW units have been received.
- B. Contractor shall store and handle materials in accordance with manufacturer's recommendations and in a manner to prevent deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breaking, chipping or other causes.

- C. Contractor shall prevent excessive mud, wet concrete, epoxies and similar materials that may affix themselves from coming in contact with materials.
- D. Contractor shall protect materials from damage; no damaged material shall be incorporated into the segmental wall.
- E. Geosynthetic shall be protected from UV exposure and the protective covering on geosynthetic shall remain until immediately before installation and shall be stored at temperatures above -10 degrees F.

PART 2: MATERIALS

2.01 Segmental Retaining Wall Units

- A. SRW units shall be machine-formed, Portland cement concrete blocks specifically designed for retaining wall applications. SRW units currently approved for this project are:

VERSA-LOK Standard Retaining Wall Units or approved equal.
- B. Color of SRW units shall be **Saratoga with a mix of Natural Gray (every 8 to 10 units)**.
- C. Finish of SRW units shall be split-face.
- D. SRW unit faces shall be of straight geometry.
- E. SRW unit height shall be 6 inches.
- F. SRW units shall provide a minimum weight of 120 psf wall face area.
- G. SRW units shall be solid through the full depth of the unit.
- H. SRW units shall have a depth (front face to rear) to height ratio of 2:1, minimum.
- I. SRW units shall be capable of being erected with the horizontal gap between adjacent units not exceeding 1/8 inch.
- J. SRW units shall be interlocked with connecting pins that provide 3/4-inch setback from unit below (yielding a 7-degree cant from vertical).
- K. SRW units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the structure. Any cracks or chips observed during construction shall fall within the guidelines outlined in ASTM C 1372.
- L. Concrete SRW units shall conform to the requirements of ASTM C 1372 and have a minimum net average 28 days compressive strength of 3000 psi. Compressive

strength test specimens shall conform to the saw-cut coupon provisions of ASTM C 140.

M. SRW units' molded dimensions shall not differ more than $\pm 1/8$ inch from that specified, as measured in accordance with ASTM C 140. This tolerance does not apply to architectural surfaces, such as split faces.

2.02 Segmental Retaining Wall Unit Connection Pins

A. SRW units shall be interlocked with VERSA-TUFF® connection pins or approved equal. The pins shall consist of glass-reinforced nylon made for the expressed use with the SRW units supplied.

2.03 Geosynthetic Reinforcement

A. Geosynthetic reinforcement shall consist of high-tenacity PET geogrids, HDPE geogrids, or geotextiles manufactured for soil reinforcement applications. The type, strength and placement of the geosynthetic reinforcement shall be determined by procedures outlined in this specification and the "NCMA Design Manual for Segmental Retaining Walls" (3rd Edition, 2009), and materials shall be specified in the final wall plans.

Geosynthetic types currently approved for this project are:

VERSA-Grid® Geogrids or approved equal

2.04 Leveling Pad

A. Material for leveling pad shall consist of compacted sand, gravel, or combination thereof (USCS soil types GP, GW, SP and SW) and shall be a minimum of 6 inches in depth. Lean concrete with a strength of 200-300 psi and 3 inches thick maximum may also be used as a leveling pad material. The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lowermost SRW unit.

2.05 Drainage Aggregate

A. Drainage aggregate shall be angular, clean stone or granular fill meeting the following gradation as determined in accordance with ASTM D 422:

<u>Sieve Size</u>	<u>Percent Passing</u>
1 inch	100
3/4 inch	75-100
No. 4	0-60
No. 40	0-50
No. 200	0-5

2.06 Drainage Pipe

- A. The drainage collection pipe shall be a perforated or slotted PVC, or corrugated HDPE pipe. The drainage pipe may be wrapped with a geotextile to function as a filter.
- B. Drainage pipe shall be manufactured in accordance with ASTM F 405 or ASTM F 758.

2.07 Reinforced Backfill Soil

- A. The reinforced soil material shall be free of debris. Unless otherwise noted on the final retaining wall plans, the reinforced material shall consist of the inorganic USCS soil types GP, GW, SW, SP and SM, meeting the following gradation, as determined in accordance with ASTM D 422:

<u>Sieve Size</u>	<u>Percent Passing</u>
1 inch	100
No. 4	20-100
No. 40	0-60
No. 200	0-35

- B. The maximum particle size of poorly-graded gravels (GP) (no fines) should not exceed 3/4 inch unless the long-term design strength (LTDS) of the geosynthetic is reduced to account for additional installation damage from particles larger than this maximum.
- C. The plasticity of the fine fraction shall be less than 20.
- D. The pH of the backfill material shall be between 3 and 9 when tested in accordance with ASTM G 51.

2.08 Geotextile Filter

- A. Drainage geotextile shall consist of geosynthetic specifically manufactured for use as a preamble soil filter that retains soil while still allowing water to pass throughout the life of the structure. The type and placement of the geotextile filter material shall be shown on the final wall plans.

PART 3: DESIGN PARAMETERS

3.01 Design

- A. The design analysis for the final retaining wall plans shall consider the external stability against sliding and overturning, internal stability and facial stability of the reinforced soil mass, and shall be in accordance with acceptable engineering practice and these specifications. The internal and external stability analysis shall be performed in accordance with the “NCMA Design Manual for Segmental Retaining Walls,” (3rd Edition, 2009), using the recommended minimum factors of safety in this manual.

- B. While vertical spacing between geogrid layers may vary, it shall not exceed 2.0 feet maximum in the wall design.
- C. The geosynthetic placement in the wall design shall have 100% continuous coverage parallel to the wall face. Gapping between horizontally adjacent layers of geosynthetic (partial coverage) will not be allowed.

PART 4: CONSTRUCTION

4.01 Inspection

- A. The Owner or Owner's Engineer is responsible for verifying that the materials supplied by the Contractor meet all the requirements of the specification. This includes all submittals for materials and design, qualifications and proper installation of wall system.
- B. Contractor's field construction supervisor shall have demonstrated experience and be qualified to direct all work at the site.

4.02 Excavation

- A. Contractor shall excavate to the lines and grades shown on the project grading plans. Contractor shall take precautions to minimize over-excavation. Over-excavation shall be filled with compacted infill material, or as directed by the Owner or Owner's Engineer, at the Contractor's expense.
- B. Contractor shall verify location of existing structures and utilities prior to excavation. Contractor shall ensure all surrounding structures are protected from the effects of wall excavation. Excavation support, if required, is the responsibility of the Contractor.

4.03 Foundation Preparation

- A. Following the excavation, the foundation soil shall be examined by the Owner's Engineer to assure actual foundation soil strength meets or exceeds the assumed design bearing strength. Soils not meeting the required strength shall be removed and replaced with infill soils, as directed by the Owner or Owner's Engineer.
- B. Foundation soil shall be proof-rolled and compacted to 95% standard Proctor density and inspected by the Owner or Owner's Engineer prior to placement of leveling pad materials.

4.04 Leveling Pad Construction

- A. Leveling pad shall be placed as shown on the final retaining wall plans with a minimum thickness of 6 inches. The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lowermost SRW unit.
- B. Granular leveling pad material shall be compacted to provide a firm, level bearing surface on which to place the first course of units. Well-graded sand can be used

to smooth the top 1/4 inch to 1/2 inch of the leveling pad. Compaction will be with mechanical plate compactors to achieve 95% of maximum standard Proctor density (ASTM D 698).

4.05 SRW Unit Installation

- A. All SRW units shall be installed at the proper elevation and orientation as shown on the final wall plans and details. The SRW units shall be installed in general accordance with the manufacturer's recommendations. The specifications and drawings shall govern in any conflict between the two requirements.
- B. First course of SRW units shall be placed on the leveling pad. The units shall be leveled side-to-side, front-to-rear and with adjacent units, and aligned to ensure intimate contact with the leveling pad. The first course is the most important to ensure accurate and acceptable results. No gaps shall be left between the front of adjacent units. Alignment may be done by means of a string line or offset from base line to the back of the units.
- C. All excess debris shall be cleaned from top of units and the next course of units installed on top of the units below.
- D. Two VERSA-Tuff connection pins shall be inserted through the pin holes of each upper-course unit into receiving slots in lower-course units. Pins shall be fully seated in the pin slot below. Units shall be pushed forward to remove any looseness in the unit-to-unit connection.
- E. Prior to placement of next course, the level and alignment of the units shall be checked and corrected where needed.
- F. Layout of curves and corners shall be installed in accordance with the wall plan details or in general accordance with SRW manufacturer's installation guidelines. Walls meeting at corners shall be interlocked by overlapping successive courses.
- G. Procedures C. through F. shall be repeated until reaching top of wall units, just below the height of the cap units. Geosynthetic reinforcement, drainage materials, and reinforced backfill shall be placed in sequence with unit installation as described in Section 4.06, 4.07 and 4.08.

4.06 Geosynthetic Reinforcement Placement

- A. All geosynthetic reinforcement shall be installed at the proper elevation and orientation as shown on the final retaining wall plan profiles and details.
- B. At the elevations shown on the final plans, (after the units, drainage material and backfill have been placed to this elevation) the geosynthetic reinforcement shall be laid horizontally on compacted infill and on top of the concrete SRW units, to within 1 inch of the front face of the unit below. Embedment of the geosynthetic in the SRW units shall be consistent with SRW manufacturer's recommendations. Correct orientation of the geosynthetic reinforcement shall be verified by the Contractor to be in accordance with the geosynthetic manufacturer's

- recommendations. The highest-strength direction of the geosynthetic must be perpendicular to the wall face.
- C. Geosynthetic reinforcement layers shall be one continuous piece for their entire embedment length. Splicing of the geosynthetic in the design-strength direction (perpendicular to the wall face) shall not be permitted. Along the length of the wall, horizontally adjacent sections of geosynthetic reinforcement shall be butted in a manner to assure 100% coverage parallel to the wall face.
 - D. Tracked construction equipment shall not be operated directly on the geosynthetic reinforcement. A minimum of 6 inches of backfill is required prior to operation of tracked vehicles over the geosynthetic. Turning should be kept to a minimum. Rubber-tired equipment may pass over the geosynthetic reinforcement at slow speeds (less than 5 mph).
 - E. The geosynthetic reinforcement shall be free of wrinkles prior to placement of soil fill. The nominal tension shall be applied to the reinforcement and secured in place with staples, stakes or by hand tensioning until reinforcement is covered by 6 inches of fill.

4.07 Drainage Aggregate and Drainage Material Placement

- A. Drainage aggregate shall be installed to the line, grades and sections shown on the final retaining wall plans. Drainage aggregate shall be placed to the minimum thickness shown on the construction plans between and behind units (a minimum of 1 cubic foot for each exposed square foot of wall face unless otherwise noted on the final wall plans).
- B. Drainage collection pipes shall be installed to maintain gravity flow of water outside the reinforced-soil zone. The drainage collection pipe shall be installed at the locations shown on the final construction drawings. The drainage collection pipe shall daylight into a storm sewer or along a slope, at an elevation below the lowest point of the pipe within the aggregate drain. Drainage laterals shall be spaced at a maximum 50-foot spacing along the wall face.

4.08 Backfill Placement

- A. The reinforced backfill shall be placed as shown in the final wall plans in the maximum compacted lift thickness of 8 inches and shall be compacted to a minimum of 95% of standard Proctor density (ASTM D 698) at a moisture content within -1% point to +3% points of optimum. The backfill shall be placed and spread in such a manner as to eliminate wrinkles or movement of the geosynthetic reinforcement and the SRW units.
- B. Only hand-operated compaction equipment shall be allowed within 3 feet of the back of the wall units. Compaction within the 3 feet behind the wall units shall be achieved by at least three passes of a lightweight mechanical tamper, plate, or roller.

- C. At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing and reinforced backfill to direct water runoff away from the wall face.
- D. At completion of wall construction, backfill shall be placed level with final top of wall elevation. If final grading, paving, landscaping and/or storm drainage installation adjacent to the wall is not placed immediately after wall completion, temporary grading and drainage shall be provided to ensure water runoff is not directed at the wall nor allowed to collect or pond behind the wall until final construction adjacent to the wall is completed.

4.09 SRW Caps

- A. SRW caps shall be properly aligned and glued to underlying units with VERSA-LOK adhesive, a flexible, high-strength concrete adhesive, or approved equal. Rigid adhesive or mortar are not acceptable.
- B. Caps shall overhang the top course of units by 3/4 inch to 1 inch. Slight variation in overhang is allowed to correct alignment at the top of the wall.

4.10 Construction Adjacent to Completed Wall

- A. The Owner or Owner's Representative is responsible for ensuring that construction by others adjacent to the wall does not disturb the wall or place temporary construction loads on the wall that exceed design loads, including loads such as water pressure, temporary grades, or equipment loading. Heavy paving or grading equipment shall be kept a minimum of 3 feet behind the back of the wall face. Equipment with wheel loads in excess of 150 psf live load shall not be operated within 10 feet of the face of the retaining wall during construction adjacent to the wall. Care should be taken by the General Contractor to ensure water runoff is directed away from the wall structure until final grading and surface drainage collection systems are completed.

**ITEMS 6 & 7
LOAMING AND SEEDING**

- Summary
- References
- Quality Assurance
- Submittals
- Products/Materials
- Preparation
- Lawn Areas
- Maintenance
- Guarantee Period and Final Acceptance

Summary. Section includes:

- a. Restoration of all vegetated areas disturbed during construction including lawn areas

- b. Loam, starter fertilizer, lime, and lawn seed
- c. Mulch

References.

ASTM D5539 – Standard Specification for Seed Starter Mix.

Quality Assurance. Place seed only between the periods from April 15th to June 1st, and from August 15th to October 1st, unless otherwise approved by the Engineer.

Submittals. Submit the following for approval:

- a. Lawn seed mixture including percent by weight of each seed type, and manufacturer/supplier name.
- b. Suitable laboratory analysis of the soil to determine the quantity of fertilizer and lime to be applied.
- c. Lime and starter fertilizer application rates based on laboratory soil tests.

Products/Materials.

Loam

- a. Loam shall consist of fertile, friable, natural topsoil typical of the locality without admixture of subsoil, refuse or other foreign materials and shall be obtained from a well-drained arable site. It shall be such a mixture of sand, silt and clay particles as to exhibit sandy and clayey properties in and about equal proportions. It shall be reasonably free of stumps, roots, heavy or stiff clay, stones larger than 1-inch in diameter, lumps, coarse sand, noxious weeds, sticks, brush or other litter. Topsoil as delivered to the site or stockpiled shall have pH between 6.0 and 7.0 and shall contain not less than 5 percent or more than 8 percent organic matter as determined by loss of ignition of moisture-free samples dried at 100 degrees Celsius. The topsoil shall meet the following mechanical analysis:

		PERCENTAGE FINER
1-in	screen	100
opening		
No. 10 mesh		95 to 100
No. 270 mesh		35 to 75
0.002 mm*		5 to 25

* Clay size fraction determined by pipette or hydrometer analysis.

- b. Place a minimum of 4 inches of loam.

Starter Fertilizer

- a. Starter fertilizer shall bear the manufacturer’s name and guaranteed statement of analysis, and shall be applied in accordance with the manufacturer’s directions.
- b. Starter fertilizer shall be Scott’s Starter Fertilizer, or equal, with timed nitrogen release to prevent burning.

Lime

- a. Lime shall be an agricultural type ground limestone.

- b. Lime shall be pelletized type for prolonged time release to soil.

Lawn Seed

- a. Seed shall be of the previous year's crop.
- b. Required ranges:
 - 1. Purity > 90%
 - 2. Germination > 80%
 - 3. Crop < 0.5%
 - 4. Weed < 0.3%
 - 5. Noxious Weed – 0%
 - 6. Inert < 8%
- c. The standard seed mixture shall be applied at a minimum rate of 4 lbs./1,000 sf.
- d. Grass seed shall conform to the following mixture in proportion by weight and weed content and shall pass the minimum percentages of purity and germination as indicated for same.

LAWN AREA SEED MIX	% WEIGHT
“Rebel II” Tall Fescue	70%
“Baron” Kentucky Bluegrass	10%
“Palmer” Perennial Ryegrass	20%

- e. All seed shall comply with State and Federal seed laws.
- f. A sworn certificate indicating each variety of seed, weed content, germination of seed, net weight, date of shipment and manufacturer’s name shall accompany each seed shipment. Responsibility for satisfactory results rests entirely on the Contractor.

Mulch

- a. Shall be a specially processed 100 percent Virgin wood fiber mulch containing no growth or germination-inhibiting factors. Wood fiber mulch shall be Second Nature Regenerated wood fiber as by Central Fiber Corporation, Wellsville, KS or equal. It shall be manufactured in such a manner that after addition and agitation in slurry tanks with water, the fibers in the material become uniformly suspended to form a homogenous slurry. When sprayed on the ground, the material shall allow absorption and percolation of moisture. Each package of the wood fiber shall be marked by the manufacturer to show the air dry weight content and not contain in excess of 10 percent moisture.

Preparation. The ground surface shall be fine graded and raked to prepare the surface of the loam for lime, fertilizer and seed.

Perform a laboratory soil test on the proposed loam before placing any lime, fertilizer, or seed. This work shall be in accordance with ASTM D5539.

Lawn Areas. Apply fertilizer and lime to the surface of the ground in accordance with the manufacturers’ instructions, and based on the results of the certified soils test.

Place the seed using a drop or rotary spreader at the rate recommended by the seed manufacturer for the intended use of the lawn or grass area being restored.

After spreading the seed, lightly rake the surface to work the seed in. The surface shall then be rolled.

Maintenance. Maintain loamed and seeded areas by mulching, covering, netting, watering, cutting, and fencing until an acceptable stand of vegetation is approved by the Engineer.

The dressed and seeded areas shall be sprinkled with water as necessary from time to time. Signs and barricades should be placed to protect the seeded areas. After the grass has started to grow, all areas and parts of areas that fail to show a uniform stand of grass shall be seeded repeatedly until all areas are covered with a satisfactory growth of grass.

Guarantee Period and Final Acceptance. At the end of the guaranteed period, inspection will be made by the Engineer upon written request submitted at least 10 days before the anticipated date. Seeded areas not demonstrating satisfactory stands as outlined above, as determined by the Engineer, shall be renovated, reseeded and maintained meeting all requirements as specified herein.

After all necessary corrective work has been completed, the Engineer shall certify in writing the final acceptance of the seeded areas.

ITEM 8 REMOVE AND REPLACE EXISTING CONCRETE STAIRS

General. The Contractor shall excavate and dispose of the existing concrete stairs as indicated on the drawings and as directed by the Engineer. The existing stairs shall be broken up using pneumatic hammers or other approved means, and removed from the site and disposed of in a suitable manner. Care will be taken not to damage or destroy any existing utilities as outlined in the section on EARTH EXCAVATION, BACKFILL, FILL, and GRADING, Protection of Existing Structures.

The Contractor shall construct a new set of concrete stairs in-kind in accordance with the contract drawings and as directed by the Engineer. Concrete shall be in accordance with the technical specifications for CONCRETE WORK.

Metal Railings. The existing metal railings shall be refurbished; sanded and painted black; and shall be re-attached to the newly constructed side walls of the stairs.

CONCRETE WORK

General
Cement
Admixtures
Water
Fine Aggregate
Coarse Aggregate
Samples of Aggregate
Classes of Concrete
Quality and Proportioning of Concrete
Determining Proportions
Consistency of Concrete

Measuring Materials
Mixing Concrete
Ready-Mixed Concrete
Forms
Embedded Work in Concrete
Placing Concrete
Curing and Protection
Finishing Concrete
Trimming and Repairs
Expansion Joints
Construction Joints
Weep Holes

General. The Contractor shall furnish all necessary materials and build all concrete masonry required under this contract and not otherwise provided for, as indicated on the drawings and as herein specified.

All concrete shall be site-mixed or ready-mixed as produced by a plant acceptable to the Engineer.

Cement. Cement shall be a single brand of approved, American-made Portland Cement conforming to the ASTM Standard Specifications for Portland Cement, Designation C150, for Type II cement, or, with written permission of the Engineer Type III (high-early strength) cement.

When used in the work, cement shall be free from lumps and partially or wholly set cement.

No cement shall be used without prior approval of the Engineer.

If required, the Contractor shall furnish sworn certificate of mill tests of cement, in triplicate, at least seven days before the cement will be used. The Owner reserves the right to make such independent tests as he may deem necessary at any time.

When high early strength concrete is required, it shall be obtained by using Type III or by adding 15% additional Type I or Type II.

Admixtures. The use of admixtures shall meet MHD Standard Specifications as specified in Section M4.02.05 of the "Standard Specifications for Highways and Bridges," Commonwealth of Massachusetts, Department of Public Works, 1988 Ed. as amended and corrected.

Water. For mixing concrete, the Contractor shall use clean water from an approved source.

Fine Aggregate. Fine aggregate shall be clean, sound, sharp, screened, and well-graded sand conforming to the ASTM Standard Specifications for Concrete Aggregates, Designation C33, and the additional requirement that the aggregate shall have not less than 15 percent more than 30 percent, by weight, passing No. 50 sieve.

No fine aggregate shall be used if it contains more than two percent of silt or which shows a color darker than Plate 2 when tested according to the ASTM Standard Method of Test for Organic Impurities in Sands for Concrete, Designation C-40.

The weight average loss when fine aggregate is subjected to five cycles of the soundness test using magnesium sulfate shall not exceed 10 percent.

Coarse Aggregate. Coarse aggregate shall be washed, hard, tough and durable screened gravel or crushed stone conforming to the ASTM Standard Specifications for Concrete Aggregates, Designation C33 and the additional requirements specified herein. Coarse aggregate shall have not more than five percent by weight of deleterious substances and soft fragments. Unless otherwise approved, aggregate shall be well graded and shall conform to the grading requirements for coarse aggregates for nominal size 1 inch to No. 4.

No coarse aggregate shall be used if it contains more than one percent of silt or which shows a color darker than Plate 1 when tested as above specified for fine aggregate.

The weighted average loss when coarse aggregate is subjected to five cycles of the soundness test using magnesium sulfate shall not exceed 14 percent.

Samples of Aggregate. As required, the Contractor shall submit clearly labeled samples of fine and coarse aggregates to the Engineer. No aggregates shall be delivered and used shall be equal to the approved samples in all respects.

Classes of Concrete. 4000 psi concrete shall be used for all concrete not otherwise specified or noted on the drawings.

Quality and Proportioning of Concrete. Materials for concrete shall be proportioned to produce a thoroughly workable, plastic mixture resulting in a dense watertight concrete. The concrete shall meet MHD Standard Specifications as specified in Section M4.02.00 of the "Standard Specifications for Highways and Bridges," Commonwealth of Massachusetts, Department of Public Works, 1988 Ed. as amended and corrected.

The use of an approved additive other than air-entrained additives shall not affect a change in the maximum water-cement ratio or the minimum cement content. The minimum cement content can be changed only with the prior written approval of the Engineer.

Determining Proportions. The proportions of cement, fine and coarse aggregate and water to be used to obtain the specified concrete shall be determined by trial at the site. Proportions may be varied as approved, and shall be varied as required, provided that, in no case, shall the resulting mix violate the limitations set forth above under the heading "Quality and Proportions of Concrete."

Consistence of Concrete. Concrete shall be of plastic consistency such that it can be work readily into all parts of the forms and around embedded work without segregation of constituent materials or collection of free water on the surface.

Measuring Materials. Cement, fine aggregate, coarse aggregate and water for concrete shall be measure separately and with accuracy. Particular care shall be taken that fractional bags of cement are correctly measured. Aggregates shall be measured by weight or loose in approved boxes, with allowance as directed for bulking of sand. Water shall be measured by volume.

Mixing Concrete. Concrete shall be mixed in an approved batch mixer of suitable capacity except for small quantities, which, by permission, are hand mixed. The volume of the mixed batch shall not exceed the manufacturer's rated capacity of the mixer. Adequate facilities shall be provided for accurate measurement of water and the control of materials entering the drum. The mixer shall revolve at a uniform peripheral speed of above 200 rpm.

The minimum mixing time for each batch (from the time when all solid materials and water are first in the drum) shall be 1-½ minutes for mixers of 1 c.y. capacity or less; for mixers of larger capacity, the mixing time shall be increased 30 seconds for each additional half cubic yard or fraction thereof. The entire batch shall be discharged before the mixer is recharged.

If the concrete is mixed by hand, it shall be done on a suitable surface. The cement and aggregates shall be mixed dry until an even and uniform color has been attained throughout. The proper quantity of water shall then be added and the whole mass turned with square-edged shovels until it has become intimately mixed.

Ready-Mixed Concrete. The use of ready-mixed concrete will be permitted provided that the Engineer shall have the right to inspect the plant of the manufacturer and the proportioning and mixing of the concrete and shall be given every facility therefore, and that the materials and methods of proportioning, mixing and delivering are satisfactory and generally in accordance with the above specifications. The manufacturer shall furnish, from an Independent testing laboratory and through the Contractor, appropriate certificates of tests, materials, proportions mixing and strengths. Such certificates shall have an effective date not more than six months prior to the time when the concrete will be used and shall be furnished to the Engineer at least seven days before the time of use. No ready-mixed concrete shall be ordered before the Engineer has given his approval thereof.

The quantity of concrete to be mixed or delivered in any one batch shall not exceed the rated capacity of the mixer or agitator as stated on the nameplate for the type of mixing in use.

At the time of delivery of each load of concrete, the Engineer shall be given a slip stating the actual quantity of each ingredient in that load.

Attention is directed to the importance of dispatching trucks from the batching plant so that they shall arrive at the site of the work just before the concrete is required, thus avoiding excessive mixing of concrete while waiting or delays in placing successive layers of concrete in the forms. Concrete shall be discharged into forms within 1 ½ hours after water was first added to the mix, and shall be mixed at least five minutes after all water has been added.

Forms. Forms shall be constructed of sound lumber, plywood or metal and shall conform accurately to the dimensions, shapes and elevations indicated on the drawings. They shall be mortar-tight, rigid and unyielding during the placing and compacting of the concrete. The Contractor shall be entirely responsible for the adequacy. Forms for manhole inverts shall be smooth, carefully built to true size and shape and accurately set.

Suitable molding or bevels shall be placed so as to produce a ¾ inch chamfer on all exposed projecting corners.

Form surfaces to be in contact with concrete shall be oiled, and if reused, shall first be cleaned, repaired and re-oiled.

Forms shall not be removed until the product of the elapsed number of days after placement and the average daily air temperature at the surface of the concrete equal 100 for walls and vertical surfaces and 500 for slabs.

Embedded Work in Concrete. All embedded work shall be accurately built into or encased in the masonry by the Contractor as directed and all necessary precautions shall be taken to prevent such work from being displaced or deformed.

Placing Concrete. No concrete shall be placed on frozen subgrade or in water. Forms and excavations shall be free from water and all dirt, debris and other foreign matter when concrete is placed.

If chutes are used for conveying concrete, they shall be of metal or shall be metal lined.

Concrete shall be deposited in suitable layers, one layer quickly following another until the placement has been completed. While being deposited, the concrete shall be thoroughly compacted by rodding and spading or by mechanical vibration. If mechanical vibration is used, the concrete consistency as measured by slump shall not exceed 3 inches. Vibration shall be done by experienced operators under close supervision and the duration shall be held at the minimum necessary to produce thorough compaction without segregation. Hand spading shall always be used adjacent to forms to produce a smooth, dense surface. The concrete shall be thoroughly and carefully rodded about embedded materials.

Curing and Protection. Water shall not be permitted to rise on concrete within 24 hours after it is placed, nor shall running water be allowed to flow over complete concrete within four days after it has been placed.

For at least seven days after having been placed, all concrete shall be so protected that the temperature at the surface will not fall below 50 degrees F. The methods of protecting the concrete shall be as specified and shall be subject to approval.

Finishing Concrete. Manhole tables and all surfaces shaped without forms and over which liquids will flow shall be smoothly finished by means of a steel trowel without the use of additional cement or sprinkling with water. Troweling shall not be started until all water has disappeared from the surface. Over troweling shall be avoided.

Trimming and Repairs. It is expected that forms, concrete and workmanship shall be such that the quantity of trimming and repair work is kept to a minimum.

Defective concrete shall be cut normal to the surface until sound concrete is reached, but not less than one inch deep; the remaining concrete shall be thoroughly roughened and cleaned. Concrete around the cavity or the form-tie recess shall be thoroughly wetted and promptly painted with a 1/16-inch brush coat of neat cement mixed to the consistency of thick lead paint. The hole shall then be filled with mortar mixed in the proportions of one part cement and 1 1/2 parts sand, both being from the same sources as in the apparent concrete.

Expansion Joints. Performed expansion joints shall be 1/2" bituminous impregnated expansion joint filler, type conforming to ASTM D994, or approved equal place where shown on the plans. The joint filler material shall be placed according to the manufacturer's recommendations. The

joint filler material shall be placed such that it's top surface is one inch below the top surface of the new concrete.

Joint sealant shall be a multi-component polyurethane type and shall comply with ASTM C920, Class 25. Joint sealants shall be installed according to the manufacturer's recommendations. The Contractor shall supply smooth #35 bar dowels at all expansion joints and install the dowels, with expansion caps, 18" on center. Dowels shall be a minimum of 14" long. Depth of the dowels not shown of the plans or specified shall be as directed by the Engineer.

Expansion joints for retaining walls shall be placed 90' on center maximum, intermediate construction joints shall be placed 30' on center maximum.

Construction Joints. All construction joints in retaining walls shall be provided with a keyway and a waterstop. Keyway shall be as indicated on the plans or as specified by the Engineer.

The waterstop material shall be a minimum of 5" wide and of type, size and configuration approved by the Engineer. All waterstop material shall be installed in accordance with manufacturer's instructions and special care shall be taken in jointing the material. Waterstop shall be a diaphragm type of multirib design thermo-plastic material unless otherwise specified.

Concrete in structures shall be placed in such a manner that all construction joints shall be exactly horizontal or vertical, as the case may be, and that they shall be straight and as inconspicuous as possible.

When construction joints are definitely shown on the plans, all concrete between consecutive joints shall be placed in a continuous operation.

In order to allow for shrinkage, concrete shall not be placed against the second side of the construction joints for at least 12 hours after that on the first side has been placed.

Weep Holes. Weep holes shall be provided through all structures as indicated on the plans and as directed. Ends of weep holes that are to be covered by filling material shall be protected by 1/4" mesh galvanized wire screen 23 gauge and not less than one (1) cubic yard of crushed stone.

Pipe for weep holes shall be 4" PVC pipe SDR 35 or approved equal, and shall have a minimum pitch of 1/8" per foot.

APPENDIX A
MASSACHUSETTS WAGE RATES



CHARLES D. BAKER
Governor

KARYN E. POLITO
Lt. Governor

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

ROSALIN ACOSTA
Secretary
MICHAEL FLANAGAN
Director

Awarding Authority: City of Greenfield
Contract Number: DPW 21-04 **City/Town:** GREENFIELD
Description of Work: Work consists of replacing the existing timber retaining wall with a Versa-Lok retaining wall system or approved equal (app. 65 SY) and the replacement or repair of the existing concrete stairs.
Job Location: Fiske Avenue

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 Department of Labor Standards, Division of Apprentice Standards (DLS/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. **Any apprentice not registered with DLS/DAS regardless of whether or not they are registered with any other federal, state, local, or private agency 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>	08/01/2020	\$35.15	\$12.91	\$13.72	\$0.00	\$61.78
	12/01/2020	\$35.15	\$12.91	\$14.82	\$0.00	\$62.88
	06/01/2021	\$35.95	\$12.91	\$14.82	\$0.00	\$63.68
	08/01/2021	\$35.95	\$13.41	\$14.82	\$0.00	\$64.18
	12/01/2021	\$35.95	\$13.41	\$16.01	\$0.00	\$65.37
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$35.22	\$12.91	\$13.72	\$0.00	\$61.85
	12/01/2020	\$35.22	\$12.91	\$14.82	\$0.00	\$62.95
	06/01/2021	\$36.02	\$12.91	\$14.82	\$0.00	\$63.75
	08/01/2021	\$36.02	\$13.41	\$14.82	\$0.00	\$64.25
	12/01/2021	\$36.02	\$13.41	\$16.01	\$0.00	\$65.44
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$35.34	\$12.91	\$13.72	\$0.00	\$61.97
	12/01/2020	\$35.34	\$12.91	\$14.82	\$0.00	\$63.07
	06/01/2021	\$36.14	\$12.91	\$14.82	\$0.00	\$63.87
	08/01/2021	\$36.14	\$13.41	\$14.82	\$0.00	\$64.37
	12/01/2021	\$36.14	\$13.41	\$16.01	\$0.00	\$65.56
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 3)</i>	08/01/2019	\$102.78	\$9.90	\$21.15	\$0.00	\$133.83
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/02/2019	\$32.25	\$8.10	\$14.78	\$0.00	\$55.13
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	06/01/2020	\$32.25	\$8.60	\$13.03	\$0.00	\$53.88
	12/01/2020	\$33.06	\$8.60	\$13.03	\$0.00	\$54.69
	06/01/2021	\$33.90	\$8.60	\$13.03	\$0.00	\$55.53
	12/01/2021	\$34.73	\$8.60	\$13.03	\$0.00	\$56.36
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS WORKER (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (SPRINGFIELD)</i>	06/01/2020	\$34.20	\$12.50	\$8.35	\$0.00	\$55.05
	12/01/2020	\$35.10	\$12.50	\$8.35	\$0.00	\$55.95
ASPHALT RAKER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/02/2019	\$31.75	\$8.10	\$14.78	\$0.00	\$54.63
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	06/01/2020	\$31.75	\$8.60	\$13.03	\$0.00	\$53.38
	12/01/2020	\$32.56	\$8.60	\$13.03	\$0.00	\$54.19
	06/01/2021	\$33.40	\$8.60	\$13.03	\$0.00	\$55.03
	12/01/2021	\$34.23	\$8.60	\$13.03	\$0.00	\$55.86
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
AUTOMATIC GRADER-EXCAVATOR (RECLAIMER) <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$35.40	\$11.94	\$14.35	\$0.00	\$61.69
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER OPERATOR <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$35.40	\$11.94	\$14.35	\$0.00	\$61.69
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/02/2019	\$31.75	\$8.10	\$14.78	\$0.00	\$54.63
For apprentice rates see "Apprentice- LABORER"						
BATCH/CEMENT PLANT - ON SITE <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$34.87	\$11.94	\$14.35	\$0.00	\$61.16
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/02/2019	\$32.25	\$8.10	\$14.78	\$0.00	\$55.13
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	06/01/2020	\$32.25	\$8.60	\$13.03	\$0.00	\$53.88
	12/01/2020	\$33.06	\$8.60	\$13.03	\$0.00	\$54.69
	06/01/2021	\$33.90	\$8.60	\$13.03	\$0.00	\$55.53
	12/01/2021	\$34.73	\$8.60	\$13.03	\$0.00	\$56.36
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2020	\$46.10	\$7.07	\$17.98	\$0.00	\$71.15

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$29.97	\$7.07	\$11.69	\$0.00	\$48.73
2	65	\$29.97	\$7.07	\$11.69	\$0.00	\$48.73
3	70	\$32.27	\$7.07	\$12.59	\$0.00	\$51.93
4	75	\$34.58	\$7.07	\$13.49	\$0.00	\$55.14
5	80	\$36.88	\$7.07	\$14.38	\$0.00	\$58.33
6	85	\$39.19	\$7.07	\$15.29	\$0.00	\$61.55
7	90	\$41.49	\$7.07	\$16.18	\$0.00	\$64.74
8	95	\$43.80	\$7.07	\$17.09	\$0.00	\$67.96

Notes:

Apprentice to Journeyworker Ratio:1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (SPRINGFIELD/PITTSFIELD)</i>	08/01/2020	\$44.16	\$10.75	\$20.11	\$0.00	\$75.02
	02/01/2021	\$44.71	\$10.75	\$20.11	\$0.00	\$75.57
	08/01/2021	\$46.11	\$10.75	\$20.27	\$0.00	\$77.13
	02/01/2022	\$46.64	\$10.75	\$20.27	\$0.00	\$77.66

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Springfield/Pittsfield

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.08	\$10.75	\$20.11	\$0.00	\$52.94
2	60	\$26.50	\$10.75	\$20.11	\$0.00	\$57.36
3	70	\$30.91	\$10.75	\$20.11	\$0.00	\$61.77
4	80	\$35.33	\$10.75	\$20.11	\$0.00	\$66.19
5	90	\$39.74	\$10.75	\$20.11	\$0.00	\$70.60

Effective Date - 02/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.36	\$10.75	\$20.11	\$0.00	\$53.22
2	60	\$26.83	\$10.75	\$20.11	\$0.00	\$57.69
3	70	\$31.30	\$10.75	\$20.11	\$0.00	\$62.16
4	80	\$35.77	\$10.75	\$20.11	\$0.00	\$66.63
5	90	\$40.24	\$10.75	\$20.11	\$0.00	\$71.10

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/POWER SHOVEL/TREE SHREDDER /CLAM SHELL OPERATING	12/01/2019	\$35.40	\$11.94	\$14.35	\$0.00	\$61.69
<i>ENGINEERS LOCAL 98</i>						
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CAISSON & UNDERPINNING BOTTOM MAN LABORERS - FOUNDATION AND MARINE	06/01/2020	\$40.30	\$8.60	\$17.24	\$0.00	\$66.14
	12/01/2020	\$41.28	\$8.60	\$17.24	\$0.00	\$67.12
	06/01/2021	\$42.30	\$8.60	\$17.24	\$0.00	\$68.14
	12/01/2021	\$43.31	\$8.60	\$17.24	\$0.00	\$69.15
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING LABORER LABORERS - FOUNDATION AND MARINE	06/01/2020	\$39.15	\$8.60	\$17.24	\$0.00	\$64.99
	12/01/2020	\$40.13	\$8.60	\$17.24	\$0.00	\$65.97
	06/01/2021	\$41.15	\$8.60	\$17.24	\$0.00	\$66.99
	12/01/2021	\$42.16	\$8.60	\$17.24	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN LABORERS - FOUNDATION AND MARINE	06/01/2020	\$39.15	\$8.60	\$17.24	\$0.00	\$64.99
	12/01/2020	\$40.13	\$8.60	\$17.24	\$0.00	\$65.97
	06/01/2021	\$41.15	\$8.60	\$17.24	\$0.00	\$66.99
	12/01/2021	\$42.16	\$8.60	\$17.24	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR LABORERS - ZONE 3 (BUILDING & SITE)	12/02/2019	\$31.75	\$8.10	\$14.78	\$0.00	\$54.63
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARPENTER	03/01/2020	\$38.04	\$7.84	\$16.87	\$0.00	\$62.75
CARPENTERS LOCAL 336 - HAMPDEN HAMPSHIRE FRANKLIN	09/01/2020	\$38.54	\$7.84	\$16.87	\$0.00	\$63.25
	03/01/2021	\$39.04	\$7.84	\$16.87	\$0.00	\$63.75
	09/01/2021	\$39.54	\$7.84	\$16.87	\$0.00	\$64.25
	03/01/2022	\$40.04	\$7.84	\$16.87	\$0.00	\$64.75
	09/01/2022	\$40.54	\$7.84	\$16.87	\$0.00	\$65.25
	03/01/2023	\$41.04	\$7.84	\$16.87	\$0.00	\$65.75

Apprentice - CARPENTER - Local 336 Hampden Hampshire Franklin

Effective Date - 03/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.02	\$7.84	\$1.32	\$0.00	\$28.18
2	60	\$22.82	\$7.84	\$1.32	\$0.00	\$31.98
3	70	\$26.63	\$7.84	\$12.91	\$0.00	\$47.38
4	75	\$28.53	\$7.84	\$12.91	\$0.00	\$49.28
5	80	\$30.43	\$7.84	\$14.23	\$0.00	\$52.50
6	80	\$30.43	\$7.84	\$14.23	\$0.00	\$52.50
7	90	\$34.24	\$7.84	\$15.55	\$0.00	\$57.63
8	90	\$34.24	\$7.84	\$15.55	\$0.00	\$57.63

Effective Date - 09/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.27	\$7.84	\$1.32	\$0.00	\$28.43
2	60	\$23.12	\$7.84	\$1.32	\$0.00	\$32.28
3	70	\$26.98	\$7.84	\$12.91	\$0.00	\$47.73
4	75	\$28.91	\$7.84	\$12.91	\$0.00	\$49.66
5	80	\$30.83	\$7.84	\$14.23	\$0.00	\$52.90
6	80	\$30.83	\$7.84	\$14.23	\$0.00	\$52.90
7	90	\$34.69	\$7.84	\$15.55	\$0.00	\$58.08
8	90	\$34.69	\$7.84	\$15.55	\$0.00	\$58.08

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$26.28/ 3&4 \$31.36/ 5&6 \$48.70/ 7&8 \$53.82

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME	04/01/2020	\$22.66	\$7.21	\$4.80	\$0.00	\$34.67
CARPENTERS-ZONE 3 (Wood Frame)	04/01/2021	\$23.16	\$7.21	\$4.80	\$0.00	\$35.17
	04/01/2022	\$23.66	\$7.21	\$4.80	\$0.00	\$35.67
	04/01/2023	\$24.16	\$7.21	\$4.80	\$0.00	\$36.17

All Aspects of New Wood Frame Work

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - CARPENTER (Wood Frame) - Zone 3

Effective Date - 04/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$13.60	\$7.21	\$0.00	\$0.00	\$20.81
2	60	\$13.60	\$7.21	\$0.00	\$0.00	\$20.81
3	65	\$14.73	\$7.21	\$0.00	\$0.00	\$21.94
4	70	\$15.86	\$7.21	\$0.00	\$0.00	\$23.07
5	75	\$17.00	\$7.21	\$3.80	\$0.00	\$28.01
6	80	\$18.13	\$7.21	\$3.80	\$0.00	\$29.14
7	85	\$19.26	\$7.21	\$3.80	\$0.00	\$30.27
8	90	\$20.39	\$7.21	\$3.80	\$0.00	\$31.40

Effective Date - 04/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$13.90	\$7.21	\$0.00	\$0.00	\$21.11
2	60	\$13.90	\$7.21	\$0.00	\$0.00	\$21.11
3	65	\$15.05	\$7.21	\$0.00	\$0.00	\$22.26
4	70	\$16.21	\$7.21	\$0.00	\$0.00	\$23.42
5	75	\$17.37	\$7.21	\$3.80	\$0.00	\$28.38
6	80	\$18.53	\$7.21	\$3.80	\$0.00	\$29.54
7	85	\$19.69	\$7.21	\$3.80	\$0.00	\$30.70
8	90	\$20.84	\$7.21	\$3.80	\$0.00	\$31.85

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$17.41/ 3&4 \$19.67/ 5&6 \$26.87/ 7&8 \$29.14

Apprentice to Journeyworker Ratio:1:5

CEMENT MASONRY/PLASTERING BRICKLAYERS LOCAL 3 (SPRINGFIELD/PITTSFIELD)	01/01/2020	\$41.94	\$12.70	\$17.64	\$0.62	\$72.90
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Apprentice - CEMENT MASONRY/PLASTERING - Springfield/Pittsfield

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.97	\$12.70	\$15.41	\$0.00	\$49.08
2	60	\$25.16	\$12.70	\$17.64	\$0.62	\$56.12
3	65	\$27.26	\$12.70	\$17.64	\$0.62	\$58.22
4	70	\$29.36	\$12.70	\$17.64	\$0.62	\$60.32
5	75	\$31.46	\$12.70	\$17.64	\$0.62	\$62.42
6	80	\$33.55	\$12.70	\$17.64	\$0.62	\$64.51
7	90	\$37.75	\$12.70	\$17.64	\$0.62	\$68.71

Notes:

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

Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CHAIN SAW OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/02/2019	\$31.75	\$8.10	\$14.78	\$0.00	\$54.63
For apprentice rates see "Apprentice- LABORER"						
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$34.87	\$11.94	\$14.35	\$0.00	\$61.16
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CRANE OPERATOR <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$38.90	\$11.94	\$14.35	\$0.00	\$65.19
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 3</i>	07/01/2020	\$51.51	\$8.25	\$22.40	\$0.00	\$82.16
	01/01/2021	\$52.06	\$8.25	\$22.75	\$0.00	\$83.06

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.76	\$8.25	\$0.00	\$0.00	\$34.01
2	55	\$28.33	\$8.25	\$6.05	\$0.00	\$42.63
3	60	\$30.91	\$8.25	\$6.60	\$0.00	\$45.76
4	65	\$33.48	\$8.25	\$7.15	\$0.00	\$48.88
5	70	\$36.06	\$8.25	\$19.10	\$0.00	\$63.41
6	75	\$38.63	\$8.25	\$19.65	\$0.00	\$66.53
7	80	\$41.21	\$8.25	\$20.20	\$0.00	\$69.66
8	90	\$46.36	\$8.25	\$21.30	\$0.00	\$75.91

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.03	\$8.25	\$0.00	\$0.00	\$34.28
2	55	\$28.63	\$8.25	\$6.16	\$0.00	\$43.04
3	60	\$31.24	\$8.25	\$6.72	\$0.00	\$46.21
4	65	\$33.84	\$8.25	\$7.28	\$0.00	\$49.37
5	70	\$36.44	\$8.25	\$19.39	\$0.00	\$64.08
6	75	\$39.05	\$8.25	\$19.95	\$0.00	\$67.25
7	80	\$41.65	\$8.25	\$20.51	\$0.00	\$70.41
8	90	\$46.85	\$8.25	\$21.63	\$0.00	\$76.73

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2019	\$39.30	\$8.10	\$16.60	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2019	\$40.30	\$8.10	\$16.60	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2019	\$40.05	\$8.10	\$16.60	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2019	\$40.30	\$8.10	\$16.60	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2019	\$40.05	\$8.10	\$16.60	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2019	\$39.30	\$8.10	\$16.60	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 3)</i>	08/01/2019	\$68.52	\$9.90	\$21.15	\$0.00	\$99.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 3)</i>	08/01/2019	\$48.94	\$9.90	\$21.15	\$0.00	\$79.99
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 3)</i>	08/01/2019	\$73.41	\$9.90	\$21.15	\$0.00	\$104.46
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 3)</i>	08/01/2019	\$102.78	\$9.90	\$21.15	\$0.00	\$133.83
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>DRAWBRIDGE - SEIU LOCAL 888</i>	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53
ELECTRICIAN (Including Core Drilling) <i>ELECTRICIANS LOCAL 7</i>	06/28/2020	\$44.01	\$11.25	\$12.82	\$0.00	\$68.08
	01/03/2021	\$44.61	\$11.50	\$12.99	\$0.00	\$69.10
	06/27/2021	\$45.21	\$11.75	\$13.26	\$0.00	\$70.22
	01/02/2022	\$45.81	\$12.00	\$13.42	\$0.00	\$71.23
	07/03/2022	\$46.41	\$12.25	\$13.69	\$0.00	\$72.35
	01/01/2023	\$47.01	\$12.50	\$13.96	\$0.00	\$73.47

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - ELECTRICIAN - Local 7

Effective Date - 06/28/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.60	\$6.15	\$0.53	\$0.00	\$24.28
2	45	\$19.80	\$6.15	\$0.59	\$0.00	\$26.54
3	50	\$22.01	\$11.25	\$6.96	\$0.00	\$40.22
4	55	\$24.21	\$11.25	\$7.03	\$0.00	\$42.49
5	65	\$28.61	\$11.25	\$8.72	\$0.00	\$48.58
6	70	\$30.81	\$11.25	\$9.82	\$0.00	\$51.88

Effective Date - 01/03/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.84	\$6.90	\$0.54	\$0.00	\$25.28
2	45	\$20.07	\$6.90	\$0.60	\$0.00	\$27.57
3	50	\$22.31	\$11.50	\$7.02	\$0.00	\$40.83
4	55	\$24.54	\$11.50	\$7.09	\$0.00	\$43.13
5	65	\$29.00	\$11.50	\$8.81	\$0.00	\$49.31
6	70	\$31.23	\$11.50	\$9.94	\$0.00	\$52.67

Notes:

Steps 1-2 are 1000 hrs; Steps 3-6 are 1500 hrs.

Apprentice to Journeyworker Ratio:2:3****

ELEVATOR CONSTRUCTOR	01/01/2020	\$54.85	\$15.73	\$18.41	\$0.00	\$88.99
ELEVATOR CONSTRUCTORS LOCAL 41	01/01/2021	\$56.69	\$15.88	\$19.31	\$0.00	\$91.88
	01/01/2022	\$58.62	\$16.03	\$20.21	\$0.00	\$94.86

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - ELEVATOR CONSTRUCTOR - Local 41

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.43	\$15.73	\$0.00	\$0.00	\$43.16
2	55	\$30.17	\$15.73	\$18.41	\$0.00	\$64.31
3	65	\$35.65	\$15.73	\$18.41	\$0.00	\$69.79
4	70	\$38.40	\$15.73	\$18.41	\$0.00	\$72.54
5	80	\$43.88	\$15.73	\$18.41	\$0.00	\$78.02

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.35	\$15.88	\$0.00	\$0.00	\$44.23
2	55	\$31.18	\$15.88	\$19.31	\$0.00	\$66.37
3	65	\$36.85	\$15.88	\$19.31	\$0.00	\$72.04
4	70	\$39.68	\$15.88	\$19.31	\$0.00	\$74.87
5	80	\$45.35	\$15.88	\$19.31	\$0.00	\$80.54

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 41</i>	01/01/2020	\$38.40	\$15.73	\$18.41	\$0.00	\$72.54
	01/01/2021	\$39.68	\$15.88	\$19.31	\$0.00	\$74.87
	01/01/2022	\$41.03	\$16.03	\$20.21	\$0.00	\$77.27

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	06/01/2020	\$31.75	\$8.60	\$13.03	\$0.00	\$53.38
	12/01/2020	\$32.56	\$8.60	\$13.03	\$0.00	\$54.19
	06/01/2021	\$33.40	\$8.60	\$13.03	\$0.00	\$55.03
	12/01/2021	\$34.23	\$8.60	\$13.03	\$0.00	\$55.86

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

FIELD ENG.INST/ROD-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 98</i>	06/01/1999	\$18.84	\$4.80	\$4.10	\$0.00	\$27.74
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FIELD ENG.PARTY CHIEF:BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 98</i>	06/01/1999	\$21.33	\$4.80	\$4.10	\$0.00	\$30.23
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FIELD ENG.SURVEY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 98</i>	06/01/1999	\$22.33	\$4.80	\$4.10	\$0.00	\$31.23
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FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 7</i>	06/28/2020	\$44.01	\$11.25	\$12.82	\$0.00	\$68.08
	01/03/2021	\$44.61	\$11.50	\$12.99	\$0.00	\$69.10
	06/27/2021	\$45.21	\$11.75	\$13.26	\$0.00	\$70.22
	01/02/2022	\$45.81	\$12.00	\$13.42	\$0.00	\$71.23
	07/03/2022	\$46.41	\$12.25	\$13.69	\$0.00	\$72.35
	01/01/2023	\$47.01	\$12.50	\$13.96	\$0.00	\$73.47

For apprentice rates see "Apprentice- ELECTRICIAN"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS</i>	06/28/2020	\$44.01	\$11.25	\$12.82	\$0.00	\$68.08
<i>LOCAL 7</i>	01/03/2021	\$44.61	\$11.50	\$12.99	\$0.00	\$69.10
	06/27/2021	\$45.21	\$11.75	\$13.26	\$0.00	\$70.22
	01/02/2022	\$45.81	\$12.00	\$13.42	\$0.00	\$71.23
	07/03/2022	\$46.41	\$12.25	\$13.69	\$0.00	\$72.35
	01/01/2023	\$47.01	\$12.50	\$13.96	\$0.00	\$73.47

For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"

FIREMAN <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$34.87	\$11.94	\$14.35	\$0.00	\$61.16
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Apprentice - OPERATING ENGINEERS - Local 98 Class 3

Effective Date - 12/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$20.92	\$11.94	\$14.35	\$0.00	\$47.21
2	70	\$24.41	\$11.94	\$14.35	\$0.00	\$50.70
3	80	\$27.90	\$11.94	\$14.35	\$0.00	\$54.19
4	90	\$31.38	\$11.94	\$14.35	\$0.00	\$57.67

Notes:

Steps 1-2 are 1000 hrs.; Steps 3-4 are 2000 hrs.

Apprentice to Journeyworker Ratio:1:6

FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	06/01/2020	\$23.50	\$8.60	\$13.03	\$0.00	\$45.13
	12/01/2020	\$24.50	\$8.60	\$13.03	\$0.00	\$46.13
	06/01/2021	\$24.50	\$8.60	\$13.03	\$0.00	\$46.13
	12/01/2021	\$24.50	\$8.60	\$13.03	\$0.00	\$46.13

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE III</i>	09/01/2019	\$37.44	\$7.84	\$16.87	\$0.00	\$62.15
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Apprentice - FLOORCOVERER - Local 2168 Zone III

Effective Date - 09/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.72	\$7.84	\$1.32	\$0.00	\$27.88
2	55	\$20.59	\$7.84	\$1.32	\$0.00	\$29.75
3	60	\$22.46	\$7.84	\$12.91	\$0.00	\$43.21
4	65	\$24.34	\$7.84	\$12.91	\$0.00	\$45.09
5	70	\$26.21	\$7.84	\$14.23	\$0.00	\$48.28
6	75	\$28.08	\$7.84	\$14.23	\$0.00	\$50.15
7	80	\$29.95	\$7.84	\$15.55	\$0.00	\$53.34
8	85	\$31.82	\$7.84	\$15.55	\$0.00	\$55.21

Notes: Steps are 750 hrs.

% After 09/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)

Step 1&2 \$26.01/ 3&4 \$31.03/ 5&6 \$48.28/ 7&8 \$53.34

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FORK LIFT <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$35.09	\$11.94	\$14.35	\$0.00	\$61.38
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATORS/LIGHTING PLANTS <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$31.64	\$11.94	\$14.35	\$0.00	\$57.93
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 1333</i>	06/01/2020	\$39.18	\$10.80	\$10.45	\$0.00	\$60.43

Apprentice - GLAZIER - Local 1333

Effective Date - 06/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.59	\$10.80	\$1.80	\$0.00	\$32.19
2	56	\$22.04	\$10.80	\$1.80	\$0.00	\$34.64
3	63	\$24.49	\$10.80	\$2.45	\$0.00	\$37.74
4	69	\$26.94	\$10.80	\$2.45	\$0.00	\$40.19
5	75	\$29.39	\$10.80	\$3.15	\$0.00	\$43.34
6	81	\$31.83	\$10.80	\$3.15	\$0.00	\$45.78
7	88	\$34.28	\$10.80	\$10.45	\$0.00	\$55.53
8	94	\$36.73	\$10.80	\$10.45	\$0.00	\$57.98

Notes:

Apprentice to Journeyworker Ratio:1:3

GRADER/TRENCHING MACHINE/DERRICK <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$35.40	\$11.94	\$14.35	\$0.00	\$61.69
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 63</i>	01/01/2020	\$36.99	\$10.64	\$16.22	\$1.77	\$65.62
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 7</i>	06/28/2020	\$44.01	\$11.25	\$12.82	\$0.00	\$68.08
	01/03/2021	\$44.61	\$11.50	\$12.99	\$0.00	\$69.10
	06/27/2021	\$45.21	\$11.75	\$13.26	\$0.00	\$70.22
	01/02/2022	\$45.81	\$12.00	\$13.42	\$0.00	\$71.23
	07/03/2022	\$46.41	\$12.25	\$13.69	\$0.00	\$72.35
	01/01/2023	\$47.01	\$12.50	\$13.96	\$0.00	\$73.47
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 63</i>	01/01/2020	\$36.99	\$10.64	\$16.22	\$1.77	\$65.62
For apprentice rates see "Apprentice- SHEET METAL WORKER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (TESTING AND BALANCING -WATER) <i>PLUMBERS & PIPEFITTERS LOCAL 104</i>	03/17/2020	\$41.71	\$9.05	\$16.35	\$0.00	\$67.11
	09/17/2020	\$42.71	\$9.05	\$16.35	\$0.00	\$68.11
	03/17/2021	\$43.71	\$9.05	\$16.35	\$0.00	\$69.11
	09/17/2021	\$44.71	\$9.05	\$16.35	\$0.00	\$70.11
	03/17/2022	\$45.96	\$9.05	\$16.35	\$0.00	\$71.36
	09/17/2022	\$46.96	\$9.05	\$16.35	\$0.00	\$72.36
	03/17/2023	\$48.21	\$9.05	\$16.35	\$0.00	\$73.61
	09/17/2023	\$49.21	\$9.05	\$16.35	\$0.00	\$74.61
	03/17/2024	\$50.46	\$9.05	\$16.35	\$0.00	\$75.86
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						

HVAC MECHANIC <i>PLUMBERS & PIPEFITTERS LOCAL 104</i>	03/17/2020	\$41.71	\$9.05	\$16.35	\$0.00	\$67.11
	09/17/2020	\$42.71	\$9.05	\$16.35	\$0.00	\$68.11
	03/17/2021	\$43.71	\$9.05	\$16.35	\$0.00	\$69.11
	09/17/2021	\$44.71	\$9.05	\$16.35	\$0.00	\$70.11
	03/17/2022	\$45.96	\$9.05	\$16.35	\$0.00	\$71.36
	09/17/2022	\$46.96	\$9.05	\$16.35	\$0.00	\$72.36
	03/17/2023	\$48.21	\$9.05	\$16.35	\$0.00	\$73.61
	09/17/2023	\$49.21	\$9.05	\$16.35	\$0.00	\$74.61
	03/17/2024	\$50.46	\$9.05	\$16.35	\$0.00	\$75.86
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						

HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	06/01/2020	\$32.25	\$8.60	\$13.03	\$0.00	\$53.88
	12/01/2020	\$33.06	\$8.60	\$13.03	\$0.00	\$54.69
	06/01/2021	\$33.90	\$8.60	\$13.03	\$0.00	\$55.53
	12/01/2021	\$34.73	\$8.60	\$13.03	\$0.00	\$56.36
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						

INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (SPRINGFIELD)</i>	09/01/2019	\$38.75	\$12.80	\$16.40	\$0.00	\$67.95
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Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Springfield

Effective Date - 09/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.38	\$12.80	\$11.90	\$0.00	\$44.08
2	60	\$23.25	\$12.80	\$12.80	\$0.00	\$48.85
3	70	\$27.13	\$12.80	\$13.70	\$0.00	\$53.63
4	80	\$31.00	\$12.80	\$14.60	\$0.00	\$58.40

Notes:
Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (SPRINGFIELD AREA)</i>	03/16/2020	\$35.95	\$8.00	\$20.75	\$0.00	\$64.70
	09/16/2020	\$36.85	\$8.00	\$20.75	\$0.00	\$65.60
	03/16/2021	\$37.70	\$8.00	\$20.75	\$0.00	\$66.45

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - IRONWORKER - Local 7 Springfield

Effective Date - 03/16/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$21.57	\$8.00	\$20.75	\$0.00	\$50.32
2	70	\$25.17	\$8.00	\$20.75	\$0.00	\$53.92
3	75	\$26.96	\$8.00	\$20.75	\$0.00	\$55.71
4	80	\$28.76	\$8.00	\$20.75	\$0.00	\$57.51
5	85	\$30.56	\$8.00	\$20.75	\$0.00	\$59.31
6	90	\$32.36	\$8.00	\$20.75	\$0.00	\$61.11

Effective Date - 09/16/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.11	\$8.00	\$20.75	\$0.00	\$50.86
2	70	\$25.80	\$8.00	\$20.75	\$0.00	\$54.55
3	75	\$27.64	\$8.00	\$20.75	\$0.00	\$56.39
4	80	\$29.48	\$8.00	\$20.75	\$0.00	\$58.23
5	85	\$31.32	\$8.00	\$20.75	\$0.00	\$60.07
6	90	\$33.17	\$8.00	\$20.75	\$0.00	\$61.92

Notes:

Structural 1:6; Ornamental 1:4

Apprentice to Journeyworker Ratio:

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 3 (BUILDING & SITE)	12/02/2019	\$31.75	\$8.10	\$14.78	\$0.00	\$54.63
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For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 3 (BUILDING & SITE)	12/02/2019	\$31.50	\$8.10	\$14.78	\$0.00	\$54.38
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Apprentice - LABORER - Zone 3 Building & Site

Effective Date - 12/02/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$18.90	\$8.10	\$14.78	\$0.00	\$41.78
2	70	\$22.05	\$8.10	\$14.78	\$0.00	\$44.93
3	80	\$25.20	\$8.10	\$14.78	\$0.00	\$48.08
4	90	\$28.35	\$8.10	\$14.78	\$0.00	\$51.23

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER (HEAVY & HIGHWAY) LABORERS - ZONE 3 (HEAVY & HIGHWAY)	06/01/2020	\$31.50	\$8.60	\$13.03	\$0.00	\$53.13
	12/01/2020	\$32.31	\$8.60	\$13.03	\$0.00	\$53.94
	06/01/2021	\$33.15	\$8.60	\$13.03	\$0.00	\$54.78
	12/01/2021	\$33.98	\$8.60	\$13.03	\$0.00	\$55.61

Apprentice - LABORER (Heavy & Highway) - Zone 3

Effective Date - 06/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$18.90	\$8.60	\$13.03	\$0.00	\$40.53
2	70	\$22.05	\$8.60	\$13.03	\$0.00	\$43.68
3	80	\$25.20	\$8.60	\$13.03	\$0.00	\$46.83
4	90	\$28.35	\$8.60	\$13.03	\$0.00	\$49.98

Effective Date - 12/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.39	\$8.60	\$13.03	\$0.00	\$41.02
2	70	\$22.62	\$8.60	\$13.03	\$0.00	\$44.25
3	80	\$25.85	\$8.60	\$13.03	\$0.00	\$47.48
4	90	\$29.08	\$8.60	\$13.03	\$0.00	\$50.71

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER LABORERS - ZONE 3 (BUILDING & SITE)	12/02/2019	\$31.50	\$8.10	\$14.78	\$0.00	\$54.38
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For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER LABORERS - ZONE 3 (BUILDING & SITE)	12/02/2019	\$31.75	\$8.10	\$14.78	\$0.00	\$54.63
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For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER LABORERS - ZONE 3 (BUILDING & SITE)	06/01/2020	\$31.60	\$8.60	\$15.09	\$0.00	\$55.29
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For apprentice rates see "Apprentice- LABORER"

LABORER: MASON TENDER LABORERS - ZONE 3 (BUILDING & SITE)	12/02/2019	\$32.50	\$8.10	\$14.78	\$0.00	\$55.38
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For apprentice rates see "Apprentice- LABORER"

LABORER: MASON TENDER (HEAVY & HIGHWAY) LABORERS - ZONE 3 (HEAVY & HIGHWAY)	06/01/2020	\$31.75	\$8.60	\$13.03	\$0.00	\$53.38
	12/01/2020	\$32.56	\$8.60	\$13.03	\$0.00	\$54.19
	06/01/2021	\$33.40	\$8.60	\$13.03	\$0.00	\$55.03
	12/01/2021	\$34.23	\$8.60	\$13.03	\$0.00	\$55.86

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

LABORER: MULTI-TRADE TENDER LABORERS - ZONE 3 (BUILDING & SITE)	12/02/2019	\$31.50	\$8.10	\$14.78	\$0.00	\$54.38
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For apprentice rates see "Apprentice- LABORER"

LABORER: TREE REMOVER LABORERS - ZONE 3 (BUILDING & SITE)	12/02/2019	\$31.50	\$8.10	\$14.78	\$0.00	\$54.38
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This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"

LABORER: LASER BEAM OPERATOR LABORERS - ZONE 3 (BUILDING & SITE)	12/02/2019	\$31.75	\$8.10	\$14.78	\$0.00	\$54.63
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For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	06/01/2020	\$31.75	\$8.60	\$13.03	\$0.00	\$53.38
	12/01/2020	\$32.56	\$8.60	\$13.03	\$0.00	\$54.19
	06/01/2021	\$33.40	\$8.60	\$13.03	\$0.00	\$55.03
	12/01/2021	\$34.23	\$8.60	\$13.03	\$0.00	\$55.86

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)

MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE</i>	08/01/2020	\$36.17	\$10.75	\$19.49	\$0.00	\$66.41
	02/01/2021	\$36.67	\$10.75	\$19.49	\$0.00	\$66.91
	08/01/2021	\$37.67	\$10.75	\$19.62	\$0.00	\$68.04
	02/01/2022	\$38.12	\$10.75	\$19.62	\$0.00	\$68.49

Apprentice - MARBLE-TILE FINISHER-Local 3 Marble/Tile (Spr/Pitt)

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.09	\$10.75	\$19.49	\$0.00	\$48.33
2	60	\$21.70	\$10.75	\$19.49	\$0.00	\$51.94
3	70	\$25.32	\$10.75	\$19.49	\$0.00	\$55.56
4	80	\$28.94	\$10.75	\$19.49	\$0.00	\$59.18
5	90	\$32.55	\$10.75	\$19.49	\$0.00	\$62.79

Effective Date - 02/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.34	\$10.75	\$19.49	\$0.00	\$48.58
2	60	\$22.00	\$10.75	\$19.49	\$0.00	\$52.24
3	70	\$25.67	\$10.75	\$19.49	\$0.00	\$55.91
4	80	\$29.34	\$10.75	\$19.49	\$0.00	\$59.58
5	90	\$33.00	\$10.75	\$19.49	\$0.00	\$63.24

Notes:

Apprentice to Journeyworker Ratio:1:5

MARBLE MASON/TILE LAYER(SP/PT)SeeBrick
BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE

See "BRICK/STONE/ARTIFICIAL MASONRY(INCL.MASONRY WATERPROOFING)

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$35.40	\$11.94	\$14.35	\$0.00	\$61.69
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANIC/WELDER/BOOM TRUCK <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$34.87	\$11.94	\$14.35	\$0.00	\$61.16
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 3) <i>MILLWRIGHTS LOCAL 1121 - Zone 3</i>	04/01/2019	\$37.11	\$9.90	\$18.50	\$0.00	\$65.51
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.76	\$8.25	\$0.00	\$0.00	\$34.01
2	55	\$28.33	\$8.25	\$6.05	\$0.00	\$42.63
3	60	\$30.91	\$8.25	\$6.60	\$0.00	\$45.76
4	65	\$33.48	\$8.25	\$7.15	\$0.00	\$48.88
5	70	\$36.06	\$8.25	\$19.10	\$0.00	\$63.41
6	75	\$38.63	\$8.25	\$19.65	\$0.00	\$66.53
7	80	\$41.21	\$8.25	\$20.20	\$0.00	\$69.66
8	90	\$46.36	\$8.25	\$21.30	\$0.00	\$75.91

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.03	\$8.25	\$0.00	\$0.00	\$34.28
2	55	\$28.63	\$8.25	\$6.16	\$0.00	\$43.04
3	60	\$31.24	\$8.25	\$6.72	\$0.00	\$46.21
4	65	\$33.84	\$8.25	\$7.28	\$0.00	\$49.37
5	70	\$36.44	\$8.25	\$19.39	\$0.00	\$64.08
6	75	\$39.05	\$8.25	\$19.95	\$0.00	\$67.25
7	80	\$41.65	\$8.25	\$20.51	\$0.00	\$70.41
8	90	\$46.85	\$8.25	\$21.63	\$0.00	\$76.73

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	07/01/2020	\$34.88	\$8.25	\$18.50	\$0.00	\$61.63
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 3	01/01/2021	\$35.43	\$8.25	\$18.85	\$0.00	\$62.53

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 3 - Spray/Sandblast - New

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.44	\$8.25	\$0.00	\$0.00	\$25.69
2	55	\$19.18	\$8.25	\$3.91	\$0.00	\$31.34
3	60	\$20.93	\$8.25	\$4.26	\$0.00	\$33.44
4	65	\$22.67	\$8.25	\$4.62	\$0.00	\$35.54
5	70	\$24.42	\$8.25	\$16.37	\$0.00	\$49.04
6	75	\$26.16	\$8.25	\$16.73	\$0.00	\$51.14
7	80	\$27.90	\$8.25	\$17.08	\$0.00	\$53.23
8	90	\$31.39	\$8.25	\$17.79	\$0.00	\$57.43

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.72	\$8.25	\$0.00	\$0.00	\$25.97
2	55	\$19.49	\$8.25	\$4.02	\$0.00	\$31.76
3	60	\$21.26	\$8.25	\$4.38	\$0.00	\$33.89
4	65	\$23.03	\$8.25	\$4.75	\$0.00	\$36.03
5	70	\$24.80	\$8.25	\$16.66	\$0.00	\$49.71
6	75	\$26.57	\$8.25	\$17.03	\$0.00	\$51.85
7	80	\$28.34	\$8.25	\$17.39	\$0.00	\$53.98
8	90	\$31.89	\$8.25	\$18.12	\$0.00	\$58.26

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)	07/01/2020	\$32.20	\$8.25	\$18.50	\$0.00	\$58.95
PAINTERS LOCAL 35 - ZONE 3	01/01/2021	\$32.75	\$8.25	\$18.85	\$0.00	\$59.85

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 3 - Spray/Sandblast - Repaint

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.10	\$8.25	\$0.00	\$0.00	\$24.35
2	55	\$17.71	\$8.25	\$3.91	\$0.00	\$29.87
3	60	\$19.32	\$8.25	\$4.26	\$0.00	\$31.83
4	65	\$20.93	\$8.25	\$4.62	\$0.00	\$33.80
5	70	\$22.54	\$8.25	\$16.37	\$0.00	\$47.16
6	75	\$24.15	\$8.25	\$16.73	\$0.00	\$49.13
7	80	\$25.76	\$8.25	\$17.08	\$0.00	\$51.09
8	90	\$28.98	\$8.25	\$17.79	\$0.00	\$55.02

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.38	\$8.25	\$0.00	\$0.00	\$24.63
2	55	\$18.01	\$8.25	\$4.02	\$0.00	\$30.28
3	60	\$19.65	\$8.25	\$4.38	\$0.00	\$32.28
4	65	\$21.29	\$8.25	\$4.75	\$0.00	\$34.29
5	70	\$22.93	\$8.25	\$16.66	\$0.00	\$47.84
6	75	\$24.56	\$8.25	\$17.03	\$0.00	\$49.84
7	80	\$26.20	\$8.25	\$17.39	\$0.00	\$51.84
8	90	\$29.48	\$8.25	\$18.12	\$0.00	\$55.85

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, NEW) *	07/01/2020	\$33.48	\$8.25	\$18.50	\$0.00	\$60.23
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 3	01/01/2021	\$34.03	\$8.25	\$18.85	\$0.00	\$61.13

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER - Local 35 Zone 3 - BRUSH NEW

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.74	\$8.25	\$0.00	\$0.00	\$24.99
2	55	\$18.41	\$8.25	\$3.91	\$0.00	\$30.57
3	60	\$20.09	\$8.25	\$4.26	\$0.00	\$32.60
4	65	\$21.76	\$8.25	\$4.62	\$0.00	\$34.63
5	70	\$23.44	\$8.25	\$16.37	\$0.00	\$48.06
6	75	\$25.11	\$8.25	\$16.73	\$0.00	\$50.09
7	80	\$26.78	\$8.25	\$17.08	\$0.00	\$52.11
8	90	\$30.13	\$8.25	\$17.79	\$0.00	\$56.17

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.02	\$8.25	\$0.00	\$0.00	\$25.27
2	55	\$18.72	\$8.25	\$4.02	\$0.00	\$30.99
3	60	\$20.42	\$8.25	\$4.38	\$0.00	\$33.05
4	65	\$22.12	\$8.25	\$4.75	\$0.00	\$35.12
5	70	\$23.82	\$8.25	\$16.66	\$0.00	\$48.73
6	75	\$25.52	\$8.25	\$17.03	\$0.00	\$50.80
7	80	\$27.22	\$8.25	\$17.39	\$0.00	\$52.86
8	90	\$30.63	\$8.25	\$18.12	\$0.00	\$57.00

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	07/01/2020	\$30.80	\$8.25	\$18.50	\$0.00	\$57.55
PAINTERS LOCAL 35 - ZONE 3	01/01/2021	\$31.35	\$8.25	\$18.85	\$0.00	\$58.45

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 3 - BRUSH REPAINT

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.40	\$8.25	\$0.00	\$0.00	\$23.65
2	55	\$16.94	\$8.25	\$3.91	\$0.00	\$29.10
3	60	\$18.48	\$8.25	\$4.26	\$0.00	\$30.99
4	65	\$20.02	\$8.25	\$4.62	\$0.00	\$32.89
5	70	\$21.56	\$8.25	\$16.37	\$0.00	\$46.18
6	75	\$23.10	\$8.25	\$16.73	\$0.00	\$48.08
7	80	\$24.64	\$8.25	\$17.08	\$0.00	\$49.97
8	90	\$27.72	\$8.25	\$17.79	\$0.00	\$53.76

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.68	\$8.25	\$0.00	\$0.00	\$23.93
2	55	\$17.24	\$8.25	\$4.02	\$0.00	\$29.51
3	60	\$18.81	\$8.25	\$4.38	\$0.00	\$31.44
4	65	\$20.38	\$8.25	\$4.75	\$0.00	\$33.38
5	70	\$21.95	\$8.25	\$16.66	\$0.00	\$46.86
6	75	\$23.51	\$8.25	\$17.03	\$0.00	\$48.79
7	80	\$25.08	\$8.25	\$17.39	\$0.00	\$50.72
8	90	\$28.22	\$8.25	\$18.12	\$0.00	\$54.59

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY) LABORERS - ZONE 3 (HEAVY & HIGHWAY)	06/01/2020	\$31.50	\$8.60	\$13.03	\$0.00	\$53.13
	12/01/2020	\$32.31	\$8.60	\$13.03	\$0.00	\$53.94
	06/01/2021	\$33.15	\$8.60	\$13.03	\$0.00	\$54.78
	12/01/2021	\$33.98	\$8.60	\$13.03	\$0.00	\$55.61

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)

PANEL & PICKUP TRUCKS DRIVER TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	08/01/2020	\$34.98	\$12.91	\$13.72	\$0.00	\$61.61
	12/01/2020	\$34.98	\$12.91	\$14.82	\$0.00	\$62.71
	06/01/2021	\$35.78	\$12.91	\$14.82	\$0.00	\$63.51
	08/01/2021	\$35.78	\$13.41	\$14.82	\$0.00	\$64.01
	12/01/2021	\$35.78	\$13.41	\$16.01	\$0.00	\$65.20

PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)	08/01/2019	\$43.79	\$9.90	\$21.15	\$0.00	\$74.84
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PILE DRIVER LOCAL 56 (ZONE 3)

For apprentice rates see "Apprentice- PILE DRIVER"

PILE DRIVER PILE DRIVER LOCAL 56 (ZONE 3)	08/01/2019	\$43.79	\$9.90	\$21.15	\$0.00	\$74.84
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Apprentice - PILE DRIVER - Local 56 Zone 3

Effective Date - 08/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Notes: Apprentice wages shall be no less than the following Steps;
 (Same as set in Zone 1)
 1\$54.34/2\$58.99/3\$63.65/4\$65.98/5\$68.31/6\$68.31/7\$72.96/8\$72.96

Apprentice to Journeyworker Ratio:1:5

PIPELAYER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/02/2019	\$31.75	\$8.10	\$14.78	\$0.00	\$54.63
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For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	06/01/2020	\$31.75	\$8.60	\$13.03	\$0.00	\$53.38
	12/01/2020	\$32.56	\$8.60	\$13.03	\$0.00	\$54.19
	06/01/2021	\$33.40	\$8.60	\$13.03	\$0.00	\$55.03
	12/01/2021	\$34.23	\$8.60	\$13.03	\$0.00	\$55.86

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

PLUMBER & PIPEFITTER <i>PLUMBERS & PIPEFITTERS LOCAL 104</i>	03/17/2020	\$41.71	\$9.05	\$16.35	\$0.00	\$67.11
	09/17/2020	\$42.71	\$9.05	\$16.35	\$0.00	\$68.11
	03/17/2021	\$43.71	\$9.05	\$16.35	\$0.00	\$69.11
	09/17/2021	\$44.71	\$9.05	\$16.35	\$0.00	\$70.11
	03/17/2022	\$45.96	\$9.05	\$16.35	\$0.00	\$71.36
	09/17/2022	\$46.96	\$9.05	\$16.35	\$0.00	\$72.36
	03/17/2023	\$48.21	\$9.05	\$16.35	\$0.00	\$73.61
	09/17/2023	\$49.21	\$9.05	\$16.35	\$0.00	\$74.61
	03/17/2024	\$50.46	\$9.05	\$16.35	\$0.00	\$75.86

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PLUMBER/PIPEFITTER - Local 104

Effective Date - 03/17/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$18.77	\$9.05	\$9.60	\$0.00	\$37.42
2	50	\$20.86	\$9.05	\$9.60	\$0.00	\$39.51
3	55	\$22.94	\$9.05	\$9.60	\$0.00	\$41.59
4	60	\$25.03	\$9.05	\$9.60	\$0.00	\$43.68
5	65	\$27.11	\$9.05	\$9.60	\$0.00	\$45.76
6	70	\$29.20	\$9.05	\$9.60	\$0.00	\$47.85
7	75	\$31.28	\$9.05	\$9.60	\$0.00	\$49.93
8	80	\$33.37	\$9.05	\$9.60	\$0.00	\$52.02
9	80	\$33.37	\$9.05	\$16.35	\$0.00	\$58.77
10	80	\$33.37	\$9.05	\$16.35	\$0.00	\$58.77

Effective Date - 09/17/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$19.22	\$9.05	\$9.60	\$0.00	\$37.87
2	50	\$21.36	\$9.05	\$9.60	\$0.00	\$40.01
3	55	\$23.49	\$9.05	\$9.60	\$0.00	\$42.14
4	60	\$25.63	\$9.05	\$9.60	\$0.00	\$44.28
5	65	\$27.76	\$9.05	\$9.60	\$0.00	\$46.41
6	70	\$29.90	\$9.05	\$9.60	\$0.00	\$48.55
7	75	\$32.03	\$9.05	\$9.60	\$0.00	\$50.68
8	80	\$34.17	\$9.05	\$9.60	\$0.00	\$52.82
9	80	\$34.17	\$9.05	\$16.35	\$0.00	\$59.57
10	80	\$34.17	\$9.05	\$16.35	\$0.00	\$59.57

Notes: **1:1,2:5,3:9,4:12

Apprentice to Journeyworker Ratio:**

PNEUMATIC CONTROLS (TEMP.) PLUMBERS & PIPEFITTERS LOCAL 104	03/17/2020	\$41.71	\$9.05	\$16.35	\$0.00	\$67.11
	09/17/2020	\$42.71	\$9.05	\$16.35	\$0.00	\$68.11
	03/17/2021	\$43.71	\$9.05	\$16.35	\$0.00	\$69.11
	09/17/2021	\$44.71	\$9.05	\$16.35	\$0.00	\$70.11
	03/17/2022	\$45.96	\$9.05	\$16.35	\$0.00	\$71.36
	09/17/2022	\$46.96	\$9.05	\$16.35	\$0.00	\$72.36
	03/17/2023	\$48.21	\$9.05	\$16.35	\$0.00	\$73.61
	09/17/2023	\$49.21	\$9.05	\$16.35	\$0.00	\$74.61
	03/17/2024	\$50.46	\$9.05	\$16.35	\$0.00	\$75.86

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

PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) LABORERS - ZONE 3 (HEAVY & HIGHWAY)	06/01/2020	\$31.75	\$8.60	\$13.03	\$0.00	\$53.38
	12/01/2020	\$32.56	\$8.60	\$13.03	\$0.00	\$54.19
	06/01/2021	\$33.40	\$8.60	\$13.03	\$0.00	\$55.03
	12/01/2021	\$34.23	\$8.60	\$13.03	\$0.00	\$55.86

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
POWDERMAN & BLASTER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/02/2019	\$32.50	\$8.10	\$14.78	\$0.00	\$55.38
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	06/01/2020	\$32.50	\$8.60	\$13.03	\$0.00	\$54.13
	12/01/2020	\$33.31	\$8.60	\$13.03	\$0.00	\$54.94
	06/01/2021	\$34.15	\$8.60	\$13.03	\$0.00	\$55.78
	12/01/2021	\$34.98	\$8.60	\$13.03	\$0.00	\$56.61
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$35.40	\$11.94	\$14.35	\$0.00	\$61.69
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$34.87	\$11.94	\$14.35	\$0.00	\$61.16
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 404 - Construction Service (Northampton)</i>	05/01/2020	\$22.44	\$11.07	\$6.50	\$0.00	\$40.01
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/02/2019	\$31.75	\$8.10	\$14.78	\$0.00	\$54.63
For apprentice rates see "Apprentice- LABORER"						
ROLLER OPERATOR <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$34.26	\$11.94	\$14.35	\$0.00	\$60.55
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Coal tar pitch) <i>ROOFERS LOCAL 248</i>	07/16/2019	\$32.66	\$10.05	\$16.20	\$0.00	\$58.91
For apprentice rates see "Apprentice- ROOFER"						
ROOFER (Inc.Roofing Waterproofing &Roofing Damproofing) <i>ROOFERS LOCAL 248</i>	07/16/2019	\$32.16	\$10.05	\$15.70	\$0.00	\$57.91

Apprentice - ROOFER - Local 248

Effective Date - 07/16/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.30	\$10.05	\$0.00	\$0.00	\$29.35
2	65	\$20.90	\$10.05	\$15.70	\$0.00	\$46.65
3	70	\$22.51	\$10.05	\$15.70	\$0.00	\$48.26
4	75	\$24.12	\$10.05	\$15.70	\$0.00	\$49.87
5	80	\$25.73	\$10.05	\$15.70	\$0.00	\$51.48
6	85	\$27.34	\$10.05	\$15.70	\$0.00	\$53.09
7	90	\$28.94	\$10.05	\$15.70	\$0.00	\$54.69
8	95	\$30.55	\$10.05	\$15.70	\$0.00	\$56.30

Notes:

Steps are 750 hrs.Roofing(Tear Off)1:1; Same as above

Apprentice to Journeyworker Ratio:1:3

ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 248</i>	07/16/2019	\$32.66	\$10.05	\$16.20	\$0.00	\$58.91
For apprentice rates see "Apprentice- ROOFER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SCRAPER <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$34.87	\$11.94	\$14.35	\$0.00	\$61.16
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
SELF-POWERED ROLLERS AND COMPACTORS (TAMPERS) <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$34.26	\$11.94	\$14.35	\$0.00	\$60.55
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
SELF-PROPELLED POWER BROOM <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$31.64	\$11.94	\$14.35	\$0.00	\$57.93
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
SHEETMETAL WORKER <i>SHEETMETAL WORKERS LOCAL 63</i>	01/01/2020	\$36.99	\$10.64	\$16.22	\$1.77	\$65.62

Apprentice - SHEET METAL WORKER - Local 63

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$16.65	\$6.21	\$4.67	\$0.00	\$27.53
2	50	\$18.50	\$6.55	\$5.19	\$0.00	\$30.24
3	55	\$20.34	\$6.88	\$9.33	\$1.08	\$37.63
4	60	\$22.19	\$7.22	\$9.33	\$1.14	\$39.88
5	65	\$24.04	\$7.55	\$9.33	\$1.20	\$42.12
6	70	\$25.89	\$7.88	\$9.33	\$1.27	\$44.37
7	75	\$27.74	\$8.22	\$9.33	\$1.33	\$46.62
8	80	\$29.59	\$9.30	\$15.18	\$1.59	\$55.66
9	85	\$31.44	\$9.64	\$15.18	\$1.66	\$57.92
10	90	\$33.29	\$9.98	\$15.18	\$1.72	\$60.17

Notes:

Apprentice to Journeyworker Ratio:1:3

SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$35.44	\$12.91	\$13.72	\$0.00	\$62.07
	12/01/2020	\$35.44	\$12.91	\$14.82	\$0.00	\$63.17
	06/01/2021	\$36.24	\$12.91	\$14.82	\$0.00	\$63.97
	08/01/2021	\$36.24	\$13.41	\$14.82	\$0.00	\$64.47
	12/01/2021	\$36.24	\$13.41	\$16.01	\$0.00	\$65.66
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$35.73	\$12.91	\$13.72	\$0.00	\$62.36
	12/01/2020	\$35.73	\$12.91	\$14.82	\$0.00	\$63.46
	06/01/2021	\$36.53	\$12.91	\$14.82	\$0.00	\$64.26
	08/01/2021	\$36.53	\$13.41	\$14.82	\$0.00	\$64.76
	12/01/2021	\$36.53	\$13.41	\$16.01	\$0.00	\$65.95
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 669</i>	01/01/2019	\$41.51	\$10.02	\$13.08	\$0.00	\$64.61

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SPRINKLER FITTER - Local 669

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$18.68	\$7.75	\$0.00	\$0.00	\$26.43
2	50	\$20.76	\$7.75	\$0.00	\$0.00	\$28.51
3	55	\$22.83	\$10.02	\$7.25	\$0.00	\$40.10
4	60	\$24.91	\$10.02	\$7.25	\$0.00	\$42.18
5	65	\$26.98	\$10.02	\$7.50	\$0.00	\$44.50
6	70	\$29.06	\$10.02	\$7.50	\$0.00	\$46.58
7	75	\$31.13	\$10.02	\$7.50	\$0.00	\$48.65
8	80	\$33.21	\$10.02	\$7.50	\$0.00	\$50.73
9	85	\$35.28	\$10.02	\$7.50	\$0.00	\$52.80
10	90	\$37.36	\$10.02	\$7.50	\$0.00	\$54.88

Notes:

Apprentice to Journeyworker Ratio:1:1

TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 7</i>	06/28/2020	\$44.01	\$11.25	\$12.82	\$0.00	\$68.08
	01/03/2021	\$44.61	\$11.50	\$12.99	\$0.00	\$69.10
	06/27/2021	\$45.21	\$11.75	\$13.26	\$0.00	\$70.22
	01/02/2022	\$45.81	\$12.00	\$13.42	\$0.00	\$71.23
	07/03/2022	\$46.41	\$12.25	\$13.69	\$0.00	\$72.35
	01/01/2023	\$47.01	\$12.50	\$13.96	\$0.00	\$73.47

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - TELECOMMUNICATION TECHNICIAN - Local 7

Effective Date - 06/28/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.60	\$6.15	\$0.53	\$0.00	\$24.28
2	45	\$19.80	\$6.15	\$0.59	\$0.00	\$26.54
3	50	\$22.01	\$11.25	\$6.96	\$0.00	\$40.22
4	55	\$24.21	\$11.25	\$7.03	\$0.00	\$42.49
5	65	\$28.61	\$11.25	\$8.72	\$0.00	\$48.58
6	70	\$30.81	\$11.25	\$9.82	\$0.00	\$51.88

Effective Date - 01/03/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.84	\$6.90	\$0.54	\$0.00	\$25.28
2	45	\$20.07	\$6.90	\$0.60	\$0.00	\$27.57
3	50	\$22.31	\$11.50	\$7.02	\$0.00	\$40.83
4	55	\$24.54	\$11.50	\$7.09	\$0.00	\$43.13
5	65	\$29.00	\$11.50	\$8.78	\$0.00	\$49.28
6	70	\$31.23	\$11.50	\$9.89	\$0.00	\$52.62

Notes:

Steps are 800 hours

Apprentice to Journeyworker Ratio:1:1

TERRAZZO FINISHERS	08/01/2020	\$54.69	\$10.75	\$22.09	\$0.00	\$87.53
BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE	02/01/2021	\$55.33	\$10.75	\$22.09	\$0.00	\$88.17
	08/01/2021	\$56.73	\$10.75	\$22.25	\$0.00	\$89.73
	02/01/2022	\$57.32	\$10.75	\$22.25	\$0.00	\$90.32

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - TERRAZZO FINISHER-Local 3 Marble/Tile (Spr/Ptt)

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.35	\$10.75	\$22.09	\$0.00	\$60.19
2	60	\$32.81	\$10.75	\$22.09	\$0.00	\$65.65
3	70	\$38.28	\$10.75	\$22.09	\$0.00	\$71.12
4	80	\$43.75	\$10.75	\$22.09	\$0.00	\$76.59
5	90	\$49.22	\$10.75	\$22.09	\$0.00	\$82.06

Effective Date - 02/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.67	\$10.75	\$22.09	\$0.00	\$60.51
2	60	\$33.20	\$10.75	\$22.09	\$0.00	\$66.04
3	70	\$38.73	\$10.75	\$22.09	\$0.00	\$71.57
4	80	\$44.26	\$10.75	\$22.09	\$0.00	\$77.10
5	90	\$49.80	\$10.75	\$22.09	\$0.00	\$82.64

Notes:

Apprentice to Journeyworker Ratio:1:5

TERRAZZO MECHANIC	08/01/2020	\$55.77	\$10.75	\$22.08	\$0.00	\$88.60
BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE	02/01/2021	\$56.41	\$10.75	\$22.08	\$0.00	\$89.24
	08/01/2021	\$57.81	\$10.75	\$22.24	\$0.00	\$90.80
	02/01/2022	\$58.38	\$10.75	\$22.24	\$0.00	\$91.37

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - TERRAZZO MECH - Local 3 Marble/Tile (Spr/Pitt)

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.89	\$10.75	\$22.08	\$0.00	\$60.72
2	60	\$33.46	\$10.75	\$22.08	\$0.00	\$66.29
3	70	\$39.04	\$10.75	\$22.08	\$0.00	\$71.87
4	80	\$44.62	\$10.75	\$22.08	\$0.00	\$77.45
5	90	\$50.19	\$10.75	\$22.08	\$0.00	\$83.02

Effective Date - 02/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.21	\$10.75	\$22.08	\$0.00	\$61.04
2	60	\$33.85	\$10.75	\$22.08	\$0.00	\$66.68
3	70	\$39.49	\$10.75	\$22.08	\$0.00	\$72.32
4	80	\$45.13	\$10.75	\$22.08	\$0.00	\$77.96
5	90	\$50.77	\$10.75	\$22.08	\$0.00	\$83.60

Notes:

Apprentice to Journeyworker Ratio:1:5

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2020	\$40.55	\$8.60	\$17.24	\$0.00	\$66.39
	12/01/2020	\$41.53	\$8.60	\$17.24	\$0.00	\$67.37
	06/01/2021	\$42.55	\$8.60	\$17.24	\$0.00	\$68.39
	12/01/2021	\$43.56	\$8.60	\$17.24	\$0.00	\$69.40

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2020	\$39.27	\$8.60	\$17.24	\$0.00	\$65.11
	12/01/2020	\$40.25	\$8.60	\$17.24	\$0.00	\$66.09
	06/01/2021	\$41.27	\$8.60	\$17.24	\$0.00	\$67.11
	12/01/2021	\$42.28	\$8.60	\$17.24	\$0.00	\$68.12

For apprentice rates see "Apprentice- LABORER"

TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2020	\$39.15	\$8.60	\$17.24	\$0.00	\$64.99
	12/01/2020	\$40.13	\$8.60	\$17.24	\$0.00	\$65.97
	06/01/2021	\$41.15	\$8.60	\$17.24	\$0.00	\$66.99
	12/01/2021	\$42.16	\$8.60	\$17.24	\$0.00	\$68.00

For apprentice rates see "Apprentice- LABORER"

TRACTORS <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2019	\$34.26	\$11.94	\$14.35	\$0.00	\$60.55
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$36.02	\$12.91	\$13.72	\$0.00	\$62.65
	12/01/2020	\$36.02	\$12.91	\$14.82	\$0.00	\$63.75
	06/01/2021	\$36.82	\$12.91	\$14.82	\$0.00	\$64.55
	08/01/2021	\$36.82	\$13.41	\$14.82	\$0.00	\$65.05
	12/01/2021	\$36.82	\$13.41	\$16.01	\$0.00	\$66.24

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	06/01/2020	\$51.38	\$8.60	\$17.69	\$0.00	\$77.67
	12/01/2020	\$52.36	\$8.60	\$17.69	\$0.00	\$78.65
	06/01/2021	\$53.38	\$8.60	\$17.69	\$0.00	\$79.67
	12/01/2021	\$54.39	\$8.60	\$17.69	\$0.00	\$80.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	06/01/2020	\$53.38	\$8.60	\$17.69	\$0.00	\$79.67
	12/01/2020	\$54.36	\$8.60	\$17.69	\$0.00	\$80.65
	06/01/2021	\$55.38	\$8.60	\$17.69	\$0.00	\$81.67
	12/01/2021	\$56.39	\$8.60	\$17.69	\$0.00	\$82.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2020	\$43.45	\$8.60	\$17.69	\$0.00	\$69.74
	12/01/2020	\$44.43	\$8.60	\$17.69	\$0.00	\$70.72
	06/01/2021	\$45.45	\$8.60	\$17.69	\$0.00	\$71.74
	12/01/2021	\$46.46	\$8.60	\$17.69	\$0.00	\$72.75
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2020	\$45.45	\$8.60	\$17.69	\$0.00	\$71.74
	12/01/2020	\$46.43	\$8.60	\$17.69	\$0.00	\$72.72
	06/01/2021	\$47.45	\$8.60	\$17.69	\$0.00	\$73.74
	12/01/2021	\$48.46	\$8.60	\$17.69	\$0.00	\$74.75
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$35.44	\$12.91	\$13.72	\$0.00	\$62.07
	12/01/2020	\$35.44	\$12.91	\$14.82	\$0.00	\$63.17
	06/01/2021	\$36.24	\$12.91	\$14.82	\$0.00	\$63.97
	08/01/2021	\$36.24	\$13.41	\$14.82	\$0.00	\$64.47
	12/01/2021	\$36.24	\$13.41	\$16.01	\$0.00	\$65.66
WAGON DRILL OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/02/2019	\$31.75	\$8.10	\$14.78	\$0.00	\$54.63
For apprentice rates see "Apprentice- LABORER"						
WAGON DRILL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	06/01/2020	\$31.75	\$8.60	\$13.03	\$0.00	\$53.38
	12/01/2020	\$32.56	\$8.60	\$13.03	\$0.00	\$54.19
	06/01/2021	\$33.40	\$8.60	\$13.03	\$0.00	\$55.03
	12/01/2021	\$34.23	\$8.60	\$13.03	\$0.00	\$55.86
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
WATER METER INSTALLER <i>PLUMBERS & PIPEFITTERS LOCAL 104</i>	03/17/2020	\$41.71	\$9.05	\$16.35	\$0.00	\$67.11
	09/17/2020	\$42.71	\$9.05	\$16.35	\$0.00	\$68.11
	03/17/2021	\$43.71	\$9.05	\$16.35	\$0.00	\$69.11
	09/17/2021	\$44.71	\$9.05	\$16.35	\$0.00	\$70.11
	03/17/2022	\$45.96	\$9.05	\$16.35	\$0.00	\$71.36
	09/17/2022	\$46.96	\$9.05	\$16.35	\$0.00	\$72.36
	03/17/2023	\$48.21	\$9.05	\$16.35	\$0.00	\$73.61
	09/17/2023	\$49.21	\$9.05	\$16.35	\$0.00	\$74.61
	03/17/2024	\$50.46	\$9.05	\$16.35	\$0.00	\$75.86
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						

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.)

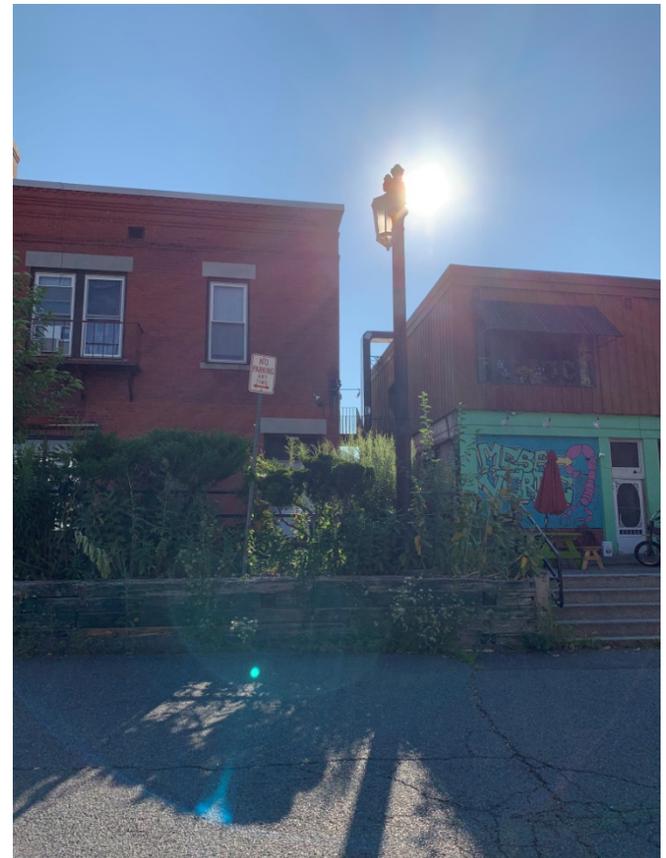
Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

** Multiple ratios are listed in the comment field.

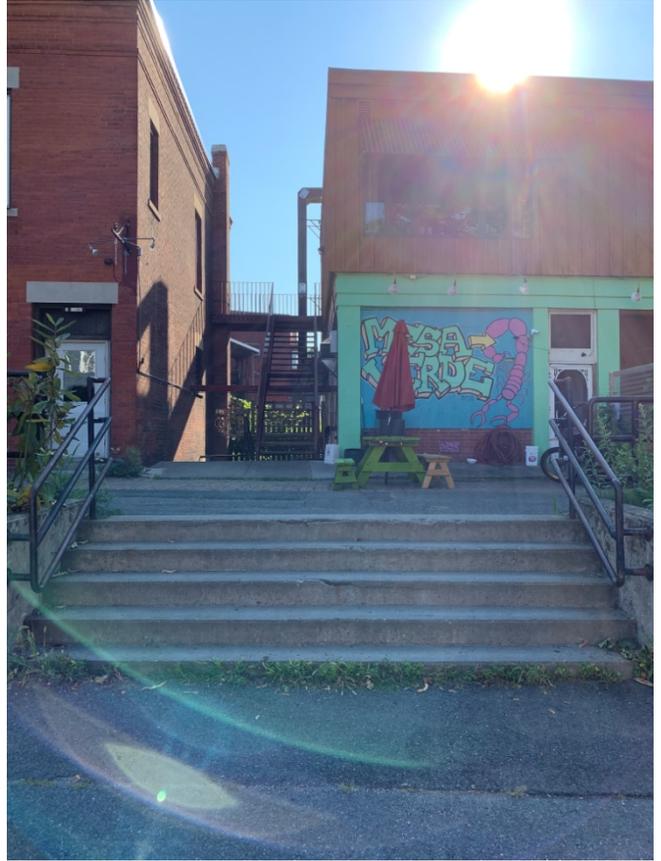
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**** APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.

APPENDIX B
PHOTOS



Existing retaining wall is approximately 160' long with a maximum height of 2.8' and an average height of 2.5'



Stairs are 12' wide with 10" tread and 6" riser

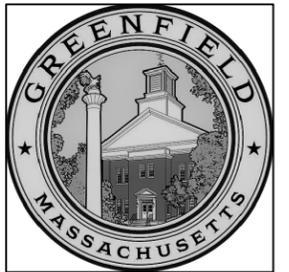


Metal railings for stairs shall be refurbished and reused

APPENDIX C
CONTRACT DRAWINGS

FISKE AVE. RETAINING WALL REPLACEMENT

GREENFIELD, MA



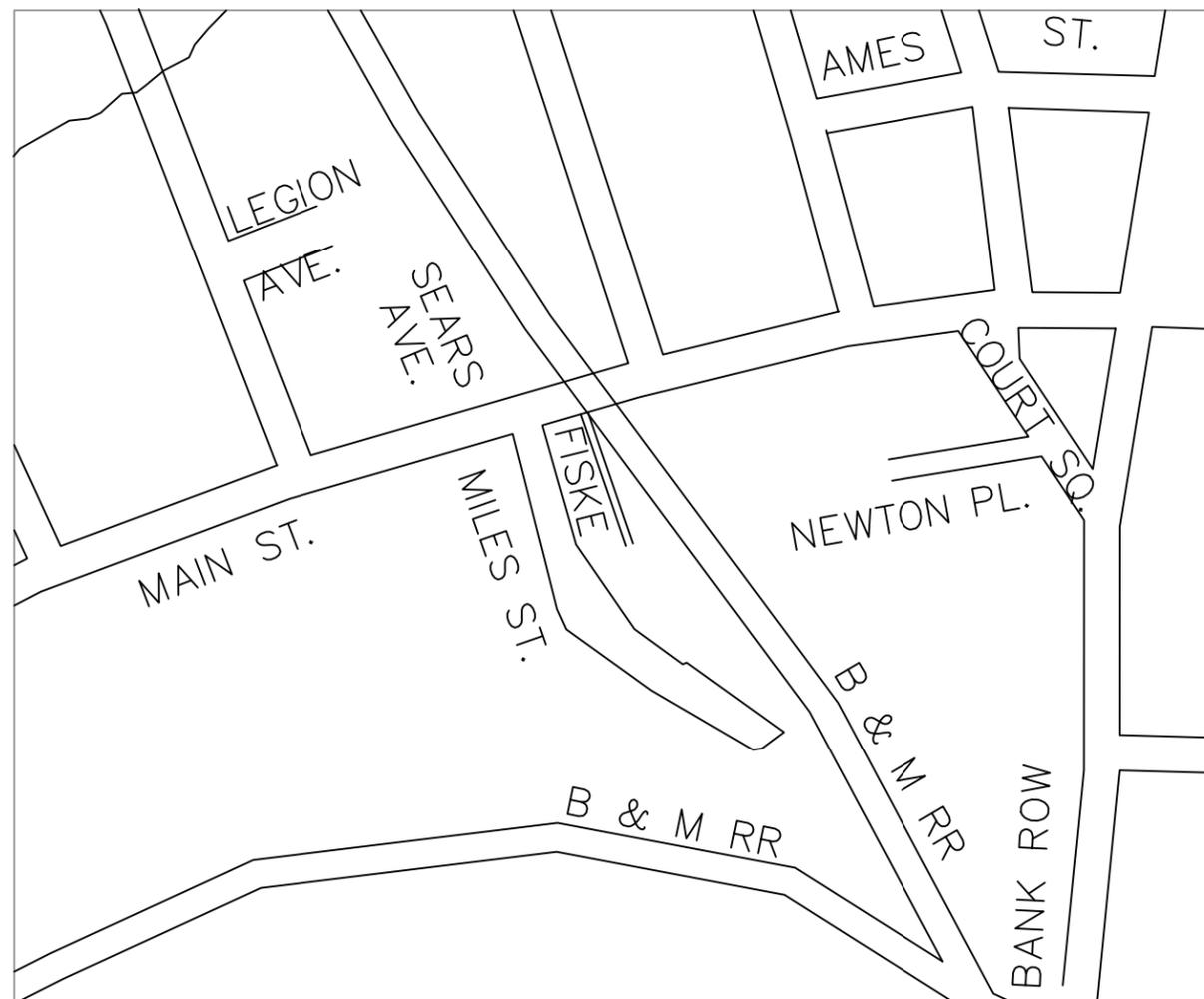
**Greenfield Department of
Public Works
Engineering**

189 Wells Street
Greenfield, MA 01301
Phone: (413) 772-1528

SHEET	DRAWING
G1	COVER
C1	DESIGN
D1	DETAILS

NOTES:

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROTECTING ALL EXISTING UTILITIES IN PLACE TO INCLUDE THE LIGHT POSTS AND CONDUIT, AND THE CITY WILL REMOVE EXISTING TREES, SHRUBS AND VEGETATION IMPACTING CONSTRUCTION OF THE RETAINING WALL PRIOR TO THE START OF WORK.



LOCUS N.T.S.

MAYOR
ROXANN WEDEGARTNER

DIRECTOR OF PUBLIC WORKS
MARLO WARNER

ENGINEERING SUPERINTENDENT
ALAN TWAROG

DATE				
COMMENTS				
REV. #				

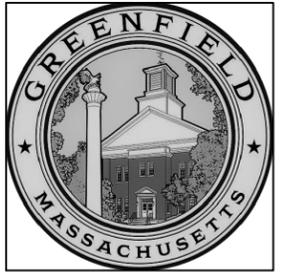
Scale N.T.S.

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FISKE AVE.
RETAINING WALL
REPLACEMENT

G1

Designed by: IH	Date: 08-18-2020	SHEET: 1 OF 3
Drawn by: IH		
Checked by: AT		



**Greenfield Department of
Public Works
Engineering**

189 Wells Street
Greenfield, MA 01301
Phone: (413) 772-1528

DATE	REV. #	COMMENTS



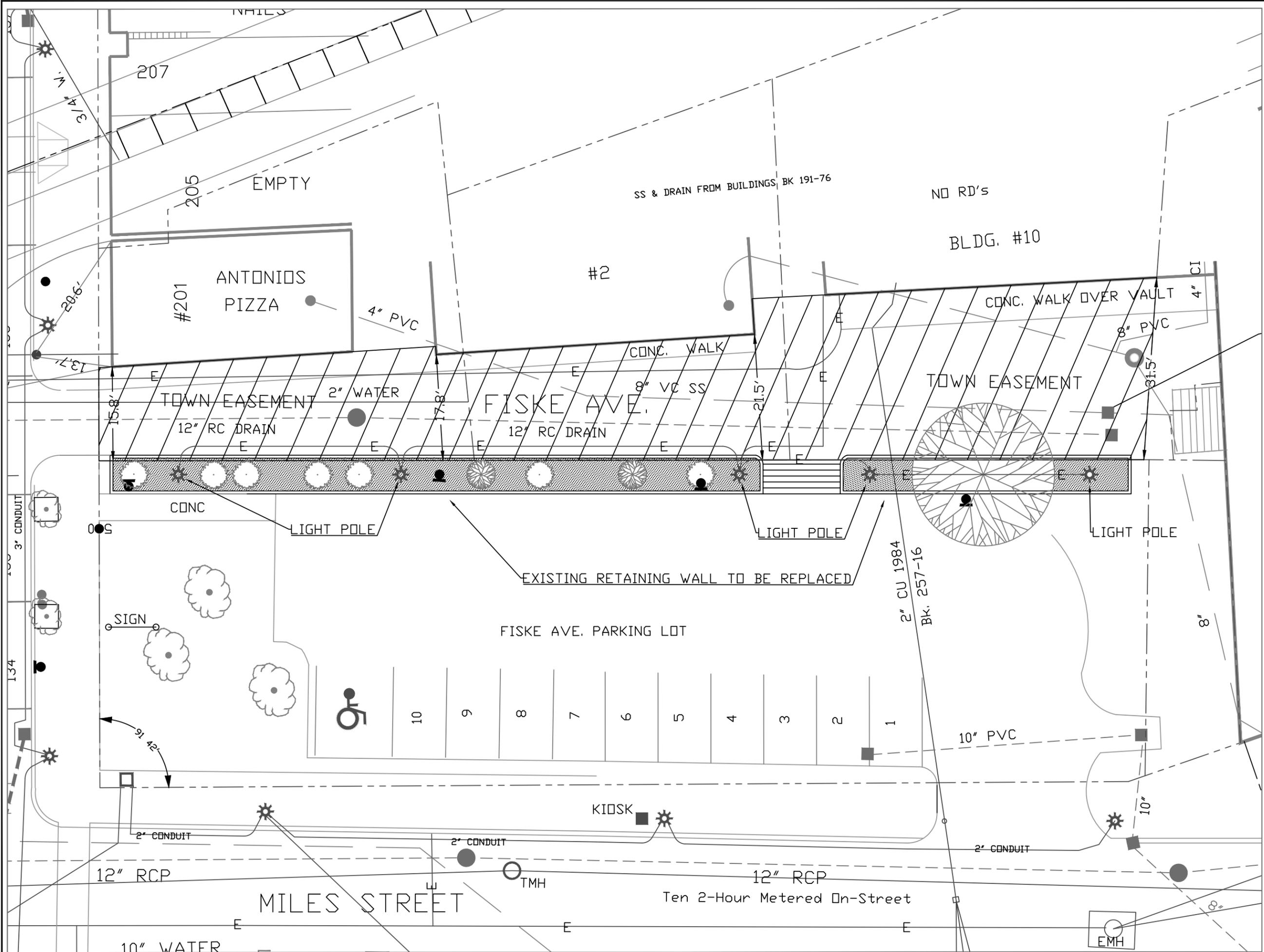
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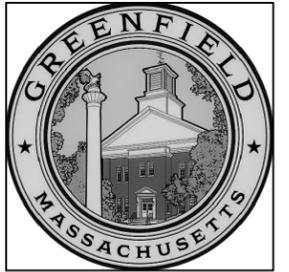
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**FISKE AVE.
RETAINING WALL
REPLACEMENT**

C1

Designed by: IH	Date: 08-18-2020	SHEET: 2 OF 3
Drawn by: IH		
Checked by: AT		





**Greenfield Department of
Public Works
Engineering**

189 Wells Street
Greenfield, MA 01301
Phone: (413) 772-1528

DATE

COMMENTS

REV. #

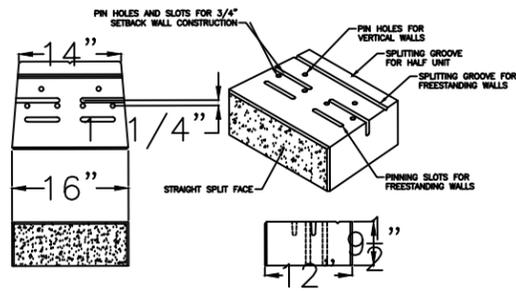
Scale N.T.S.

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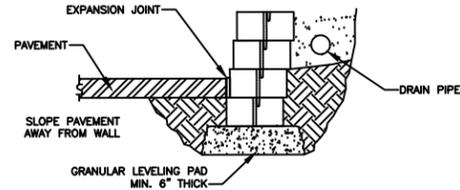
**FISKE AVE.
RETAINING WALL
REPLACEMENT**

D1

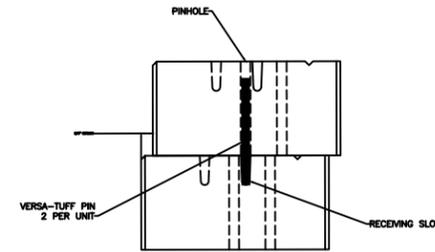
Designed by: IH	Date: 08-18-2020	SHEET 3 OF 3
Drawn by: IH		
Checked by: AT		



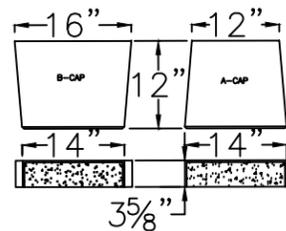
VERSA-LOK UNIT
UNIT DIMENSIONS



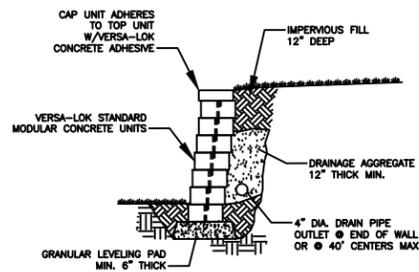
PAVEMENT AT BASE OF WALL



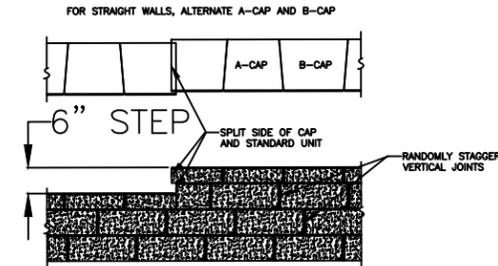
PINNING DETAIL
CROSS SECTION



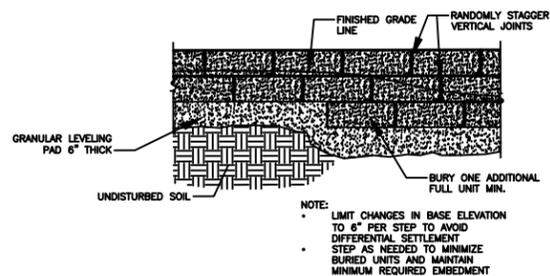
VERSA-LOK CAP UNITS
UNIT DIMENSIONS



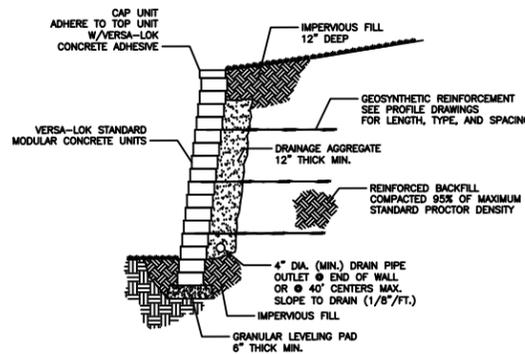
TYPICAL SECTION-UNREINFORCED RETAINING WALL
SCALE: NONE



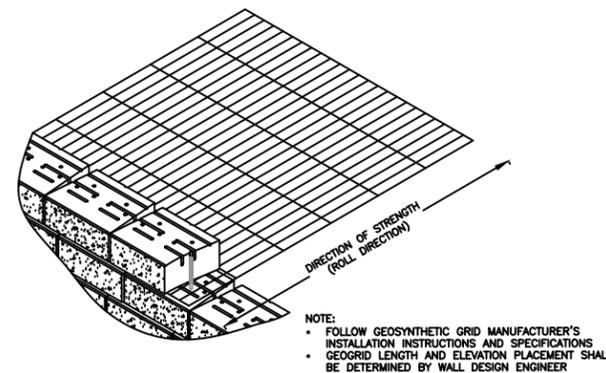
CAPPING DETAIL-PROFILE
STEP AT TOP OF WALL



STEPPING BASE DETAIL
SCALE: NONE



TYPICAL SECTION-REINFORCED RETAINING WALL
MODULAR CONCRETE UNIT



GEOSYNTHETIC INSTALLATION DETAIL