

Project Manual

Hudson Dog Park

Town of Hudson
Park Commission-Division of Recreation
78 Main Street
Hudson, Massachusetts 01749



Bid Documents

May 16, 2025

Prepared by:

LANDSCAPE ARCHITECT

Kyle Zick Landscape Architecture, Inc.
4228 Washington Street, Boston, MA 02131
(617) 451-1018



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HUDSON DOG PARK INVITATION TO BID

HUDSON DOG PARK

The Town of Hudson, Park Commission-Division of Recreation in Hudson, Massachusetts invites sealed proposals from Contractors for the **Hudson Dog Park at the Sauta Athletic Field Complex** in Hudson, Massachusetts. The work includes but is not limited to the construction of a new dog park with chain link fencing, asphalt pathways, concrete walkways, parking, planting, and furnishings. General Bids will be accepted until **12:00PM on Monday June 9, 2025**. The estimated cost of the work is \$400,000. Anticipated Project Construction Schedule – Start: September 2025. End: No later than May 31, 2026.

Bidders may obtain bid documents online at www.townofhudson.org/recreation/bid-documents starting **Friday, May 16, 2025 after 12:00 PM**. The drawings in PDF format are the official documents to be used for bidding purposes. The bidder shall acknowledge the receipt of the bid documents in digital form. It is the responsibility of the bidder to review all bid documents included in digital form. It is the responsibility of the bidder to print the drawing set to scale. The contractor shall verify scale accuracy prior to bidding. Any discrepancies in the bid submission due to skewed drawing scales and other inaccuracies are the sole responsibility of the bidder.

Each general bid shall be accompanied by a bid deposit in the form of a bid bond, or cash, or a certified check on, or a treasurer's or cashier's check issued by a responsible bank or trust company, payable to the Town of Hudson the amount of five percent (5%) of value of the bid. Bid deposits will be dealt with as provided in Massachusetts General Laws, Chapter 30 & 39M.

Bids shall be made on the basis of the Minimum Wage Rates as determined by the Commissioner of Labor and Industries, Pursuant to the Provisions of Chapter 30 & 39M inclusive of Massachusetts General Laws, a copy of which is attached to and is made a part of the Contract.

Bidders' selection procedures and contract award shall be in conformity with applicable statutes of the Commonwealth of Massachusetts.

50% Labor and Materials payment bonds in the full amount of the contract price will be required from the successful bidder.

The Awarding Authority reserves the right to reject any or all general bids, if it be in the public interest to do so.

Town of Hudson, MA
Park Commission-Division of Recreation

END OF SECTION



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INSTRUCTION TO BIDDERS

PART 1 – GENERAL

1) RECEIPT AND OPENING OF BIDS

- A. General Bids will be accepted by the Town of Hudson via hard copies in sealed envelopes until **12:00PM on Monday, June 9, 2025.**
- B. All bids must be hard copies submitted in sealed envelopes and clearly labeled “Hudson Dog Park”, submitted to:
Town of Hudson – Park Commission
Division of Recreation Attn: Steven Santos
78 Main Street
Hudson, MA 01749
- C. All required bid forms must be completed and submitted via hard copies, to be included in the single sealed envelope. The Bidder must fill-in all required fields and signatures manually.
- D. Bid Security Deposit shall be at least five percent (5%) of the greatest possible bid amount. Bid Bonds issued by a surety company must be uploaded with the other required forms. Bidders providing bid bonds in the form of cash or check must complete and upload the Bid Bond Affidavit Form.
- E. The Bidder must enter their bid price as a numeric, whole dollar value only with no punctuation.
- F. Bidder must acknowledge any issued addendum on the bid form.
- G. If a bid is submitted prior to an Addendum being issued, it is the responsibility of the Bidder to review the addendum, retract the bid, acknowledge all addenda, and re-submit the bid. If a Bidder fails to acknowledge all addenda their bid may be rejected by the Awarding Authority.
- H. Timely submission is the full responsibility of the Bidder. It is the Bidder’s responsibility to review and confirm that their bid has been submitted to the Town and/or retracted and that the bid is 100% true, complete, and accurate.

2) MODIFICATION OF BIDS AND ADDENDA

Any bidder may withdraw his/her bid by written request at any time prior to the advertised time of opening. Bids, amendments to bids, or withdrawals received by fax will not be accepted. No bid may be withdrawn for a period of thirty (30) days from the date and time of the bid opening, Saturdays, Sundays, and legal holidays excluded unless by mutual consent of the parties.

Properly identified bids received prior to the time of the opening will be securely kept unopened. If any changes are made to the Invitation for Bids (IFB) an addendum will be issued. All addenda will be posted on the website no later than June 4, 2025 by 12:00P.M.



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3) PRICES

In the event there is a discrepancy between the price written in words and written in figures, the price written in words shall govern. After the bid opening, a bidder may not change any provisions of the bid in a manner prejudicial to the interests of the Town or fair competition.

Minor informalities will be waived or the bidder will be allowed to correct them. If a mistake and the intended bid are clearly evident on the face of the bid document, the mistake will be corrected to reflect the intended correct bid, and the bidder will be notified in writing; the bidder may not withdraw the bid. A bidder may withdraw a bid if a mistake is clearly evident on the face of the bid document, but the intended correct bid is not similarly evident.

4) DESCRIPTION

The Town of Hudson in Hudson, Massachusetts, the Awarding Authority, invites sealed bids for the Hudson Dog Park project.

5) ALTERNATES

NOT USED

6) TIME OF PERFORMANCE

The bidder must agree to fully complete the project within the time limit stated in Owner-Contractor Agreement. The bidder must further agree that s/he will, within ten (10) days of the date of the Notice of Award, submit to the Owner, Owner's Project Manager and Landscape Architect, a baseline Critical Path Method (CPM) schedule showing the proposed execution of the project including, but not limited to, submittals and shop drawings, closeout, procurement/buy-out and lead times and deliveries.

7) INSURANCE REQUIREMENTS

The Contractor shall carry and continuously maintain until completion of the Contract, insurance as specified in the Supplemental General Conditions and in such form as shall protect him performing work covered by this Contract, or the Town of Hudson and its employees, agents and officials, from all claims and liability for damages for bodily injury, including accidental death, and for property damage, which may arise from operations under this Contract. The Contractor covenants and agrees to hold the Town of Hudson and its employees, agents, and officials harmless from loss or damage due to claims for personal injury and/or property damage arising from, or in connection with operations under this Contract.

1. Refer to Exhibit B for insurance requirements
2. Town of Hudson, Kyle Zick Landscape Architecture, Inc. (KZLA) shall be listed as Additional Insured with a Waiver of Subrogation on the insurance policy for this project.

8) PREVAILING WAGE

Services performed under this bid are subject to minimum wages to be paid for all labor on the project are established in a schedule issued by the Department of Labor and Workforce Development, in accordance with Chapter 30 of the M.G.L., as amended, said schedule being made a part of the Contract Documents and is included herein. All bids prices must be based on the payment of the prevailing wages included on the attached schedule and the selected bidder will be required to submit payroll reports indicating compliance with prevailing wage law.



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9) TAXES

Purchases made by the Town of Hudson are exempt from payment of Federal Excise Taxes and any such taxes must not be included in bid prices. A Federal Excise Tax Exemption Certificate will be furnished to the successful Bidder on request.

The Town of Hudson is exempt from payment of Massachusetts Tax on Retail Sales and will furnish the necessary exemption certificate to the successful Bidder on request. No sales tax shall be included in prices offered to the Town of Hudson.

10) BID SECURITY

Each bid must be accompanied by a certified check, a bid bond, cash, a treasurer's, or cashier's check, payable to the Owner, in the amount of five percent (5%) of the full bid price. Such checks will be returned to all except the three lowest responsible and eligible bidders within five days, Saturdays, Sundays, and legal holidays excluded, after the opening of bids, and the remaining checks will be returned promptly after the Owner and the accepted bidder have executed the Contract, or if no notice of intent to award has been presented to the selected contractor within 30 days, Saturdays, Sundays and holidays excluded, after the date of the opening of bids, upon demand of the bidder at any time thereafter.

11) LIQUIDATED DAMAGES FOR FAILURE TO ENTER CONTRACT

The successful bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within 10 days after he/she has received notice of the acceptance of his/her bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, a portion of security deposited with his/her bid, but the amount forfeited shall not exceed the difference between his/her bid price and the bid price of the next lowest responsible and eligible bidder. In case of death, disability, bona fide clerical or mechanical error of a substantial nature, or other similar unforeseen circumstances affecting the bidder, his/her bid deposit will be returned.

12) SAFETY REQUIREMENTS

Contractor shall be responsible for all safety measures needed during the work on the Town's property. Note, pursuant to G.L. c. 30, § 39S all contractor personnel employed on the work site must have completed a course in construction safety and health approved by the U.S. Occupational Safety and Health Administration (OSHA) and must provide the Owner with documentation of such successful completion in conjunction with contract submission.

13) BIDDER'S QUALIFICATIONS

It is the intention of the Owner not to award this Contract to any Bidder who does not furnish evidence satisfactory to the Owner that he/she has the ability, skill, integrity and experience in this class of work and that he/she has sufficient capital and plant to enable him/her to prosecute the same successfully and to complete it within the specified time.

Bidders shall possess a demonstrated expertise in General Contracting including projects of similar size and magnitude. The Bidder shall also possess a record of successfully completing projects on time and within budget.

Contractor is to provide completed project reference sheets demonstrating similar project experience for at least Three (3) similar projects completed within the last five (5) years. Similar project experience will be defined as projects similar in scope to the description of work defined in the Scope of Services. The Awarding Authority reserves the right to contact some or all of these references in addition to other references of which it becomes



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aware.

In determining the skill, ability, and integrity of the responsible and eligible bidders the following elements will be considered: whether the Bidder has (a) previously defaulted on, failed to perform properly, or failed to complete on time contracts of similar nature; (b) habitually and without just cause neglected payment for material or to employees; (c) a permanent place of business; (d) adequate plant and equipment to do the Work properly; (e) a suitable financial status to meet the obligations incident to the Work; (f) appropriate technical experience; (g) labor force that can work in harmony with all other elements of labor employed; and (h) demonstrated ability to work in harmony with daily operations without negatively impacting the offices or residences.

14) AWARD AND CONTRACT:

The Town of Hudson reserves the right to reject any bid or portion of a bid, to waive any informality in a bid, and to award the contract by items or in total to the "the lowest responsible and eligible bidder". Such a bidder shall possess the skill, ability and integrity necessary for the faithful performance of the work, shall be able to furnish labor that can work in harmony with all other elements of labor employed, or to be employed, in the work, and shall otherwise comply with all applicable provisions of law.

A Notice of Acceptance of the Bid will be mailed or furnished to the successful bidder within fourteen (14) days of the bid opening. A Town of Hudson Contract will follow the written Notice of Award. Refer to Exhibit B and C attached.

15) CONTRACTOR'S 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. This guarantee shall be for a period of **two (2) years** from and after the date of completion and acceptance of the Work.

If at any time within the said period of guarantee any part of the Work requires repairing, correction or replacement, the Owner may notify the contractor in writing to make the required repairs, corrections or replacements. If the Contractor neglects to commence making such repairs, corrections or replacements to the satisfaction of the Owner within seven (7) days from the date of receipt of such notice, or having commenced fails to prosecute such Work with diligence, the Owner may employ other persons to make said repairs, correction or replacements, and charge the costs, including compensation for additional professional services, to the Contractor.

16) LAWS AND REGULATIONS

The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

17) INFORMATION NOT GUARANTEED

All information given in the Contract Documents relating to subsurface and other conditions, natural phenomena, existing pipes, and other structures is from the best sources at present available to the Owner. All such information is furnished only for the information and convenience of bidders and is not guaranteed.

It is agreed and understood that the Owner does not warrant or guarantee that the subsurface or other conditions,



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natural phenomena, existing pipes, or other structures encountered during construction will be the same as those indicated in the Contract Documents.

If is further agreed 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 Owner or the Engineer, arising from or by reason of any variance which may exist between the information made available and the actual subsurface or other structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

18) EXISTING CONDITIONS AND OBLIGATION OF BIDDER

Each bidder must familiarize himself fully with the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. Insofar as possible the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other Contractor.

At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Contract Documents (including all addenda).

The failure or omission of any bidder to examine any form, instrument, or document shall in no way relieve any bidder from any obligation with respect to his bid.

19) ADDITIONAL INFORMATION:

Questions regarding this bid should be directed in writing to Kyle Zick Landscape Architecture, Inc. Contact, Rob Barella, via email at rbarella@kylezick.com. All inquiries must be received from General Bidders no later than **12:00 P.M. on June 2, 2025** and responses to all inquiries will be issued to all vendors of record no later than **June 4, 2025 at 12:00 P.M.**

20) PRE-BID SITE WALK:

A pre-bid site walk will be held at 10:00 A.M. on May 28, 2025. This walk is not mandatory.

21) REQUIRED DOCUMENTS FOR GENERAL BID:

BID DEPOSIT (in the amount of 5% of the bid). Bidders to submit Form for General Bid, Prevailing Wage Compliance, Reference List, Certificate of Insurance, Certificate of Non-Collusion, Certificate of Tax Compliance, Certificate of Authority, Equal Opportunity Certification, Labor Harmony and OSHA Training Certification.

END OF SECTION



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FORM FOR GENERAL BID

TOWN OF HUDSON
HUDSON DOG PARK

Town of Hudson
78 Main Street
Hudson, MA 01749

Dear Town of Hudson:

A. Basic Price

The undersigned, having visited the site of the above project and having familiarized myself with the local conditions affecting the cost of the work and with the contract documents, including Amendments and Addenda Nos. _____, hereby proposes to furnish all labor, materials, tools, equipment, insurance, permits, taxes, and to do and lawfully perform all things as provided in the specifications, all in accordance with the contract documents, for the sum of:

Dollars, \$ _____

B. The undersigned agrees that, if s/he is selected as general contractor, he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the Awarding Authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of the contract price, the premiums for which are to be paid by the general contractor and are included in the contract price; provided however, that if there is more than 1 surety company, the surety companies shall be jointly and severally liable.

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

D. The undersigned as Bidder certifies that if this proposal is accepted, s/he will furnish to the Town of Hudson with the invoice for the material or equipment supplied two copies of any and all Material Safety Data Sheets applicable to such material or equipment, as required by M.G.L. Chapter 111F, so called "Right to Know Law".

E. The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this section, the work "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.

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



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G. Substantial Completion

Substantial completion no later than **May 1, 2026.**

H. Final Completion

Final completion no later than **May 31, 2026.**

Sincerely,

(Bidder)

By:

(Address of Bidder) (Title - Owner*, Partner*)

(Seal, if
Corporation)

By:

(If Corporation - Name and Office)

* If the business owned by the individual or partnership is conducted under a trade or assumed name, a certified copy of doing business under an assumed name should be annexed.



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BIDDER'S CERTIFICATION REGARDING PAYMENT OF PREVAILING WAGE RATES

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

DATED: _____ NAME OF BIDDER: _____

BY: _____

NAME: _____

TITLE: _____



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REFERENCES

Notice to Bidder: Failure to provide the following information will result in a non-responsive bid. Attach additional sheets as needed.

List three or more contracts on which you served as General Contractor within the past five (5) years for work of similar size and scope to this project as required in the Specifications in this Invitation For Bids.

Reference 1

Scope of Contract: _____

Company or Entity _____

Contact Name & Phone # _____

Amount of Contract: _____

Reference 2

Scope of Contract: _____

Company or Entity _____

Contact Name & Phone # _____

Amount of Contract: _____

Reference 3

Scope of Contract: _____

Company or Entity _____

Contact Name & Phone # _____

Amount of Contract: _____

CERTIFICATE OF NON-COLLUSION

Chapter 30B, § 10

“The undersigned certifies under penalties of perjury that this proposal 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.”

Individual or Corporate Name of Proposer

Signature of Authorized Agent

Printed Name of Authorized Agent

Title

Date

Form must be signed by a duly authorized officer(s) eligible to sign contract documents for the firm. Consortiums, joint ventures, or teams submitting proposals will not be considered responsive unless it is established that all contractual responsibility rests solely with one contractor or one legal entity. The Proposal must indicate the responsible entity.

Contractors should be aware that joint responsibility and liability will attach to any resulting contract and failure of one party in a joint venture to perform will not relieve the other party or parties of total responsibility for performance.

CERTIFICATE OF TAX COMPLIANCE

Pursuant to Massachusetts General Law Chapter 62C, § 49A, I hereby certify under penalties of perjury that I have, to the best of my knowledge and belief, filed all state tax returns and paid all state taxes required under law.

Social Security or Federal I.D. Number

Signature: Individual or Corporate Officer

Title

Date

Please Print:

Corporate Name (as used for tax filing)

Address

P.O. Box

City, State, Zip Code

* Your Social Security Number or Federal Identification Number will be furnished to the Massachusetts Department of Revenue to determine whether you have met tax filing or tax payment obligations. Proposers who fail to correct their non-filing or delinquency will not have a contract or other agreement issued, renewed or extended. This request is made under the authority of M.G.L. Ch. 62C, § 48A.

Form must be signed by a duly authorized officer(s) eligible to sign contract documents for the firm. Consortiums, joint ventures, or teams submitting proposals will not be considered responsive unless it is established that all contractual responsibility rests solely with one contractor or one legal entity. The Proposal must indicate the responsible entity.

Contractors should be aware that joint responsibility and liability will attach to any resulting contract and failure of one party in a joint venture to perform will not relieve the other party or parties of total responsibility for performance.

CERTIFICATE OF AUTHORITY

Meeting of Board of Directors

At a meeting of the Directors of the _____ duly called
(Corporation)

and held at _____ on the _____ day of

_____, in the _____ year at which a quorum was present and acting, it

was voted, that _____ the _____ of this
(Name) (Title/position)

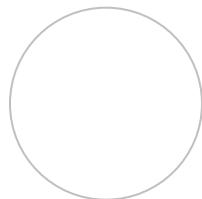
Corporation is hereby authorized and empowered to make, enter into, sign, seal and deliver,
on behalf of this Corporation a Proposal and subsequent Contract for

(brief description)

with the Town of Hudson, and any performance and payment bonds (each in the amount of the
Contract) in connection with such Contract, if applicable.

*I hereby certify that the above is a true and correct copy of the record, that said vote has
not been amended or repealed and is in full force and effect as of this date, and that*

*_____ is a duly elected _____ of
this Corporation.*



Clerk or Secretary of the Corporation

If a corporation, attach
certificate of vote or apply
corporate seal here)

EQUAL OPPORTUNITY CERTIFICATION

Pursuant to 28 CFR Part 42.204 (d), I certify that my employment practices comply with Equal Opportunity Requirements and complies with 28 CFR Part 42.202.; that my organization complies with the Americans with Disabilities Act.

Individual or Corporate Name of Proposer

Signature of Authorized Agent

Printed Name of Authorized Agent

Title

Date

Form must be signed by a duly authorized officer(s) eligible to sign contract documents for the firm. Consortiums, joint ventures, or teams submitting proposals will not be considered responsive unless it is established that all contractual responsibility rests solely with one contractor or one legal entity. The Proposal must indicate the responsible entity.

Contractor should be aware that joint responsibility and liability will attach to any resulting contract and failure of one party in a joint venture to perform will not relieve the other party or parties of total responsibility for performance.

LABOR HARMONY AND OSHA TRAINING CERTIFICATION

The undersigned certifies that:

1. We are able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work;
2. 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. All employees to be employed in the work subject to this bid 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: Individual or Corporate Officer

Date

SECTION 01 11 00: SUMMARY OF WORK

PART 1 – GENERAL

1.01 LOCATION

- A. Site is located at Sauta Fields, 539 Main Street in Hudson, MA.

1.02 GENERAL REQUIREMENTS

- A. The General Conditions, Supplementary Conditions and applicable parts of Division 01 General Requirements are all included as part of this Section. The Contractor is required to examine all other sections of the specifications for requirements that may affect the work of this Section. The Contractor is also required to coordinate the Work with that of all trades affecting or affected by the Work of this Section, and to cooperate with such trades to assure the continued progress of the Work.
- B. The intent of the Contract Documents is to require that the Contractor provide all material, labor and equipment needed in order to furnish a complete Project, and that all of the material, labor and equipment be furnished complete in every respect.

1.03 SCOPE OF WORK

- A. Work covered by this contract includes but may not be limited to site-work; construction; re-construction; alterations; remodeling or repair of the public works Project described in this paragraph 1.03 including the following major work:
 1. Installation of asphalt and concrete pavement
 2. Installation of wood chip surfacing
 3. Excavation and backfill for water line and electrical conduit
 4. Installation chain link fence
 5. Installation of plantings
 6. Installation of site furnishings
 7. Installation of site signage
 8. Substantial Completion date is November 15, 2025
 9. Final Completion date is May 15, 2026

1.04 DOCUMENTATION

- A. Contractor shall cooperate with the Owner and Landscape Architect to record any and all changes to existing conditions or proposed work that deviate from the Contract Documents. The Contractor shall furnish all recorded changes to the Landscape Architect to be used for As-Built documents.

1.05 NOISE CONTROL

- A. The Contractor shall adhere to the Town ordinances for Noise Control throughout the construction period.
- B. No construction shall occur between 7pm to 7am Monday through Friday, or any time on Saturday or Sunday. Any exemption to prohibited construction hours must be authorized by a Town representative.
- C. Contractor shall not permit engine idling on the job site. This shall be enforced through random, unannounced periodic inspections.

END OF SECTION

SECTION 01 33 00: SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SCOPE OF WORK

- A. The work to be performed under this Section shall include the compilation and submittal of all required shop drawings, manufacturer's cuts, specifications, and certifications of all materials and equipment for the Owner's Representative's approval. Actual product samples may also be required as stipulated in the technical specifications sections.
- B. All submittals shall be submitted within four (4) weeks after the award of the contract and may be made and distributed digitally with the approval of the Owner via email or File Transfer Protocol (FTP) site.

1.03 GENERAL SUBMITTAL PROCEDURES

- A. The Owner's Representative has 10 days to review the submittals and return them to the Contractor, also in PDF format.
- B. Transmittal: Include a transmittal with each submittal identifying the item clearly. All transmittals shall coordinate with these Specifications.

PART 2 – PRODUCTS

2.01 REQUIREMENTS

- A. References are made throughout the Specifications and Drawings where submittals are required. All finishes, colors, and patterns are to be reviewed and approved by submittal or field sample.
- B. Where the Contractor's intention is to furnish the materials or equipment as specified, a list of all such elements, by Specification section, shall accompany the submittals so that the entire submittal is complete for the project.

PART 3 – EXECUTION

3.01 SUBMISSIONS

- A. Submit all documents and data distributed digitally.
- B. Submit all required product or material samples concurrent with the materials/equipment information manuals described above. Each submittal shall reference its appropriate specification section, part and paragraph.

END OF SECTION

SECTION 01 56 00: TEMPORARY BARRIERS & ENCLOSURES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 GENERAL REQUIREMENTS

- A. All references to products by manufacturer, trade name, or performance specifications bearing the connotation "or approved equal" shall be as determined by the Owner's Representative and the Town, per MGL c. 30 s. 39M, Part b, Criteria 1.

1.02 WORK INCLUDED

- A. Provide all labor, equipment, implements and materials required to furnish, install, construct and perform all site improvements complete as shown on the Contract Drawings and specified herein; to include, but not be limited to the following:
 1. Temporary Construction Perimeter Fencing

1.03 REFERENCES

- A. Examine all other Sections of the Specifications and all Drawings for the relationship of the work under this Section and the work of other trades. Cooperate with all trades and all departments of the City and coordinate all work under this Section therewith.
- B. The following related items are included under the Sections listed below:
 1. Division 01 Section: TEMPORARY EROSION & SEDIMENT CONTROL
 2. Division 02 Section: SITE PREPARATION & DEMOLITION
 3. Division 10 Section: TRAFFIC SIGNAGE
 4. Division 31 Section: EARTH MOVING
 5. Division 32 Section: PLANTING

1.04 SUBMITTALS

- A. Shop Drawings and Samples
 1. Provide complete Shop Drawings and/or samples and catalog cuts for all items called for on the Drawings and as specified and in accordance with applicable requirements under Division 01.

1.05 PRODUCT DELIVERY, STORAGE & HANDLING

- A. Deliver materials in manufacturer's original unopened and undamaged packages with labels legible and intact.
- B. Store materials in unopened packages in a manner to prevent damage from the environment and construction operations.
- C. Handle in accordance with manufacturer's instructions.
- D. The Contractor shall be solely responsible for all materials stored on the site once delivered. Any materials left unsecured at the job site shall be solely at the contractor's own risk.

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1.06 DEFINITIONS

- A. The following items are included herein and shall mean:
 1. NCLMA: National Chain Link Manufacturers' Association
 2. OSHA: Occupational Safety and Health Act.

PART 2 – MATERIALS

2.01 BARRIERS AND BARRICADES

- A. Provide barriers to prevent unauthorized entry to construction areas to allow for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations.
 1. Comply with standards and code requirements for erection of structurally adequate barriers.
 2. Install barriers of a neat and uniform appearance.
 3. Provide graphics and signs warning of the hazard being protected against.
 4. Where appropriate and needed provide lighting, including flashing red or amber lights.
 5. Provide barriers at public rights-of-way and for public access to existing buildings when adjacent to construction operations.
- B. Provide barricades with blinking beacon light at all open trenches and other excavations.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

2.02 TEMPORARY CONSTRUCTION FENCING

- A. Prior to any excavation work the Contractor shall provide temporary construction fencing as shown on the Drawings and/or as required to completely protect the work area and injury to persons or property.
- B. The Contractor shall furnish and install temporary fencing of the following type in all areas where existing fencing lengths are inadequate to enclose the construction.
 1. Chain link fencing, six feet high minimum, fabricated from No. 9 gauge galvanized wire woven in a 2-inch diamond mesh with top salvage and having galvanized steel H or pipe intermediate and terminal posts. Post spacing shall not exceed eight feet on center. Cross bracing, reinforcing gates and other parts of fencing shall conform to standard Specifications of the National Chain Link Manufacturers Association. All posts shall be set into temporary concrete footings or on temporary chain link fencing stands as approved by the Owner's Representative.
- C. The contractor shall furnish and install matching gates equipped with suitable locks, other hardware, and, where necessary, provide access for construction apparatus or fire-fighting equipment. The Owner shall be provided with a copy of the key used for all locks.

2.03 TEMPORARY WORK IN PUBLIC WAYS

- A. Prior to commencing any work in public ways and other areas which are legally used by vehicles or pedestrians, the Contractor shall submit in writing the proposed methods of protection to the Official. Work shall not be commenced in these areas until written approval is received from the Official.
- B. In general, all excavations in public ways shall be protected by substantial barriers which will offer complete protection against accidents for pedestrian and vehicular traffic without interrupting the normal flow of traffic. All barriers must be properly lighted with electric- or battery-powered safety lights and must be maintained in good working order by the Contractor for the duration of the time such barriers are required.
- C. Trenches across sidewalks shall be completely covered with a temporary walkway, comprised of properly supported nominal 2-inch thick lumber laid with butt joints and covered with exterior grade plywood, one-half of an inch minimum thickness. Provide continuous 2 inch by 4 inch (nominal) rails and posts secured to the temporary walkway conforming to the requirements of the Occupational Safety and Health Act (OSHA).

- D. Wherever temporary chutes are to be extended over sidewalks or other pedestrian or vehicular traffic areas, the bottom and sides of the chutes shall be provided with continuous dustproof and weatherproof lining, applied to the exterior surfaces.
- E. The Contractor will be required to furnish, install, and maintain in good condition, at no increase in Contract Price or Contract Time, all other safety measures which in the judgment of the Official are required to protect the public from accidents due to work performed under this Contract. This requirement is supplementary to the Contractor's rights and obligations to provide and employ safety measures as s/he may deem necessary or as may be required by law or standard safety practices.

PART 3 – EXECUTION

3.01 BARRIERS, BARRICADES & ENCLOSURES

- A. Install temporary items as specified herein and in the Drawings or, where not specified, to level of quality suitable for the intended purpose as judged by the Owner's Representative.

3.02 REMOVAL OF TEMPORARY BARRIERS, ENCLOSURES & PROTECTIONS

- A. Remove temporary barriers, barricades, fencing, enclosures and protections as warranted by the progress of the Work and prior to Substantial Completion.
- B. Remove in-ground elements of all temporary barrier installations (if any) completely. Grade site as noted.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition at start of work or as specified elsewhere in the Contract Documents.

END OF SECTION

SECTION 01 57 13: TEMPORARY EROSION & SEDIMENT CONTROL

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

- A. Provide all work and take all measures to control soil erosion resulting from construction operations, prevent flow of sediment from construction site, and contain construction materials (including excavation and backfill) within protected working area as to prevent damage to any stream or wetlands.
 - 1. Compost filter sock (straw wattle)

1.03 REFERENCE

- A. The Contractor is responsible for ensuring that all work conducted at the Site, including but not limited to sediment and erosion control, complies with the Town Regulations. In addition, all work shall be conducted in accordance with "Processes, Procedures and Methods to Control Pollution Resulting from all Construction Activity", published by the United States Environmental Protection Agency.

1.04 SUBMITTALS

- A. Shop Drawings: Submit the following in accordance with Division 01 Section, SUBMITTAL PROCEDURES:
 - 1. Two weeks prior to the start of the work, submit to Owner's Representative, for review, a plan with detailed sketches showing the proposed methods to be used for controlling erosion during construction.

1.05 QUALITY ASSURANCE

- A. Use acceptable procedures, including use of water diversion structures, diversion ditches, settling basins, and sediment traps.
- B. Operations restricted to areas of work indicated on drawings and area which must be entered for construction of temporary or permanent facilities.
- C. If construction materials are washed away during construction, remove materials from fouled areas.
- D. Stabilize diversion outlets by means acceptable to Owner's Representative.
- E. Owner's Representative has authority to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and fill operations and to direct immediate permanent or temporary pollution control measures to prevent contamination of any stream or wetlands, including construction of temporary berms, dikes, dams, sediment basins, sediment traps, slope drains, and use of temporary mulches, mats, or other control devices or methods as necessary to control erosion.

PART 2 – PRODUCTS

2.01 FILTER TUBE

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

PART 3 – EXECUTION

3.01 GENERAL

- A. Do not discharge chemicals, fuels, lubricants, bitumen, raw sewage, and other harmful waste into or alongside any body of water or into natural or man-made channels.

3.02 GENERAL INSTALLATION PROCEDURES

- A. In the event that sedimentation or siltation prevention measures used by the Contractor prove to be inadequate the Contractor shall be required to adjust their operations to the extent necessary to prevent such sedimentation or siltation from occurring. Any damage or degradation caused by inadequate controls must be restored by the Contractor at no additional cost to the Owner.
- B. All sedimentation and erosion control measures shall be in accordance with all permits, regulatory requirements, plans and specifications.
- C. Straw wattle and inlet protection shall be installed prior to the start of construction activities. Locate sedimentation barriers, surrounding stored material, approximately 6 feet from material.
- D. The Contractor shall keep all drains clear of mud, silt, debris, or other objectionable materials resulting from construction operations.
- E. The Contractor shall minimize the amount of bare earth exposed at any one-time during construction and minimize the length of time bare earth is exposed.
- F. Baled hay and filter materials shall be placed to form temporary water stops, dams, diversions, dikes, berms, and for other uses connected with water pollution control. As directed by the Owner's Representative bales may be disposed by the Contractor as best suits field conditions and requirements.
- G. Additional erosion control in the form of hay bales, filter tube, silt fence, etc. shall be employed by the Contractor as required to prevent erosion of topsoil or other materials.
- H. Install sedimentation barriers in all locations as directed, surrounding base of all deposits of stored excavated material outside of disturbed area, and where directed by the Owner's Representative.
- I. Construct earth berms or diversions to intercept and divert runoff water from critical areas.
- J. Protect catch basins from sedimentation by installing straw wattle around the basin or siltation fabric under grating casting.
- K. Discharge silt-laden water from excavations onto filter fabric mat and/or straw wattle or sediment traps to ensure that only sediment-free water is returned to waterways.
- L. Do not place excavated soil material adjacent to waterway in manner that will cause it to wash away by high water or runoff.
- M. Prevent damage to vegetation by excessive watering or silt accumulation in the discharge area.
- N. Do not dump spoiled material into any salt marsh, streams, wetlands, surface waters, or unspecified locations.

- O. Prevent indiscriminate, arbitrary, or capricious operation of equipment in streams, wetlands, or surface waters.
- P. Do not pump silt-laden water from trenches or excavations into salt marsh, surface waters, streams, wetlands, or natural or man-made channels leading thereto.
- Q. Prevent damage to vegetation adjacent to or outside of construction area limits.
- R. Do not dispose of trees, brush, debris, paints, chemicals, asphalt products, concrete curing compounds, fuels, lubricants, insecticides, wash-water from concrete trucks or hydroseeders, or any other pollutant in streams, wet-lands, surface waters, or natural or man-made channels leading thereto, or unspecified locations.
- S. Do not alter flow line of any stream unless indicated or specified.
- T. Erosion control shall be reviewed regularly to keep in good condition especially following any rain events.
- U. Clean and dispose of debris from sedimentation barriers on a weekly basis.
- V. Upon completion of work and upon approval of Owner's Representative, remove and dispose of sedimentation barriers.

3.03 FILTER TUBE INSTALLATION

- A. Compost filter tube may be place on bare soil, grass, erosion control blankets, or paved surface.
- B. Install perpendicular to storm water flow, across slope, swale, ditch, or channel.
- C. Anchor to the ground using a 2-inch by 2-inch (nominal) 36-inch long hardwood post every 10 feet on center. Under concentrated flow conditions stake posts every 5 ft. on center.
- D. Stakes shall be driven through the center of the Filter Tube and installed a minimum of 12 inches into the existing soil.
- E. Edges of the Filter Tube shall be turned upslope to prevent flow around the ends of the Filter Tube.
- F. For 2:1 slopes additional Tubes may be placed every 20-50 feet along the slope to further reduce erosion.
- G. 12-inch Filter Tubes may be used for stormwater ditch checks and small channels (additional staking required, every 4 feet on center).
- H. Installed height of the Filter Tube in the field shall be 12-inch diameter equals effective height of 9.5 inches.
- I. Routinely inspect Compost Filter Tube after installation and runoff events to ensure adequate hydraulic flow-through, proper function and performance. Sediment should be removed once it reaches half the height of the Filter Tube.
- J. Contractor shall removal Filter Tube only upon Substantial Completion or approval by Owner's Representative. Unless otherwise directed by Owner's Representative or Owner, compost tubes can be emptied, compost spread on site, and tube disposed of offsite.

3.04 DUST CONTROL MEASURES

- A. 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, to minimize creation and dispersion of dust.

END OF SECTION

SECTION 01 71 23: CONSTRUCTION LAYOUT

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SCOPE OF WORK

- A. The work under this section shall consist of field staking the horizontal and vertical alignment of all essential features and proposed work, including sidewalks, fencing, utility structures, plantings, furnishings, and other related features as shown on the plans, by a Massachusetts-registered Professional Engineer or Land Surveyor. The Contractor shall familiarize himself with the existing conditions and shall be responsible for locating or re-establishing survey field ties, property lines, and benchmarks indicated on the plans.

PART 2 – MATERIALS

2.01 LAYOUT & STAKING

- A. The Contractor shall be responsible for furnishing all stakes, pins, and grade markings as required to implement the work of layout and staking and shall make all field adjustments ordered by the Owner's Representative at no extra cost to the Owner.
- B. Upon request by the Owner's Representative, the Contractor shall make available to the Owner survey instruments and operator necessary to check the proposed vertical and horizontal alignments at no extra cost.

PART 3 – EXECUTION

3.01 SURVEY LAYOUT

- A. The Contractor shall use the alignments shown on the plans to establish the layout of all proposed features and shall perform field adjustments as ordered by the Owner's Representative.
- B. All layout shall be by the dimensions noted on the Contract Drawings. Do not scale directly from the plans. If clarification regarding a dimension or intended layout procedure is required, contact the Owner's Representative.
- C. All dimensions marked on the Drawings with "+/-" or "(Confirm)" or "Verify in Field" are intended for confirmation of conformance to the expected conditions and (where applicable) that acceptable slopes and clearances are provided. Once layout has been established using other dimensions, the Contractor shall verify these dimensions (to within a tolerance of 1/2") and report any discrepancy to the Owner's Representative for acceptance or instruction regarding adjustment. These confirmation dimensions should not be used to layout elements.
- D. The Surveyor shall lay out the essential or necessary grades and locations of site furnishings, footings, pavements, utilities, structures, and other proposed elements. The surveyor shall verify the location of any existing spikes, stakes, pipes, drill holes, etc. and shall be responsible for their accuracy. Proposed features shall be located in relation to dimensions shown on the drawings and as adjusted by the Owner's Representative.
- E. The Contractor shall inform the Owner's Representative when the general layout is completed and shall not begin excavation until the Owner's Representative approves the various alignments. Any

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discrepancies encountered in field conditions shall be reported to the Owner's Representative immediately and shall be adjusted as directed.

- F. The Contractor shall be responsible for maintaining the correct vertical and horizontal alignment of all elements, which responsibility shall not be waived by the Owner's Representative's approval of basic layout and stakeout.

END OF SECTION

SECTION 01 78 00: CLOSEOUT DOCUMENTATION

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SCOPE OF WORK

- A. The work to be performed under this Section shall include the compilation and submittal of all required maintenance manuals, maintenance and repair products, warranty information, detailed procedures, product information, submittal records, as-built drawings, and certifications of all materials and equipment for the Owner's Representative's approval. Additional submissions may also be required as stipulated in the technical specification sections.
- B. Upon Final Completion of all park construction, the contractor shall submit: one digital copy of a park maintenance manual and of an as-built drawing set.
- C. The Town will not issue the final check for park retainage until the submittal and approval of the maintenance manual and as-built drawings.

PART 2 – SUBMITTALS

2.01 MAINTENANCE MANUAL

- A. The Maintenance manual shall be in PDF form with bookmarked sections, and shall include the following items:
 1. A letter from the contractor stating the period of warranty for all parts, materials, and workmanship, from the date of Final Completion.
 2. All product information, product directions, and warranties.
 3. List of all plant material and sizes of plant containers.
 4. Copies of all permits with signatures of inspectors.
 5. Contact information for all subcontractors including email addresses.
 6. A record of all submittals and dates of approvals.

2.02 MAINTENANCE KIT

- A. At the completion of construction, the Contractor shall provide to the Owner, a Maintenance Kit containing all touch-up paint, maintenance instructions, spare parts, and other maintenance materials provided by the manufacturers of all improvements.
- B. The Maintenance Kit shall be delivered in a single container clearly labeled with each item shall be identified as to the source.

2.03 AS-BUILT DRAWINGS

- A. As-Built drawing shall be a complete and accurate record that incorporate any and all changes to the construction plan set issued at the time of contract initiation. As-built drawings shall be clearly marked and annotated and shall include but not be limited to all field changes, change orders, and supplemental drawings provided by the Landscape Architect.
- B. As-Built Drawings shall include complete records of all water, drainage, and electric utilities installed, including sizing, location, and inverts of all drainage pipes and structures, and sizing and location of all water service lines and electrical conduits.

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PART 3 – EXECUTION

3.01 SUBMISSIONS

- A. Submit all documents and data as noted herein. The submittal is to be entire and complete, addressing all requirements listed above.

END OF SECTION

SECTION 02 41 00: SITE PREPARATION & DEMOLITION

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

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

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 1. Division 31 Section: EARTH MOVING
 2. Division 31 Section: SITE CLEARING

1.04 REFERENCES

- A. The following standards shall apply to the work of this Section.
 1. Massachusetts Department of Transportation (MassDOT): Standard Specifications for Highways and Bridges

1.05 PROTECTION

- A. Do not interfere with use of adjacent residences or facilities. Maintain free and safe passage to and from adjacent buildings and facilities or both and between them and the public way.
- B. The Contractor shall be solely responsible for making all necessary arrangements and for performing any necessary work involved in connection with the discontinuance or interruption of all public and private utilities or services.
- C. Cease operations and notify Owner immediately if safety of adjacent structures, workers, or the general public appears to be endangered. Take precautions to properly support structures and protect workers and general public. Do not resume operations until safety is restored.
- D. Prevent movement, settlement or collapse of adjacent services, sidewalks, driveways, and trees. Assume liability for such movement, settlement, or collapse. Promptly repair damage at no cost to the Owner. Furnish, erect, and maintain fences, planking, bracing, shoring, sheathing, lights barricades, warning signs, and guards as necessary for the protection of streets, sidewalks, and adjoining property.
- E. Trees that are damaged during construction shall be removed by the Contractor at their expense if instructed to do so by the Owner's Representative, and the Contractor shall pay the Town of

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Westborough for each tree judged by a Massachusetts Certified Arborist to be significantly damaged or injured, whether or not it is removed.

1.06 GENERAL REQUIREMENTS

- A. The Contractor shall secure a DIG SAFE permit number for the project to certify notification of gas, electrical and telephone utilities. All other affected utilities shall be contacted by the Contractor who shall secure notification receipts in accordance with requirements of Massachusetts law. The phone number is 811. Contractors shall notify "Dig Safe" of contemplated excavation, demolition, or explosive work in public or private ways, and utility company right-of-way or easement. This notification shall be made at least 72 hours prior to the work, but not more than sixty days before the contemplated work. Such notice shall set forth the name of the street or the route number of said way and an accurate description of the location and nature of the proposed work. The Owner's Representative requires that the notification be sent to "Dig Safe" by certified mail, with copies to the Owner. The Architect requires a copy of the signed receipt of the delivery. "Dig Safe" is required to respond to the notice within 72 hours from the time said notice is received by designating at the locus the location of pipes, mains, wires, and conduits. Contractor shall not commence work until "Dig Safe" has responded as noted above. The work shall then be performed in such a manner, and with reasonable precaution taken to avoid damage to utilities under the surface in said areas of the work.
 1. See Division 01 Section: PERMITS and Division 01 Section: ADMINISTRATIVE AND PROCEDURAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
- B. The Contractor shall, prior to any removal of rubbish or debris from the site, furnish written evidence satisfactory to the Owner's Representative that he has an approved dumping location for debris and/or spoil from his removals and excavation activities.
- C. On-site cleaning of materials for the purpose of salvage on the site shall not be permitted.
- D. The Contractor shall secure all necessary permits from the Town of Westborough before starting this project.
- E. The Town of Westborough shall have the right of first refusal on all removed materials, at the direction of the Owner's Representative. All materials refused by the Town shall become the property of the Contractor.
- F. For all earthwork, excavation, and removals within the driplines of protected trees (not limited to areas within designated tree protection fencing), the Owner's Representative must be present on the site or have specifically waived that obligation. Provide 48 hours' notice prior to commencement of all such work.

PART 2 – PRODUCTS

2.01 TEMPORARY CONSTRUCTION FENCING

- A. Temporary construction fencing shall be provided and paid for under as specified under Division 01 Section, TEMPORARY BARRIERS & ENCLOSURES.
- B. Site protection fencing shall include installation and maintenance. Installation shall be suitable to withstand the duration of the project. The Contractor shall be responsible for maintaining the site protection fence in good order and if necessary, must make any adjustments immediately to ensure site safety. The Contractor shall be responsible for maintaining a clean work site including debris, trash, and vegetative material removal along the temporary fence line throughout the duration of the project.

PART 3 – EXECUTION

3.01 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. Existing structures, monuments, vegetation, fencing, and utilities not designated to be removed shall be suitably protected from damage, including but not limited to existing pavements and curbs, site walls, lighting, fencing, concrete vault, manholes, and utility lines.
- B. Provide and install erosion and sedimentation control at all existing catch basins, manholes and all other utility structures as identified on the drawings. Protect public right-of-way from the entry of erosion and construction debris.

3.02 SALVAGE, STOCKPILE ON SITE, AND REUSE MATERIALS

- A. Materials indicated on the Contract Documents or designated by the Owner's Representative in the field to be salvaged shall be carefully removed, protected from damage, and put in temporary storage as follows:
 - 1. Salvaged material shall be stockpiled on-site in an area designated by the Owner's Representative.
 - a. Topsoil
 - b. Cut logs (greater than 6" dia.)
 - c. Boulders (greater than 18")

3.03 SALVAGE & STOCKPILE OFF-SITE

- A. Materials indicated on the Contract Documents or designated by the Owner's Representative in the field to be salvaged and stockpiled for the Owner shall be carefully removed, protected from damage, delivered to Westborough Department of Public Works at 131 Oak St, Westborough, MA (Contractor to coordinate with DPW staff for delivery) as follows:
 - 1. Salvaged material shall be stockpiled off-site in an area designated by the Owner's Representative. Salvage material shall include but not limited to the following:
 - a. Topsoil

3.04 REMOVAL AND DISPOSAL OF MATERIALS

- A. Materials indicated on the Contract Documents or designated by the Owner's Representative in the field to be removed shall be dismantled, removed, and legally disposed of off-site as indicated on the Contract Documents and as specified, performed, and paid for in this SECTION, SITE PREPARATION.
- B. Material resulting from the site preparation work and not scheduled to be salvaged and which is unsuitable for reuse on the project, shall become the property of the Contractor and shall be legally disposed of off-site.
- C. Debris, rubbish, and other material shall be disposed of promptly and shall not be left until final cleanup of site.
- D. Existing site structures indicated on the Contract Documents to be removed, shall be completely dismantled, and removed from the site.
- E. Sawcut pavements at the limits shown on the drawings prior to demolition.
- F. Removal of concrete walkways shall include subbase material. Park pathways may have varying "subbase" materials (ex. asphalt over concrete, which may be reinforced with rebar, over gravel) as some pathways were previously overlaid. Contractor shall be responsible for removing materials to stable subbase.

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3.04 EROSION CONTROL

- A. The Contractor shall comply with Town of Westborough regulations and shall plan and execute all operations, particularly those associated with excavation and backfilling, in such a manner as to prohibit excavated and exposed fill or other foreign material to be washed or otherwise carried into streets, drains, or waterways. The water quality of storm drains shall not be degraded due to construction operations.
- B. In the event that sedimentation or siltation prevention measures used by the Contractor provide to be inadequate the Contractor shall be required to adjust their operations to the extent necessary to prevent such sedimentation or siltation from occurring. Any damage or degradation caused by inadequate controls must be restored by the Contractor at no additional cost to the Owner.
- C. The Contractor shall keep all drains clear of mud, silt, debris, or other objectionable materials resulting from construction operations.
- D. The Contractor shall minimize the amount of bare earth exposed at any one time during construction and minimize the length of time bare earth is exposed.
- E. Baled hay and filter materials shall be placed to form temporary water stops, dams, diversions, dikes, berms, and for other uses connected with water pollution control. As directed by the Owner's Representative bales may be disposed by the Contractor as best suits field conditions and requirements.
- F. Sediment-laden water that is being pumped from trenches or excavations shall not be pumped directly into storm drains or water courses. Sedimentation tanks or other means acceptable to the Owner's Representative shall be used for this purpose.
- G. All sedimentation and erosion control measures shall be in accordance with all permits, regulatory requirements, plans and specifications.
- H. Inlet protection shall be installed prior to the start of construction activities.
- I. Additional erosion control in the form of hay bales, filter tube, silt fence, etc. shall be employed by the Contractor as required to prevent erosion of topsoil or other materials.
- J. Erosion control shall be reviewed regularly to keep in good condition especially following any rain events.

3.05 PROTECTION OF EXISTING TREES & VEGETATION

- A. The Contractor shall make every effort not to damage existing plant materials to remain. The Contractor is required to install protection as necessary to assure undamaged plant material and adjacent conditions.
- B. Vehicles shall not be parked within the dripline or where damage may result to trees to be saved. Construction materials shall not be stored beneath trees to be saved.
- C. Repair/replace vegetation that is damaged at no additional cost to Owner. Employ certified arborist to repair damaged trees.
- D. No dumping of any kind shall occur under the dripline of trees or shrubs to remain.

END OF SECTION

SECTION 10 14 53: TRAFFIC SIGNAGE

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

- A. The Work of this Section consists of all Site Improvements and related items as indicated on the Drawings and/or as included herein and but not necessarily limited to the following:
 1. Temporary construction sign
 2. Accessible "Reserved Parking" sign & "Van Accessible" sign

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 1. Division 32 section: EARTH MOVING
 2. Division 32 Section: SITE IMPROVEMENTS

1.04 REFERENCES

- A. The following standards shall apply to the work of this Section.
 1. United States Department of Transportation, federal Highway Administration
Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), latest edition.

1.05 SUBMITTALS

- A. At least thirty days prior to intended installation, the Contractor shall provide the following samples, shop drawings, and submittals in conformance with the requirements of Division 01 and as stated herein. Contractor shall not begin shop drawings until receiving Owner's Representative's review of proposed material. Contractor shall not order materials until receiving Owner's Representative's review of samples, certification, or test results. Delivered materials shall closely match the approved samples.
 1. Complete Shop Drawings for the following:
 - a. All signs: identify sign panel material/thickness, colors, typeface, and graphic layout.

1.06 COORDINATION

- A. The Work of this Section shall be completely coordinated with the Work of other Sections. Verify dimensions and work of other trades which adjoin materials of this Section before installing items specified.

1.07 WARRANTY

- A. Ten year warranty from date of acceptance on permanent signs against delaminating, fading, or rusting.

PART 2 – PRODUCTS

2.01 SIGN TYPES

- A. Temporary construction signs:
 - a. "Park temporarily closed during construction" signage (18" x 24")
- B. Permanent signs:
 - 1. MUTCD Accessible "Reserved Parking" sign & "Van Accessible" sign, as shown on Contract Drawings.

2.02 SIGN PANELS

- A. Sign panel shall be 0.080" engineering-grade reflective aluminum sheet. Corners shall be rounded. Size shall be as shown on the drawings and noted above.
 - 1. Engineering grade aluminum shall meet ASTM D4956 (Type I) retro reflective standards. Aluminum shall have an outdoor durability of up to seven years.
 - 2. All signs shall have two (2) 3/8-inch holes (one at top and one at bottom) shall be provided
- B. All hardware shall be hot dipped galvanized in accordance with ASTM A153 as identified on the drawings. All attachments shall be child-safe and vandal resistant.

2.03 GRAPHICS

- A. Sign shall be screen-printed. Finished with UV resistant graffiti-proof laminate.
- B. Graphics to be provided by Owner's Representative.

2.04 POSTS

- A. Posts for direction signage shall be 2-3/8" O.D. – Schedule 40 galvanized steel. Posts shall be finished with rounded cap.

PART 3 – EXECUTION

3.01 SIGNAGE

- A. Signs shall be located according to the Contract Documents and as approved by the Owner's Representative on site.
- B. Attach sign to fencing securely with the top edge of the sign panel level. Make tight connections with all surfaces free from distortion and as required by recognized standards.

END OF SECTION

SECTION 31 20 00: EARTH MOVING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

- A. The work of this Section consists of providing labor, equipment, materials, incidental work, and construction methods necessary to complete the work included in this Division 31 Section, EARTH MOVING, as indicated in the Contract Documents, and as specified.
- B. Provide all labor, equipment, materials, incidental work, and construction methods necessary to complete the work included in this Division 31 Section, EARTH MOVING which includes, but is not necessarily limited to the following:
 1. Unclassified excavation
 2. Common trench excavation for piping and structures
 3. Excavating and backfilling
 4. Fill materials, fill and compaction
 5. Trench backfill
 6. Drainage and dewatering as necessary to perform work in the dry
 7. Rough grading
 8. Removal of surplus or unsuitable materials
 9. Frost protection
 10. Preparation of subgrade for footings, foundations, slabs, pavements, and landscaping

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 1. Division 02 Section: SITE PREPARATION
 2. Division 32 Section: ASPHALT PAVING
 3. Division 32 Section: REINFORCED CONCRETE PAVING

1.04 REFERENCES

- A. The following standards shall apply to the work of this Section.
 1. Associated General Contractors of America, Inc. (AGC):
Manual of Accident Prevention in Construction
 2. American Society for Testing and Materials (ASTM):

D 422	Particle - Size Analysis of Soils
D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ³ (600 kN-m/m ³))
D 1556	Density of Soil In-Place by the Sand Cone Method
D 1557	Test Method for Laboratory Compaction Characteristics of Soil Using Modified Method Effort
D 2167	Density and Unit Weight of Soil In-Place by the Rubber Balloon Method
D 2487	Classification of Soils for Engineering Purposes (Unified Soil Classification System)
D 2922	Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth)
D 2937	Density of Soil In-Place by the Drive-Cylinder Method
D 3017	Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
D 4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils

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D 4491	Test Methods for Water Permeability of Geotextiles by Permittivity
D 4632	Test Method for Grab Breaking Load and Elongation of Geotextiles
D 4751	Test Method for Determining the Apparent Opening Size of a Geotextile
D 4759	Practice for Determining the Specification Conformance of Geosynthetics
3.	Massachusetts Department of Transportation (MassDOT): Standard Specifications for Highways and Bridges
4.	American Association of State Highway and Transportation Officials (AASHTO): T11 Material Finer than 75 um (No. 200) Sieve in Mineral Aggregates by Washing
	T27 Sieve Analysis of Fine and Course Aggregates

1.05 SUBMITTALS

- A. Provide submittals a minimum of 7 days prior to delivery of materials.
- B. Soil Samples: A 70-pound sample of each off-site material proposed for use, and of any on-site material when so requested by the Owner's Representative or testing laboratory, shall be submitted for approval.
 1. Samples shall be delivered to office the Owner's testing laboratory, as directed.
 2. Samples required in connection with compaction tests will be taken by and transported to the testing laboratory.
- C. Product Data: Submit product data for the following:
 1. Each type of plastic warning tape.
- D. Test Reports: In addition to test reports required under the Paragraph, Quality Control Testing Requirements of Part 1, submit the following:
 1. Mechanical gradation (sieve analysis) of each soil material proposed for fill and backfill from on-site materials and off-site borrow sources. Mechanical gradation shall be performed on off-site sources of fill and backfill materials using the same sieves as the materials specified. Mechanical gradation shall be performed on on-site fill and backfill materials using the same sieves or testing procedures as would be required for off-site borrow materials for which the on-site materials are proposed to replace.
 2. One optimum moisture-maximum density curve for each soil material.
 3. Report of actual unconfined compressive strength and/or results of bearing tests of each stratum tested.

1.06 QUALITY CONTROL TESTING REQUIREMENTS

- A. Contractor shall select, and the Owner's Representative shall approve, a qualified independent geotechnical engineering testing agency to perform testing during the following phases of the construction operations. Independent geotechnical engineering testing agency shall be paid directly by the Contractor. All test results shall be available to the Owner's Representative.
 1. Classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing.
 2. Observation during excavation and replacement of existing fill under paved areas.
 3. Observation of compaction of excavation subgrade and paved area subgrade.
 4. Observation during placement and compaction of fills.
 5. Laboratory testing and analysis of fill and bedding materials specified, as required by the Owner's Representative.
 6. Observe construction and perform water content, gradation, and compaction tests at a frequency and at locations determined by the testing laboratory and approved by the Owner. The results of these tests will be submitted to the Owner's Representative, copy to the Contractor, on a timely basis so that the Contractor can take such action as is required to remedy indicated deficiencies. During the course of construction, the testing laboratory will advise the Owner's Representative in writing with copy to Contractor if, at any time, in his opinion, the work is not in substantial conformity with the Contract Documents.
 7. Observation of fills following interruptions by rains or other inclement weather.

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- B. Contractor shall perform field in-place density tests according to ASTM D 1556, ASTM D 2167, or ASTM D 2937, as applicable. Testing laboratory shall submit test results directly to the Owner's Representative for review and acceptance.
 - 1. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 3017.
 - 2. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gauges at beginning of work, on each different type of material encountered, and at intervals as directed by the Owner's Representative.
 - 3. Footing Subgrade: At footing subgrade, perform at least one test of each soil stratum to verify design bearing capacities. Subsequent verification and approval of other footing subgrade may be based on a visual comparison of each subgrade with related tested strata when acceptable to the Owner's Representative.
 - 4. Paved Areas: At subgrade and at each compacted fill and backfill layer, perform at least one field in-place density test for every 2,000 sq. ft. or less of paved area, but in no case fewer than three tests as directed by the Owner's Representative.
 - 5. Fills and Embankments: For each 500 cubic yards or fraction thereof per shift, perform at least one field in-place density test as directed by the Owner's Representative.
- C. When subgrade, fills or backfills are below specified density, scarify, and moisten or aerate, or remove and replace soil to the depth required, re-compact and retest until required density is obtained.
- D. Testing of soils shall be in accordance with the following:

Property	ASTM Test Method
Particle - Size Analysis	D 422
Liquid Limit	D 4318
Plasticity Index	D 4318

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

1.07 QUALITY ASSURANCE

- A. Codes and Standards: Perform the work included in this Division 31 Section, EARTH MOVING complying with requirements of authorities having jurisdiction.
- B. Comply with applicable requirements of NFPA 495.
- C. Pre-installation Conference: Conduct conference at Project site.
 - 1. Before commencing work included in this Division 31 Section, EARTH MOVING, meet with representatives of the governing authorities, Owner, Owner's Representative, consultants, geotechnical engineer, independent testing agency, and other concerned entities. Review work included in this Division 31 Section, EARTH MOVING procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least three working days prior to convening conference. Record discussions and agreements and furnish a copy to each participant.
- D. Compliance: Comply with local safety regulations and with provisions of "Accident Prevention in Construction" published by the Associated General Contractors of America, Inc.

1.08 EXAMINATION OF EXISTING CONDITIONS

- A. The Contractor shall become thoroughly familiar with the existing conditions of the site, consult records and drawings of adjacent structures and of existing utilities and their connections, and note all conditions which may influence the work of this Section, work included in this Division 31 Section, EARTH MOVING.

1. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Owner's Representative and then only after acceptable temporary utility services have been provided.
2. Provide a minimum 48-hours' notice to the Owner's Representative and receive written notice to proceed before interrupting any utility.
3. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shutoff services if lines are active.

B. By submitting a bid, the Contractor affirms that he has carefully examined the site and all conditions affecting work under this Division 31 Section, EARTH MOVING. No claim for additional costs will be allowed because of lack of full knowledge of existing conditions.

C. The Contractor may, at his own expense, conduct additional subsurface testing as required for his own information with permission from Owner.

1.09 PROJECT CONDITIONS

- A. Protection: Ensure the safe passage of persons and traffic around the areas of earthwork. Provide bracing as may be required to support sides of excavation.
- B. Dust control: Take effective measures to minimize and control windblown dust. Do not create ice hazards by water spraying in freezing weather.
- C. Erosion control: Take effective action to control erosion and runoff from site. Prevent siltation of drainage systems and pollution of waterways and water bodies. Install erosion controls prior to beginning site clearing and earthwork.
- D. Utilities: Locate all utilities and maintain and keep utilities in service and protected from damage, except utilities indicated to be removed and relocated. Excavation and uncover all utilities requiring work or service.

1.10 INFORMATION NOT GUARANTEED

- A. Information in the Contract Documents relating to subsurface conditions, natural phenomena, and existing utilities and structures is from the best sources presently available. Such information is furnished only for the information and convenience of the Contractor, and the accuracy or completeness of this information is not guaranteed.
- B. Plans, surveys, measurements, and dimensions under which the work is to be performed are believed to be correct, but the Contractor shall examine them for himself during the bidding period. Compensation for unforeseen subsurface conditions shall be in accordance with the general provisions of contract, including:
 1. General and Supplementary Conditions and Division 01 Specification Sections

1.11 PERMITS, CODES & SAFETY REQUIREMENTS

- A. Comply with all rules, regulations, laws and ordinances of the City or Town and State, and all other authorities having jurisdiction over the project site. All labor, materials, equipment, and services necessary to make the work comply with such requirements shall be provided by the Contractor without additional cost to the Owner.
- B. Comply with the provisions of the Manual for Accident Prevention in Construction of the Associated General Contractors of America, Inc., and the requirements of the Occupational Safety and Health Administration, United States Department of Labor.
- C. The Contractor shall procure and pay for all permits and licenses required for the complete work specified herein and shown on the Contract Drawings.
- D. Obtain all inspection certificates required and deliver to Owner's Representative.
- E. The Contractor shall not close or obstruct any street, sidewalk, or passageway without written permission from authorities having jurisdiction. The Contractor shall so conduct his operations as to

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interfere as little as possible with the use ordinarily made of roads, driveways, or other facilities near enough to the work to be affected thereby.

- F. The Contractor shall secure a DIG SAFE permit number for the project to certify notification of gas, electrical and telephone utilities. All other affected utilities shall be contacted by the Contractor who shall secure notification receipts in accordance with requirements of Massachusetts law. The phone number is 811. Contractors shall notify "Dig Safe" of contemplated excavation, demolition or explosive work in public or private ways, and utility company right-of-way or easement. This notification shall be made at least 72 hours prior to the work, but not more than sixty days before the contemplated work. Such notice shall set forth the name of the street or the route number of said way and an accurate description of the location and nature of the proposed work. The Owner's Representative requires that the notification be sent to "Dig Safe" by certified mail, with copies to the Owner. The Architect requires a copy of the signed receipt of the delivery. "Dig Safe" is required to respond to the notice within 72 hours from the time said notice is received by designating at the locus the location of pipes, mains, wires and conduits. Contractor shall not commence work until "Dig Safe" has responded as noted above. The work shall then be performed in such a manner, and with reasonable precaution taken to avoid damage to utilities under the surface in said areas of the work.
- G. Contractor shall contact all utility companies whose utilities might be affected by the work included in this Division 31 Section, EARTH MOVING, and notify these utility companies of contemplated excavation, demolition or explosive work in public or private ways, and utility right-of-way easement. This notification shall be made at least 72 hours prior to the work, but not more than sixty days before the contemplated work. Such notice shall set forth the name of the street or the route number of said way and an accurate description of the location and nature of the proposed work. Contractor shall secure notification receipts for submission to the Owner's Representative prior to the start of the contemplated work. Contractor shall not commence work until all utility companies have responded and provided the necessary receipts. The work shall then be performed in such a manner, and with reasonable precaution taken to avoid damage to utilities under the surface in said areas of the work.

1.12 LAYOUT & GRADES

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

1.13 PROTECTION OF EXISTING STRUCTURES & UTILITIES

- A. Observe all rules and regulations governing the respective utilities in executing work included in this Division 31 Section, EARTH MOVING. The work shall be executed in such manner as to prevent any damage to adjacent property and any other property and existing improvements such as, but not limited to streets, curbs, paving, utility lines and structures, monuments, benchmarks and other public and private property. Protect existing structures and foundations from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by work included in this Division 31 Section, EARTH MOVING operations.
- B. In case of any damage or injury caused in the performance of the work, the Contractor shall, at his own expense, make good such damage or injury to the satisfaction of, and without cost to the Owner. Existing roads, sidewalks, and curbs damaged during the project work shall be repaired or replaced to their original condition at the completion of operations. The Contractor shall replace, at his own cost, existing benchmarks, monuments, and other reference points which are disturbed or destroyed.
- C. Buried structures, utility lines, and the like, including those which project less than 18 inches above grade, which are subject to damage from construction equipment shall be clearly marked to indicate the hazard. Markers shall indicate limits of danger areas, by means which will be clearly visible to operators of trucks and other construction equipment and shall be maintained at all times until completion of Project.

- D. Locate and mark underground utilities to remain in service before beginning the work. Protect all existing utilities to remain during operations. Do not interrupt existing utilities except when authorized in writing by authorities having jurisdiction.
- E. When an active utility line is exposed during construction its location and elevation shall be plotted on the Record Drawing by the Contractor and both the Owner's Representative and the Utility Owner notified in writing.
- F. Provide barricades, fences, lights, signs, and all other safety devices required for the protection of the public.

1.14 DEFINITIONS

- A. Base Course: The layer placed between the subbase course and surface pavement in a paving system.
- B. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations.
- C. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of pore water.
- D. Embankment: Any area on the site where the Contractor is required to raise grades to proposed subgrade elevations. Embankments are placed in layers to a predetermined elevation and cross section.
- E. Excavation: The removal of material encountered to subgrade elevations and the reuse of the material on site as Backfill, Fill or Ordinary Borrow material as it conforms to these specifications or disposal of materials removed.
- F. Finish Grade: Final grade elevations indicated on the Drawings. Spot elevations shall govern over proposed contours. Where not otherwise indicated, project site areas shall be given uniform slope between points for which finished grades are indicated or between such points and existing established grades. Spot elevations shall govern over proposed contours. No ponding of surfaces shall be allowed due to lack of improper pitches across surfaces that will not allow proper drainage to occur.
- G. Rock: A sound and solid mass, layer, or ledge of mineral matter in place of such hardness and texture that it:
 1. Mechanical Definition of Rock: Cannot be effectively loosened or broken down by ripping in a single pass with a late model tractor-mounted hydraulic ripper equipped with one digging point of standard manufacturer's design adequately sized for use with and propelled by a crawler type tractor rated between 210- and 240-net flywheel horsepower, operating in low gear.
 2. Manual Definition of Rock: In areas where the use of the ripper described above is impracticable, rock defined as sound material of such hardness and texture that it cannot be loosened or broken by a 6-pound drifting pick. The drifting pick shall have a handle not less than 34 inches in length.
- H. Rough grade: The top surface of subbase or base courses such as gravel, crushed stone, ordinary fill, and the like, ready to receive the final surface material application. Unless stated otherwise, all rough grades shall represent compacted material depths, as specified herein.
- I. Soil: All earth materials, organic or inorganic, which have resulted from natural processes such as weathering, decay, and chemical action of in situ rock or the deposition of unconsolidated material in which more than 35 percent by weight will pass a No. 200 sieve.
- J. Surplus Materials: On-site materials not used during the course of construction.
- K. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.
- L. Structural Backfill: The designated material as indicated in the Contract Documents to attain the proposed grades abutting or adjacent to site structures.

- M. Subbase Course: The layer placed between the subgrade and base course in a paving system, or the layer placed between the subgrade and surface of a pavement or walk.
- N. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase course, drainage fill, or topsoil materials.
- O. Topsoil: The upper layer of the soil profile which is supporting the growth of vegetation as evidenced by the existence therein of numerous roots and other organic matter.
- P. Unauthorized excavation: Removing materials beyond indicated subgrade elevations or dimensions without direction by the Owner's Representative. Unauthorized excavation, as well as remedial work directed by the Owner's Representative, shall be at the Contractor's expense.
- Q. Unclassified excavation: Removal of materials encountered when establishing required grade elevations to the depths and extents shown on the Contract Documents. Unclassified excavation includes removal and disposal of pavements and other obstructions visible on ground surface, underground structures and utilities indicated to be demolished and removed, material of any classification indicated in data on subsurface conditions.
- R. Unsuitable Material: Material that is classified as "unsuitable" shall be material having at least one of the following properties:
 - 1. Material with a maximum unit dry weight per cubic foot less than 90 pounds as determined by ASTM D 1557.
 - 2. Material containing visible organic matter, topsoil, organic silt, peat, construction debris, frozen material, roots, and stumps.
 - 3. Material which has a Liquid Limit greater than 55 when tested in accordance with ASTM D 4318.
 - 4. Material designated in the field by the Owner's Representative or the testing laboratory.
- S. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.
- T. Utility Trench Backfill: The area bounded by the proposed finished subgrade and the cover material over the respective pipe or conduit. This material shall conform with applicable requirements for embankment or structural backfill depending on the area or zone into which the utility is installed.

1.15 COORDINATION

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

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

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

PART 2 – PRODUCTS**2.01 SOIL MATERIALS**

A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations. Gradation requirements shall be determined by AASHTO T11 and T27.

1. Borrow material shall from on-site or off-site sources shall contain salt levels less than 1.0 milliohms/cm as measured by electrical conductivity (EC2) of a 1:2 soil-water suspension (Test minus sieve #4 material.). Borrow material with levels of salt in excess of this level will be considered unsuitable material and shall be removed from the site by the Contractor at no additional cost to the Owner.
2. Borrow material from on-site and off-site sources shall contain levels of heavy metals or PCB less than the currently mandated levels, as established by the Massachusetts Contingency Plan, latest edition. Toxic elements included therein are:

Toxic Elements

- a. Arsenic
- b. Boron
- c. Cadmium
- d. Chromium
- e. Copper
- f. Lead
- g. Mercury
- h. Molybdenum
- i. Nickel
- j. Selenium
- k. Zinc
- l. PCBs

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

3. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GW, GP, SW, and SP; free of rock or gravel larger than 2 in. in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.
4. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, GM, SC, SM, ML, MH, CL, CH, OL, OH, and PT.

B. Backfill and Fill Materials: Satisfactory soil materials as described above. On-site material for use in compacted backfill shall be natural, inorganic, granular soil, taken from areas of excavation after stripping of topsoil and removal of unsatisfactory soil materials as described above.

1. Use only backfill materials meeting the requirements of satisfactory soil materials that are free from rocks greater than 4 inches in diameter or length that have largest dimension no greater than three-quarters of the lift thickness or are no greater than $\frac{1}{2}$ ft.³ in volume. Do not use any foreign matter, such as construction debris, trash, wood, roots, leaves, sod, organic matter, or soft clay and silt. Sound pieces of building stone, masonry, and concrete from on-site sources subject to the same size limitations as stone, may be employed in backfill. Individual pieces shall be mixed into general backfill material, leaving no voids between pieces. Backfill shall be clean, non-organic material, of non-swelling character, capable of being readily compacted to form a solid, stable embankment. Pieces of bituminous pavement shall be excluded from the backfill unless their use is expressly permitted by the Owner's Representative, in which case they shall be broken up as directed. Materials containing ice or frozen lumps shall not be employed.
2. Backfill and fill materials for use under turf, seeded, and planted areas shall be free draining materials that drain at a rate greater than or equal to one inch per hour after compaction to the specified levels.
3. Suitable Excavated Material:
 - a. Free from clods, silt lumps or balls of clay
 - b. Free from stones or rock fragments over 50 pounds
 - c. Free from organics, peat, etc.
4. Frozen Material:
 - a. Do not backfill with or on frozen materials

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- b. Remove, or otherwise treat as necessary, previously placed material that has frozen prior to placing backfill.
- 5. Wet Material:
 - a. Do not mechanically or hand compact material that is, in the opinion of the Engineer, too wet.
 - b. Do not continue backfilling until the previously placed and new materials have dried sufficiently to permit proper compaction.
- C. Ordinary borrow shall conform to ASTM D2487 soil classification groups GW, GP, SW, and SP, and be well graded, natural inorganic soil, meeting the following requirements:
 - 1. It shall be free of organic or other weak or compressible materials, of frozen materials, and of stones larger than 4 inches maximum dimension.
 - 2. It shall be of such nature and character that it can be placed to form embankments and compacted to the specified densities in a reasonable length of time.
 - 3. It shall be free from highly plastic clays, from all materials subject to decay, decomposition, or dissolution and from cinders or other materials which will corrode piping or other metal.
 - 4. It shall have a maximum dry density of not less than 100 lbs. per cubic foot.
 - 5. Material from excavation on the site may be used as ordinary fill if it meets the above requirements and is approved by the Owner's Representative.
- D. Gravel borrow shall consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coatings, and deleterious materials. Gradation shall conform to the following:

<u>Sieve No.</u>	<u>% Passing by Weight</u>
1/2" (12.5mm)	50 – 85
#4 (4.75mm)	40 – 75
#50 (300um)	8 – 28
#200 (75 um)	0 – 8

- E. Dense graded crushed stone shall consist of inert angular material derived from a stone quarry that is hard, durable stone and stone screenings, free from loam and clay, surface coatings, and plastic materials. Gradation shall conform to the following:

<u>Sieve No.</u>	<u>% Passing by Weight</u>
2" (50 mm)	100
1-1/2" (37.5 mm)	70 – 100
3/4" (19.0 mm)	50 – 85
No. 4 (4.75 mm)	30 – 55
No. 50 (300 um)	8 – 24
No.#200 (75 um)	3 – 10

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

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

- G. Three-quarter of an inch crushed stone shall consist of inert angular material derived from a stone quarry that is hard, durable, washed stone, free of deleterious materials. Gradation shall conform to the following:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
1" (25 mm)	100
3/4" (19 mm)	90 – 100
1/2" (12.5 mm)	10 – 50
3/8" (9.5 mm)	0 – 20
No. 4 (4.75 mm)	0 – 5

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H. Structural fill shall be gravel, sandy gravel, or gravelly sand, free form organic material. Loam, trash. Snow, ice, frozen soil, and other objectionable material and well-graded with the following limits:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
3" (75 mm)	100
No. 4 (4.75 mm)	30 – 90
No. 40 (425 um)	10 – 50
No. 200 (75 um)	0 – 8

I. Crushed stone shall be clean, washed, crushed stone, free of fine materials and graded within the following limits:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
1" (25 mm)	100
3/4" (19 mm)	90 – 100
1/2" (12.5 mm)	10 – 50
No. 4 (4.75 mm)	0 – 5
No. 40 (425 um)	0 – 5
No. 200 (75 um)	0 – 5

J. Sand shall be clean, washed sand, free of silt and clay components and graded within the following limits:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
No. 4 (4.75 mm)	100
No. 8 (2.36 mm)	95 – 100
No. 16 (1.18 mm)	70 – 100
No. 30 (600 um)	40 – 75
No. 50 (300 um)	10 – 35
No. 100 (150 um)	2 – 15

J. Peastone shall consist of inert rounded material that is hard, durable, washed stone, free of deleterious materials.

<u>Sieve Size</u>	<u>% Passing by Weight</u>
3/4" (19 mm)	100
1/2" (12.5 mm)	0-5

2.02 USES OF MATERIALS

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

1. Gravel Borrow:
 - a. Subbase for bituminous concrete road and parking lot pavements.
 - b. Backfill for footings and structures.
 - c. As shown on the Contract Documents.
2. Dense Graded Crushed Stone:
 - a. Base for bituminous concrete road and parking lot pavements.
 - b. As shown on the Contract Documents.
3. Processed Gravel:
 - a. Drainpipe bedding and backfill.
 - b. Backfill for drainage and utility structures.
 - c. As shown on the Contract Documents.
4. Crushed Stone:
 - a. Drainage layer under pavement slab.
 - b. Underdrain filter aggregate.
 - c. Structural fill for footings and structures.
 - d. As shown on the Contract Documents.

5. Ordinary Borrow:
 - a. For footings and structures.
 - b. For backfill of utility trenches
 - c. General site fills.
 - d. As shown on the Contract Documents.
6. Backfill and Fill Materials:
 - a. For footings and structures.
 - b. For backfill of utility trenches
 - c. General site fills.
 - d. As shown on the Contract Documents.

2.03 FILTER FABRIC

- A. Filter fabric shall be Nonwoven, needle-punched continuous filament with flow rate range from 110 to 330 gpm/square feet when tested according to ASTM D 4491.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by the work included in this Division 31 Section, EARTH MOVING operations.
- B. Protect subgrade and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.

3.02 GRADES AND ELEVATIONS

- A. The Contract Documents indicate, in general, alignments, grade elevations and invert elevations. Establish the lines and grades in conformity with the Contract Documents. The Owner's Representative, however, may make such adjustments in the field in grades and alignments as are found necessary in order to avoid interference with any special conditions encountered.
- B. Spot elevations shall govern over proposed contours. Where not otherwise indicated, project site areas shall be given uniform slopes between points for which finished grades are indicated or between such points and existing established grades.
- C. Establish and maintain suitable stakes over all areas to be graded as directed, specified, or required. Maintain sufficient reference points at all times during construction to properly perform the contract installation.

3.03 UNCLASSIFIED EXCAVATION

- A. The work of excavation shall be conducted at such locations, at such rates of progress and in such a manner as will ensure the continued progress of the work, with a minimum inconvenience to the general public.
- B. All material encountered during excavation shall be unclassified excavation and shall include the removal of boulders up to 3 cubic yards, earth, rock, concrete, covered pavements, abandoned utilities, abandoned foundations and all miscellaneous materials encountered as required for excavation. Boulders and rock over 3 cubic yards shall be covered under "Rock Excavation" in this Division 31 Section, EARTH MOVING. The sequence of all excavation operations shall be such as to ensure the most efficient reuse of acceptable excavated borrow materials for particular improvement application. Acceptable materials shall be used or stockpiled for later use in backfill and subgrade preparation.
- C. Excavate all materials to the elevations, dimensions and form as shown in the Contract Documents and as specified for the construction of drainage structures, utilities, turf, and site improvements necessary for the completion of the utilities and site work. Excavate to elevations indicated or required within a tolerance of plus or minus 0.10 foot and as will allow footings to rest on firm, undisturbed earth or rock, free of loose materials, and as will permit rough grades to be at indicated

or specified depths. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

D. Unauthorized Excavation: Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation.

1. Any excavation which has been carried, through error, beyond specified depths or dimensions, shall be backfilled by the Contractor at his own expense with compacted gravel borrow, with concrete, or with other material as directed by the Owner's Representative.

E. Hand Excavation: In general, machine excavation will be permitted with the exception of work in the vicinity of trees to remain, existing utilities and excavation of pipe bells which will be hand work. Excavate to 6 inches below the bottom of pipe or as shown on Drawings. Excavation to final grade shall be made in such a manner as to maintain the undisturbed bearing character of the soil exposed at the excavation level.

F. Inspection: After completion of the excavation and prior to commencement of foundation footings, pavements and concrete slab construction, the excavation will be inspected by the Owner's Representative to ensure that foundation elevations have been reached.

3.04 TRENCH EXCAVATION

A. Trench Excavation: If the Contractor encounters unsuitable soils materials at the specified depths during trench excavation, he shall contact the Owner's Representative and request instructions from the Geotechnical Engineer before proceeding further.

1. Excavate trenches to indicated slopes, lines, depths, and invert elevations.
 - a. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line and to meet the inverts noted on the Drawings.
2. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.
 - a. Clearance: 12 inches each side of pipe or conduit.
3. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove stones and sharp objects to avoid point loading.
 - a. For pipes or conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
 - b. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.
 - c. Where encountering rock or another unyielding bearing surface, carry trench excavation 6 inches below invert elevation to receive bedding course.

3.05 STOCKPILING

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

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specified under the Division 01 Section, EROSION & SEDIMENTATION CONTROL and receive payment for this work under this Division 31 Section, EARTH MOVING.

B. Throughout the course of the work the Contractor shall provide and maintain all erosion control systems for stockpiled materials as specified in the Division 01 Section, EROSION & SEDIMENTATION CONTROL and paid for under the work of this Division 31 Section, EARTH MOVING.

3.06 FILLING, BACKFILLING & COMPACTION

A. Placing Fills and Compacting:

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

	Minimum	Maximum
All fills	95%	98%
Top twelve inches of subgrades in cut	95%	98%
Fills within turf, seeded, and planting areas to within eighteen inches of finished subgrade	85%	90%

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

b. In turf, seeded areas, and plant beds:

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

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

3.07 AGGREGATE BASE COURSE FOR PAVEMENTS

- A. Aggregate subbase and base courses for paving and the spreading, grading, and compaction methods employed shall conform to standard requirements for usual base course of this type for first class road work, and the following:
 1. MassDOT Specifications Section 100
- B. Compaction of aggregate base courses shall be to 95 percent of maximum density as determined by ASTM D 1557, Method D. Stone greater than two inches shall be excluded from course.
- C. Width of base courses shall be greater than or equal to the width of pavement surface, if continuous lateral support is provided during rolling, and shall extend a distance of at least twice the base thickness beyond edge of the course above, if not so supported.
- D. Aggregate material shall be applied in lifts less than or equal to 6 inches thick, compacted measure. Each lift shall be separately compacted to specified density.
 1. Material shall be placed adjacent to wall, manhole, catch basin, and other structures only after they have been set to required grade and level.
 2. Rolling shall begin at sides and progress to center of crowned areas and shall begin on low side and progress toward high side of sloped areas. Rolling shall continue until material does not creep or wave ahead of roller wheels.
 3. Surface irregularities which exceed 1/2 inches measured by means of a 10-foot long straightedge shall be replaced and properly compacted.
- E. Subgrade, subbase course and base course shall be kept clean and uncontaminated. Less select materials shall not be permitted to become mixed with gravel or dense graded crushed stone. Materials spilled outside pavement lines shall be removed and area repaired.
- F. Portions of subgrade or of construction above which become contaminated, softened, or dislodged by passing of traffic, or otherwise damaged, shall be cleaned, replaced, and otherwise repaired to conform to the requirements of this specification before proceeding with next operation.

3.08 BACKFILLING OF TRENCHES & STRUCTURES

- A. All requirements for description, placement, compaction and spreading of fill materials as specified in this Division 31 Section, EARTH MOVING, shall be applicable to backfilling operations for trenches and structures. If the Contractor encounters unsuitable soils materials at the specified depths during trench excavation, he shall contact the Owner's Representative and request instructions before proceeding further.

- B. Backfill materials as specified in this Division 31 Section, EARTH MOVING, shall be used as bedding and backfill around drainage pipes, around structures and for other uses as shown on the Contract Documents.
- C. Approvals Prior to Backfilling: Do not commence backfilling operations for trenches and structures until all piping and other underground utilities or structures have been installed, tested, and approved, and the locations of all pipe and appurtenances have been recorded.
- D. Placement in Trenches: Bedding materials as specified shall be placed to the full width of the trench as indicated on the Drawings. Place and compact bedding course on rock and other unyielding bearing surfaces. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. After a pipe is bedded, the trench shall be filled to the centerline of the pipe with additional bedding material as specified except at the joint. After the joint is inspected, that portion shall be filled in. Material under and around the pipe shall be carefully and thoroughly compacted to the densities specified in this Division 31 Section, EARTH MOVING.
- E. From the centerline of the pipe to a point 12 inches above the top of the pipe place additional bedding material as backfill by hand and compacted with mechanical tampers to not less than 95% of maximum density at optimum moisture content of the material. Above this point, backfill shall be placed by machine or by hand in layers 6 inches deep and compacted to the densities specified in this Division 31 Section, EARTH MOVING. This backfill shall be extended as shown in the Contract Documents. Backfill simultaneously on all sides of pipe or structure. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.
- F. Place concrete backfill in all utility trenches that pass under concrete footing or within 18 inches of footings. Place concrete to level of bottom of footings.
- G. Provide four-inch thick concrete base slab support for piping or conduit less than two feet-three inches below surface of roadways. After installation and testing, completely encase piping or conduit in a minimum of four inches of concrete before backfilling or placing roadway subbase course
- H. Coordinate backfilling with utilities testing.
- I. Fill voids with approved backfill materials as shoring and bracing, and sheeting is removed.
- J. Place and compact final backfill of satisfactory soil material to final subgrade.
- K. Install warning tape directly above utilities, twelve inches below finished grade, except six inches below subgrade under pavements and slabs.

3.09 ROUGH GRADING

- A. Rough grading shall include the shaping, trimming, rolling, and refinishing of all surfaces of the subbase and base courses, shoulders, and earth slopes in preparation for final, finish grading of pavements, loams and site improvements as shown on the Contract Drawings. The rough grading of shoulders and sloped areas may be done by machine methods. All ruts shall be eliminated. Traffic of men and equipment across soil subgrade areas shall be prohibited following excavation to the required lines and grades.
 - 1. Shape subbase and base courses to required crown elevations and cross-slope grades.
 - 2. When thickness of compacted subbase or base course is 6 inches or less, place materials in a single layer.
 - 3. When thickness of compacted subbase or base course exceeds 6 inches, place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.
- B. If, during the progress of the Work, any pipe, drain or other construction is damaged due to operations under this Contract, the Contractor shall repair all damage at no additional cost to the Owner and restore damaged areas to their original conditions.
- C. Do all other cutting, filling, and grading to the lines and grades indicated on the Drawings. Grade evenly to within the dimensions required for grades shown in the Contract Documents and as specified herein. No stones larger than 3 inches in largest dimension shall be placed in upper 6

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inches of the subgrade. Fill shall be left in a compacted state at the end of the workday and sloped to drain.

- D. Slope grades to direct water away from buildings and to prevent ponding. Rough grade to required elevations within the following tolerances:
 - 1. Turf or Unpaved Areas: Plus/minus 0.10 foot.
 - 2. Paved Areas: Plus/minus 0.05 foot.
- E. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders at least twelve inches wide of acceptable soil materials and compact simultaneously with each subbase course and base course layer.
- F. The Contractor shall bring all areas to grades as shown in the Contract Documents and in the details. The Owner's Representative, however, may make such adjustments in grades and alignments as are found necessary to avoid special conditions encountered.
- G. No rubbish of any description shall be allowed to enter fill material. Such material shall be removed from the site.
- H. Wherever streets, turf or seeded areas, or sidewalks or other items contained within or outside the Limit of Contract lines have been excavated in fulfilling the work required under this Contract, the Contractor shall furnish and install all materials necessary to bring finish surfaces level with the existing adjacent surfaces. All work shall be installed to match the existing conditions in accordance with the governing authority. Notify the proper authorities prior to restoring surfaces outside the Contract Limit Lines.
- I. Placed fill materials that become disturbed shall be regraded and re-compacted. Fill materials that become contaminated shall be removed and replaced, as directed by the Owner's Representative.
- J. Contractor shall clean the subgrade of all stones greater than two inches and all debris and rubbish. Such material shall be removed from the site, not raked to the edges and buried. Notify the Owner's Representative that the subsoil has been cleaned and request his/her attendance on site to review and approve subgrade conditions prior to spreading additional specified material over the subgrade.

3.10 REMOVAL OF SURPLUS & UNSUITABLE MATERIALS

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

3.11 DRAINAGE & DEWATERING

- A. The Contractor shall control the grading in areas under construction on the site so that the surface of the ground will properly slope to prevent accumulation of water in excavated areas and adjacent properties. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrade, and from flooding Project site and surrounding area. The Contractor shall grade and ditch the site as necessary to direct surface runoff away from open excavations and subgrade surfaces. Positive drainage (minimum 1.0 percent slope) shall be maintained at all times.
- B. Protect subgrade and foundation soils from softening and damage by rain or water accumulation.
- C. Should surface, rain or ground water be encountered during the operations, the Contractor shall furnish and operate pumps or other equipment and provide all necessary piping to keep all excavation clear of water at all times and shall be responsible for any damage to work or adjacent properties from such water. All piping exposed above surface for this use shall be properly covered to allow foot traffic and vehicles to pass without obstruction.
- D. Water from trenches and excavations shall be disposed of in such a manner as will not cause injury to public health nor to public or private property, nor to existing work, nor to the work completed or in progress, nor to the surface of roads, walks, and streets, nor cause any interference with the use of the same by the public. Methods of disposal of pumped effluent shall not cause erosion or siltation.

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1. Provide and install all erosion and sedimentation control as specified on the Contract Drawings and be paid for this work under the scope of this Division 31 Section, EARTH MOVING.
- E. There shall be sufficient pumping equipment, in good working order, available at all times to remove water.
- F. Presence of ground water in soil will not constitute a condition for which an increase in the Contract price may be made. Do not place concrete fill, lay piping, or install appurtenance under any circumstances in excavation containing free water.
- G. Under no circumstances place fills, pour concrete, or install piping and appurtenances in excavations containing free water.
- H. Where, in the opinion of the Owner's Representative, pumping of excavations is not effective in maintaining a dry firm subgrade, provide other dewatering methods acceptable to the Owner's Representative.

3.12 FROST PROTECTION

- A. Do not excavate to full indicated depth when freezing temperatures may be expected unless footings or slabs can be poured immediately after the excavation has been completed. Protect the excavation from frost if placing of concrete is delayed.
- B. Completed foundations that have not been backfilled shall be protected from freezing by temporary additional earth cover, insulating blankets, heaters, or other methods acceptable to the Owner's Representative.
- C. Frozen material shall not be placed as fill or backfill.
- D. No work shall be installed on frozen ground.
- E. Should protection fail, remove frozen materials, and replace with concrete or gravel borrow as directed by the Owner's Representative at no additional cost to the Owner.

3.13 DUST CONTROL

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

3.14 CLEANUP

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

END OF SECTION

SECTION 32 12 16: ASPHALT PAVING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to furnish and install the bituminous concrete pavement, permits, traffic control and police detail, as indicated on the Contract Documents and as specified herein.

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 1. Division 02 Section: SITE PREPARATION & DEMOLITION
 2. Division 31 Section: EARTH MOVING
 3. Division 32 Section: REINFORCED CONCRETE PAVING

1.04 REFERENCES

- A. The following standards shall apply to the work of this Section.
 1. American Association of State Highway and Transportation Officials (AASHTO):
M 20 Penetration Graded Asphalt Cement
M 82 Cut-Back Asphalt (Medium Curing Type)
M 140 Emulsified Asphalt
 2. American Society for Testing and Materials (ASTM):
D 1557 Moisture-Density Relations of Soils and Soil Aggregate Mixtures Using 10-pounds (4.54-kg) Rammer and 18-in. Drop
 3. Massachusetts Department of Transportation (MassDOT): Standard Specifications for Highways and Bridges, latest edition
 4. Federal Specifications:
SS-S-1401 Sealing Compound, Hot Applied, for Concrete and Asphalt Pavements

1.05 SAMPLES AND SUBMITTALS

- A. At least 30 days prior to intended use, the Contractor shall provide job mix formula for all bituminous concrete specified in this Section, listing quantities and pertinent ingredient properties for review and approval by the Owner's Representative. Do not order materials until Owner's Representative's approval of mix formula has been obtained. Delivered materials shall closely match the approved samples.

1.06 QUALITY ASSURANCE

- A. Unless otherwise specified, work and materials for construction of the bituminous concrete pavement shall conform to the applicable portions of the following:
 1. MassDOT Standard Specifications Sections 400
- B. Paving work, base course installation, top coarse installation, and the like, shall be done only after excavation and construction work which might damage them has been completed. Damage caused during construction shall be repaired before acceptance.

- C. Pavement subbase shall not be placed on a muddy or frozen subgrade. Pavement courses shall not be placed on frozen or contaminated base course or binder course.
- D. Existing pavement under state or local jurisdiction shall, if damaged during the course of this project, be repaired or replaced as specified, performed and paid for under this section of the Specification. Materials and construction shall match local or state paving standards and cross sections, whichever is most stringent.

1.07 TESTING & INSPECTION

- A. The Owner reserves the right to retain an independent testing laboratory to perform inspection and testing of paving and associated work in accordance with Division 01 Section, QUALITY CONTROL.

PART 2 – PRODUCTS

2.01 BASE COURSE

- A. Material for base course shall be specified, provided, installed, and paid for under the work of the Division 31 SECTION, EARTH MOVING, of this Specification.

2.02 SUBBASE COURSE

- A. Material for subbase course shall be specified, provided, installed, and paid for under the work of the Division 31 SECTION, EARTH MOVING, of this Specification.

2.03 BITUMINOUS CONCRETE

- A. Bituminous concrete shall be a standard plant-mixed, hot-laid paving material for road work, consisting of clean, crushed rock aggregate, mineral filler, and asphalt conforming to the following:

- 1. MassDOT Standard Specifications 400 and Section M3

- B. Bituminous Concrete Mixtures: Bituminous concrete for roadway and parking lot pavements and patching shall be Class I, Type I-1, furnished in accordance with MassDOT Standard Specifications Section M3, except as modified herein.

- 1. Bituminous concrete pavement for roadways and other areas shown on the Contract Documents shall consist of 2 courses of bituminous concrete with a minimum finished pavement depth after rolling equal to the following:
 - a. Total Compacted Pavement Thickness shall be as indicated on the Contract Documents.
 - b. Binder course shall consist of one lift of Binder Course bituminous concrete to thickness as shown on the Contract Documents.
 - c. Finished top course shall consist of one lift of Top Course bituminous concrete to thickness as shown on the Contract Documents.

- 2. Bituminous concrete patch shall consist of the following:
 - a. Top Course and Binder Course bituminous concrete in depths to match existing roadways.

- C. Hot Mix Asphalt

- 1. Pavement mixtures shall be within the composition limits of base courses, binder courses, top courses, and surface treatment, in accordance with MassDOT Standard Specifications Hot Mix Asphalt Job Formulas, with constituents that conform to table below.

Standard Sieves	Reclaimed Subbase	Dense Binder Course	Modified Top Course	Surface Treatment	3/8-inch Top Course
3 inch	100%				
2 inch					
1-1/2 inch	70-100				
1 inch		100%	100%		
3/4 inch	50-85	87-93	95-100		
5/8 inch					100%
1/2 inch		72-73	86-93		95-100
3/8 inch			75-81	100%	87-93
No. 4	30-60	55-58	55-61	94-100	57-69
No. 8		41-45	37-42	68-81	41-45
No. 16			24-36	50-64	30-36
No. 30		21-26	18-26	30-46	21-25
No. 50	8-24	14-18	13-17	17-27	14-17
No. 100			10-12	11-13	9-12
No. 200	0-100	2-4	4	5-6	4-5
% Binder (Bitumen)		5.4-5.6	5.4-5.6	7.4-7.6	5.9-6.6

- a. Percentages shown for aggregate sizes are stated as proportional percentages of aggregate for the mix.
- 2. Unless authorized by the Owner's Representative, no Job-Mix Formula will be approved which specifies:
 - a. More than 45% passing No. 8 for Top and Dense Binder Courses
 - b. More than 42% passing No. 8 for Modified Top Course
 - c. More than 55% passing No. 8 for Dense Mix
 - d. Less than 4% passing No. 200 for Top Course

2.04 BITUMINOUS MATERIALS

- A. Bituminous crack sealer shall be a hot-applied bituminous sealer conforming to Federal Specification SS-S-1401.
- B. Tack coat shall consist of asphalt emulsion, Type RS-1 or RS-2 conforming to MassDOT Specifications.
- C. Prime coat shall be Asphalt Primer conforming to MassDOT Standard Specifications M3 – Asphalt Primer, and in accordance with the requirements of AASHTO M116.

PART 3 – EXECUTION

3.01 GRADING

- A. Areas to be paved shall be compacted and brought approximately to subgrade elevation as specified, performed, and paid for under the work of the Division 31 Section, EARTH MOVING, before work of this section is performed. Final fine grading, filling, and compaction of subgrade to receive paving, as required to form a firm, uniform, accurate, and unyielding subgrade at required elevations and to required lines, shall be specified, performed, and paid for under the Division 31 Section, EARTH MOVING, of this Specification.
- B. Existing subgrade material that will not readily compact as required shall be removed and replaced with satisfactory materials. Additional materials needed to bring subgrade to required line and grade

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and to replace unsuitable material removed shall be material specified, delivered, installed, and paid for under the Division 31 SECTION, EARTH MOVING, of this Specification.

- C. Subgrade of areas to be paved shall be re-compacted as required to bring top 8 inches of material immediately below gravel base course to a compaction of at least 95 percent of maximum density, as determined by ASTM D 1557, Method D. Subgrade compaction shall extend for a distance of at least 12 inches beyond pavement edge.
- D. Excavation required in pavement subgrade shall be completed before fine grading and final compaction of subgrade are performed. Where excavation must be performed in completed subgrade or subbase subsequent backfill and compaction shall be performed as directed by the Owner's Representative as specified, performed, and paid for under the work of the Division 31 Section, EARTH MOVING, of this Specification. Completed subgrade after filling such areas shall be uniformly and properly graded.
- E. Areas being graded or compacted shall be kept shaped and drained during construction. Ruts greater than or equal to 2 inches deep in subgrade, shall be graded out, reshaped as required, and re-compacted before placing pavement.
- F. Materials shall not be stored or stockpiled on subgrade.
- G. Disposal of debris and other material excavated and/or stripped as specified, performed, and paid for under the work of this section, and material unsuitable for or in excess of requirements for completing work of this section, shall conform to the following:
 1. Material shall be legally disposed of off-site.
- H. Prepared subgrade will be inspected by the Owner's Representative. Subgrade will be approved by the Owner's Representative before installation of paving base course. Disturbance to subgrade caused by inspection procedures shall be repaired as specified, performed, and paid for under Division 31 Section, EARTH MOVING, of this Specification.

3.02 AGGREGATE BASE COURSE

- A. Aggregate base course for bituminous paving shall be provided, installed, and paid for under the Division 31 Section, EARTH MOVING, of this Specification.

3.03 BITUMINOUS PAVING – GENERAL

- A. Bituminous paving mixture, equipment, methods of mixing and placing, and precautions to be observed as to weather, condition of base, and related requirements shall conform to the following:
 1. Road: MassDOT Specifications Section 400 - Class I Bituminous Concrete Pavement for roadway and parking areas.
- B. Bituminous binder and wearing surface courses shall each be applied individually, in single lifts of full thickness indicated on the Contract Documents.
- C. No mix shall be placed on wet or damp surfaces. No mix shall be placed when ambient temperatures are 40° Fahrenheit and falling.
- D. The temperature of bituminous concrete mixture when delivered to the site shall conform to MassDOT Specifications Section 400.
- E. The Owner's Representative may require the Contractor to remove and replace at this own expense any defective mix not conforming to the specified job mix formula.
 1. If, at any time before the final acceptance of the work, any soft, imperfect places or spots shall develop in the surface, all such places shall be removed and replaced with new materials and then compacted until the edges at which the new work connects with the old become invisible.

- F. Adjacent paving and curb work shall be protected from stain and damage during entire operation. Damaged and stained areas including curbs shall be replaced or repaired to equal their original condition.
- G. Deliveries shall be timed to permit spreading and rolling all material during daylight hours, unless artificial light, satisfactory to Owner's Representative, is provided. Loads which have been wet by rain or otherwise will not be accepted. Hauling over freshly laid or rolled material will not be permitted.
- H. Spreading and Finishing:
 - 1. The equipment for spreading and finishing shall be mechanical, self-powered pavers, capable of spreading and finishing the mixture true to lines, grade, width, and crown by means of fully automated controls for both longitudinal and transverse slope.
 - 2. If, during construction, it is found that the spreading and finishing equipment in use leaves tracks or indented areas, or produces other permanent blemishes in the pavement, which are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued and other satisfactory spreading and finishing equipment shall be provided by the Contractor.
 - 3. The mixtures shall be placed and compacted only at such times as to permit the proper inspection and checking by the Owner's Representative.
 - 4. The mixtures shall be placed only upon approved surfaces that are clean from foreign materials and dry; and when weather conditions are suitable.
 - 5. The contact surfaces of curbing, manholes, catch basins or other appurtenant structures in pavement shall be painted thoroughly with a thin uniform coating of bitumen (MassDOT Specifications RS-1) just before any mixture is placed against them. This requirement shall be included as work incidental to paving operations.
 - 6. Machine Spreading: All mixtures shall be deposited in an approved mechanical spreader and immediately spread thereby, and then struck off in a uniform layer to the full width required and of such depth that each course, when compacted, shall have the required thickness and shall conform to the grade and cross section contour specified.
 - 7. Hand Spreading: Spreading by hand methods will be permitted only for particular locations in the work which because of irregularity, inaccessibility or other unavoidable obstacles do not allow mechanical spreading and finishing.
- I. Placing and rolling of mixture shall be as nearly continuous as possible. Rolling shall begin as soon after placing as mixture will bear the operation without undue displacement. Delays in rolling freshly spread mixture will not be permitted. Rolling shall proceed longitudinally, starting at edge of newly placed material and proceeding toward previously rolled areas. Rolling overlap on successive strips shall be greater than or equal to 1/2 width of roller rear wheel. Alternate trips of roller shall be of slightly different lengths. Corrections required in surface shall be made by removing or adding materials before rolling is completed. Skin patching of areas where rolling has been completed will not be permitted. Course shall be subjected to diagonal rolling, crossing lines of the first rolling while mixture is hot and in compactable condition. Displacement of mixture or other fault shall be corrected at once by use of rakes and application of fresh mixture or removal of mixture, as required. Rolling of each course shall be continued until roller marks are eliminated. Roller shall pass over unprotected edge of course only when paving is to be discontinued for sufficient time to permit mixture to become cold.
- J. In places not accessible to roller, mixture shall be compacted with hand tampers. Hand tampers shall weigh at least 50 pounds and shall have a tamping face less than or equal to 100 square inches. Mechanical tampers capable of equal compaction will be acceptable in areas in which they can be employed effectively.
- K. Edges of bituminous concrete that meet turf areas shall be shaped to provide a neat, clean edge and shall be hand tamped.
- L. Compaction:
 - 1. After the paving mixture has been properly spread, compaction shall be obtained by the use of power rollers of approved design and weight per inch of roller. The rollers shall be steel wheeled supplemented with pneumatic-tired rollers where required.
 - 2. Along curbs, structures, and all places not accessible with a roller, the mixture shall be thoroughly compacted with mechanical tamping devices. The surface of the mixture after compaction shall be smooth and true to the established line and grade.

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3. The densities of the completed pavement shall be not less than 95 percent of the density obtained from laboratory compaction of a mixture composed of the same materials in like proportions.

M. Portions of pavement courses which become mixed with foreign material or are in any way defective shall be removed, replaced with fresh mixture, and compacted to density of surrounding areas. Bituminous material spilled outside lines of finished pavement shall be immediately and completely removed. Such material shall not be employed in the work.

N. Joints shall present same texture, density, and smoothness as other sections of the course. Continuous bond shall be obtained between portions of existing and new pavements and between successive placements of new pavement. New material at joints shall be thick enough to allow for compaction when rolling. Compaction of pavement, base, and subgrade at joints shall be such that there is no yielding of new pavement relative to existing pavement when subjected to traffic.

O. Contact surfaces of previously constructed pavement (if greater than or equal to two days since binder placed), manholes, and similar structures shall be thoroughly cleaned and painted with a thin uniform coating of bitumen immediately before fresh mixture is placed. Tack coat shall be applied at rate which will leave bituminous residue of 5 to 7 gallons/100 yd.² after evaporation of vehicle. Base surface shall be dry and clean when tack coat is applied. Bituminous paving material shall not be placed until vehicle has completely evaporated from tack coat. Adjoining new paving shall be placed before tack coat has dried or dusted over.

P. Earth or other approved material shall be placed along pavement edges in such quantity as will compact to thickness of course being constructed, allowing at least 12 inches of shoulder width to be rolled and compacted simultaneously with rolling and compacting surface. Pavement edge shall be trimmed neatly to line before placing earth or other approved material along edge.

Q. Variations in pitch of finished surface shall be less than or equal to the following tolerances when tested with a 10-foot straightedge, applied both parallel to and at right angles to centerline of paved area.

1. At joint with existing pavement, and at other locations where an essentially flush transition is required, pavement elevation tolerance shall not exceed 0.01 feet.
2. At other areas pavement elevation tolerance shall not exceed \pm 0.05 feet.
3. Irregularities exceeding these amounts or which retain water on surface shall be corrected by removing defective work and replacing with new material as specified, performed and paid for under this section.

R. No vehicular traffic of any kind shall be allowed to pass over the newly finished surface until it has had time to set. Seventy-two hours will be considered sufficient time for the pavement to set in most cases, but this period may be extended by the Owner's Representative as required by weather or other reasons. Under all circumstances, damage to the pavement caused by the Contractor's or public vehicles driving over the pavement before the pavement has fully cured shall be repaired as specified, performed, and paid for under this section, at no additional cost to the Owner.

END OF SECTION

SECTION 32 13 13: REINFORCED CONCRETE PAVING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to furnish and install REINFORCED CONCRETE PAVING, as indicated on the Contract Documents and as specified herein.

1.03 REFERENCES

- A. The following standards shall apply to the work of this Section:

1. American Concrete Institute (ACI):
306R Cold Weather Concreting
316R Recommendations for Construction of Concrete Pavements and Concrete Bases
2. American Society for Testing and Materials (ASTM):
A 185 Specification for Steel Welded Wire Fabric. Plain, for Concrete Reinforcement
A 615 Specification for Deformed and Plain Billet - Steel Bars for Concrete Reinforcement
C 33 Specifications for Concrete Aggregates
C 94 Specifications for Ready-Mixed Concrete
C 143 Test Method for Slump of Hydraulic Cement Concrete
C 150 Specification for Portland Cement
C 171 Specification for Sheet Materials for Curing Concrete
C 231 Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
C 309 Specification for Liquid Membrane-Forming Compounds for Curing Concrete
C 494 Specification for Chemical Admixtures for Concrete
C 1116 Standard Specification for Fiber Reinforced Concrete & Shotcrete
D 226 Specification for Asphalt-Saturated Organic Felt Used in Roofing & Waterproofing
D 545 Test Methods for Preformed Expansion Joint Fillers for Concrete Construction (Non-extruding and Resilient Types)
D 1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort [56,000 ft-lbf/ft³ (2,700 kN-m/m³)]
D 1752 Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
3. Massachusetts Department of Transportation (MassDOT): Standard Specifications for Highways and Bridges

1.04 RELATED SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 1. Division 02 Section: SITE PREPARATION & DEMOLITION
 2. Division 31 Section: EARTH MOVING

1.05 SUBMITTALS

- A. Description of Methods and Sequence of Placement. For each type of specially-finished concrete provide description of methods and sequence of placement.

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- B. Submit manufacturer's product data for the following:
 - 1. Form release agent
 - 2. Prefabricated control joint
 - 3. Preformed joint filler
 - 4. Sealants
 - 5. Curing materials
- C. Submit samples of the following:
 - 1. Prefabricated control joint
 - 2. Preformed joint filler
 - 3. Color chart for selection of sealant color
- D. Construct Concrete Sample Panels:
 - 1. Construct 6-foot x 6-foot sample panels of finished concrete pavement for approval, at least 15 days prior to final concrete paving work. Samples shall not be constructed in an area of proposed finish work. Samples shall be constructed within the vicinity of the proposed finish work to facilitate comparisons during construction. The samples shall demonstrate the typical installation of concrete, including score lines, expansion joint and sealant, curing and finishing material, surface texture, color, and edge treatment. The accepted sample, upon approval, shall be maintained as the standard of minimal quality for approval of all proposed concrete pavement work required for the project. If the original sample panel is not approved, the Contractor shall provide additional sample panels, as required, at no additional cost to the Owner until an approved sample is obtained. Unacceptable sample panels shall immediately be removed from the site.
- E. Test reports for concrete, per paragraph 1.07 – TESTING & INSPECTION of this specification.

1.06 QUALITY ASSURANCE

- A. Unless otherwise specified, work and materials for construction of the reinforced Portland cement concrete paving shall conform to ACI 316R, and applicable portions of the following:
 - 1. MassDOT Specifications Section 400 Cement Concrete Pavement.
- B. Surfaces of curb ramps and handicapped access ramps shall be stable, firm and slip resistant. Construct ramps so that water does not accumulate on ramp surfaces.
- C. Paving work, base course installation, top course installation, and the like, shall be done only after excavation and construction work which might injure them have been completed. Damage caused during construction shall be repaired before acceptance.
- D. Existing paving areas shall, if damaged or removed during course of this project, be repaired or replaced under this SECTION, REINFORCED CONCRETE PAVING. Workmanship and materials for such repair and replacement, except as otherwise noted, shall match as closely as possible those employed in existing work installed under this Contract.
- E. Pavement, base, or subbase shall not be placed on a muddy or frozen subgrade.

1.07 TESTING & INSPECTION

- A. The Contractor shall perform slump and compressive strength tests for concrete paving. Slump tests shall be performed on every truck delivery. Compressive strength tests shall be performed every 50 cubic yards delivered. Compressive strength testing shall include three cylinder per test (one each for 7 days, 28 days, and a reserve). All tests shall be paid by the Contractor.

PART 2 – PRODUCTS

2.01 AGGREGATE BASE COURSE

A. Base course shall be existing aggregate base re-graded and compacted. Existing base shall be supplemented with similar materials as required to meet the proposed elevations.

2.02 STEEL REINFORCEMENT

A. Welded wire fabric (WWF) reinforcement shall conform to the applicable requirements of ASTM A 185. Fabric reinforcement shall be furnished in flat sheets. Fabric reinforcement in rolls will not be permitted.

1. Provide 6 inches x 6 inches W2.9 x W2.9 WWM for 6 inch thick concrete pavement, 6 inches x 6 inches W3.4 x W3.4 WWM for 8 inches thick concrete pavement and 6 inches x 6 inches W1.4 x W1.4 WWM for 4 inches concrete pavement.

B. Steel reinforcing bars shall conform to ASTM A 615.

1. Bars employed as reinforcement shall be deformed type.
2. Unless otherwise indicated on the Contract Documents, reinforcing bars shall be Grade 60.

C. Steel expansion dowels shall be hot-rolled plain steel rounds conforming to the requirements of AASHTO M31, Grade 60 and consisting of a 1/2 inches by 24 inches smooth steel dowel and compatible waxed tube sleeve, by 12 inches in length.

1. Dowels and sleeves shall be as furnished by A.H. Harris & Sons, Inc., by U.S. Steel Corp., by Edgecombe Steel Corporation, or approved equal.
2. Dowels shall be epoxy coated.

2.03 PORTLAND CEMENT CONCRETE

A. Cast-in-place concrete shall be air-entrained concrete with minimum 28-day compressive strength of 4,000 pounds per square inch (30 MPa), conforming to the requirements and applicable provisions of MassDOT Specifications Section M4.

1. Air Entrainment: Concrete shall be air-entrained 7 percent minimum +/-1 percent, by volume.
2. Slump: Concrete shall have a slump of 2 inches to 4 inches slump.
3. Maximum Aggregate Size: Aggregate size shall be a maximum of 3/4 inches.
4. Thickness of Concrete: Depths shall be as noted on the Contract Documents.

2.04 CURING MATERIALS FOR PLAIN CONCRETE

A. Curing shall be by moist curing or by use of curing compound.

B. Curing paper shall be non-staining, fiber reinforced laminated kraft bituminous product conforming to ASTM C 171. Four mil polyethylene sheeting may be substituted for curing paper.

C. Curing compound shall be a resin-base, white pigmented compound conforming to ASTM C 309, Type 1.

2.05 EXPANSION JOINTS

A. Provide expansion joints as indicated and in accordance with the following:

1. Unless otherwise indicated on the Contract Documents, expansion joints shall be located 20 feet on center maximum.
2. Location of expansion joints are indicated on the Contract Documents.

B. Expansion Joint Filler:

1. Closed cell polymer foam meeting requirements of ASTM D 1752, Sections 3.1 to 3.4, based on compression requirement of 10 pounds per square inch minimum and 25 pounds per square

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inch maximum. Recovery rate following 50 percent compression shall exceed 99 percent recovery, per ASTM D 545. Foam shall be equal to Ceramar Foam Filler, manufactured by W.R. Meadows, Inc., or an approved equal.

2. Expansion joint filler shall have a removable cap cover for the joint filler with integral permanent plastic bond breaker such as Snap-Cap from Seal Tight manufactured by W.R. Meadows, Inc., or approved equal. Cover width shall be sized to match width of joint filler.

2.06 CONTROL JOINTS

- A. Control joints in concrete shall be made using a preformed contraction joint equal to the Plastic Contraction Joint distributed by A.H. Harris & Sons, Inc., Medfield, MA, or approved equal.
 1. Preformed contraction joint shall be specifically designed to form construction and weaken plane joints.
 2. Dimension of prefabricated joint former shall be as indicated on the Contract Drawings.
 3. Joints shall be placed 5 feet on center, maximum or as shown on the Contract Drawings.

2.07 CONSTRUCTION JOINTS

- A. Transverse construction joints shall be placed whenever placing of concrete is suspended for more than 30 minutes.
 1. Butt joint with dowels or thickened edge joint shall be used if construction joints occurs at location of control joint. Submit sketch to Owner's Representative for review and acceptance of proposed system.
 2. Keyed joints with tie bars shall be used if the joint occurs at any other location.

2.08 SEALANT

- A. Joint sealant and primer shall be polyurethane-based, one component, elastomeric sealants, complying with Fed. Spec. TT-S-00230C, Class A Type 1. Color shall be as selected by the Owner. Sealants shall be self-leveling pour grade type.
 1. Vulkem 45, as manufactured by Mameko International, 4475 East 175th Street, Cleveland, Ohio, (800) 321-6412.
 2. Urexpan NR-210, as manufactured by Pecora Corporation, 165 Wambold Road, Harleysville, Pennsylvania, (215) 723-6051
 3. PSI 951, as manufactured by Polymeric Systems Inc., Phoenixville, Pennsylvania, (800) 228-5548.
 4. Approved equal
- B. Provide only materials which are known to be fully compatible with the actual installation condition, as shown by the manufacturer's published data or certification. Use manufacturer's recommended joint primer.

2.09 DETECTABLE TACTILE WARNING

- A. Detectable warning surface shall conform to the requirements of MassDOT as shown on the Construction Standard Details, most recent version (Standard Drawing 107.6.5R), and shall be made of cast iron.

PART 3 – EXECUTION

3.01 PREPARATION OF SUBGRADE

- A. Subgrade of areas to be paved shall be re-compacted as required to bring top 8 inches of material immediately below aggregate base course to a compaction at optimum moisture of at least 95 percent of maximum density, as determined by ASTM D 1557. Subgrade compaction shall extend for a distance of at least 12 inches beyond pavement edge.

3.02 FORMWORK

- A. All forms shall be joined neatly and tightly, shall be set true to line and grade, well-staked and braced, and shall have uniform bearing throughout their length. Remove all forms and miscellaneous appurtenances from pavement edges and dispose of all formwork and appurtenances at the end of the construction project.
 - 1. Forms shall not be moved for 72 hours after the concrete has been placed, or for a longer period if directed by the Owner's Representative.
 - 2. Remove all forms. Extreme care shall be taken in removing forms in order that no damage will be done to the concrete.
 - 3. Under no condition shall any bar, pick or other tool be used which depends upon leverage on the concrete for removal of the forms.

3.03 STEEL REINFORCEMENT

- A. Before being placed in position, reinforcing for reinforced concrete shall be thoroughly cleaned of loose mill and rust scale, dirt, ice, and other foreign material which may reduce the bond between the concrete and reinforcing. Where there is delay in placing concrete after reinforcement is in place, bars shall be re-inspected and cleaned when necessary.
- B. Welded Wire Mesh: Wire mesh used for reinforcement shall be spread flat before placing concrete. Mesh reinforcement shall be held firmly in place against vertical or transverse movement by means of satisfactory devices. Where mesh reinforcement is spliced, it shall be lapped at least 12 inches.
 - 1. Unless designated otherwise on the Contract Documents, wire mesh shall be placed midway within the depth, and parallel to the finished surface of concrete pavements.
 - 2. Do not pour concrete over top of reinforcement unless it is supported underneath.
 - 3. Contractor shall pull reinforcement up immediately after pouring concrete to make sure that the reinforcement is in the middle of the slab and not sitting on the bottom.
- C. Reinforcing Steel: After forms have been coated with form release agent, but before concrete is placed, reinforcing steel anchors shall be securely wired in the exact position called for, and shall be maintained in that position until concrete is placed and compacted.
 - 1. Any bar showing cracks after bending shall be discarded.
 - 2. Chair bars and supports shall be provided in a number and arrangement satisfactory to the Owner's Representative.
- D. Unless otherwise indicated on the Contract Documents, reinforcing shall extend within 2 inches of formwork and expansion joints.
 - 1. Reinforcing shall continue through control joints.
- E. The Owner may do core testing to make sure that reinforcement is in the proper position. If testing shows otherwise concrete will be rejected and the Contractor shall remove all rejected slabs and re-pour new slabs at no additional cost. Contractor shall repair cored holes as directed by the Owner's Representative.

3.04 EXPANSION JOINTS

- A. Expansion joints shall be one-half inch wide and shall be as located on the Contract Documents. Expansion joint shall be formed in the concrete to required width with preformed joint filler in place. Joint filler shall extend the full depth of the slab. Joint filler shall extend the full length of the expansion joint.
 - 1. For concrete banding and concrete pavements and pads, depth of joint filler shall be as required to form a three-quarter inch deep sealant recess below finished concrete surface.
- B. Place expansion joints spaced 20 feet on center maximum. When provided, clarification documents that show specific locations of expansion joints shall direct the Contractor where to place expansion joints. Such clarification documents may place joints closer than 20 feet on center. In the absence of

clarification documents the language of this SECTION, REINFORCED CONCRETE PAVING, shall govern.

1. Expansion joints shall be placed where pavement meets flush foundations and footings, concrete or bituminous concrete curbing or other vertical structures, including light bases, hydrants, walls, buildings, piers and walls, and at other conditions as shown on the Contract Documents.
2. Contractor shall request the presence of the Owner's Representative to review the layout of expansion joints prior to pouring the concrete.
3. Follow the manufacturer's application recommendations for joint filler and sealer.
4. Joint alignment shall be straight and true.

C. Where expansion dowels are used in the expansion joints, dowels, and greased sleeves shall be set parallel with the top and bottom surfaces of the concrete slab.

3.05 REINFORCED PORTLAND CEMENT CONCRETE PAVING

- A. Paving mix, equipment, methods of mixing and placing, and precautions to be observed as to weather, condition of base and the like, shall meet the requirements of ACI 316R. Pavement shall be constructed in accordance with the Contract Documents.
- B. The Owner's Representative shall be notified of concrete placement sufficiently in advance of start of operation to allow his representative to complete preliminary inspection of the work, including subgrade, forms, and reinforcing steel, if used.
 1. No concrete shall be deposited until the Owner's Representative has inspected the placing of reinforcement and given permission to place concrete.
- C. Normal concrete placement procedures shall be followed. Concrete shall arrive at the job site so that no additional water will be required to produce the desired slump. When conditions develop that required addition of water to produce the desired slump, permission of the Owner's Representative must be obtained. The concrete shall be transported from the mixer to its place of deposit by a method that will prevent segregation or loss of material.
 1. Concrete pavement shall be placed in a series of alternate pours such that every other panel bounded by expansion joints shall be poured first.
 2. The intervening panels shall then be poured as a secondary operation only after the first panels have hardened sufficiently to allow the removal of all temporary transverse forming supports.
 3. Concrete shall be placed in one course, to full depth, as detailed on the Contract Documents.
- D. Work shall not be performed during rainy weather or when temperature is less than 40° Fahrenheit. In the event that unforeseen rain occurs, cover all broom finished concrete surfaces with plastic sheet covering to prevent alteration of texture. Concrete slabs with textured concrete surfaces altered by rain shall be removed from the site as directed by the Owner's Representative.
- E. Adjacent work shall be protected from stain and damage during entire operation. Damaged and stained areas shall be replaced or repaired to equal their original conditions.
- F. Existing concrete, earth, and other water-permeable material against which new concrete is to be placed shall thoroughly damp when concrete is placed. There shall be no free water on surface.
- G. Concrete which has set or partially set before placing shall not be employed. Re-tempering of concrete will not be permitted.
- H. Concrete shall be thoroughly spaded and tamped to secure a solid and homogeneous mass, thoroughly worked around reinforcement and into corners of forms.
- I. When joining fresh concrete to concrete which has attained full set, latter shall be cleaned of foreign matter, and mortar scum and laitance shall be removed by chipping and washing. Laitance is the accumulation of fine particles on the surface of freshly poured concrete caused by an upward movement of water through the concrete. This can be caused by too much mixing water, by excessive tamping, or by vibration of the concrete. Clean, roughened base surface shall be saturated with water, but shall have no free water on surface. A coat of 1:1 cement-sand grout, approximately one-eighth

inch thick, shall be well scrubbed into thoroughly dampened concrete base. New concrete shall be placed immediately, before grout has dried or set.

3.06 FINISHING

- A. Concrete flatwork surfaces shall be screeded off and hand floated and finished true to line and grade, and free of hollows and bumps. Surface shall be dense, smooth, and at exact level and slope required.
 - 1. Finished concrete surface for subbases for unit pavement systems shall be wood-floated to a slightly rough surface. Surface shall not deviate more than one-quarter inch in 10 feet.
 - 2. Finished concrete surface for concrete walks, pads, and concrete bands shall be wood-floated and steel troweled to a smooth surface. Surface shall not deviate more than one-eighth inch in 10 feet.
- B. Unless otherwise indicated, horizontal surfaces of concrete pavement which will be exposed shall be given a light broomed finish, with direction of grooves in concrete surface perpendicular to length of concrete sidewalks, landings, and pads. After concrete has set sufficiently to prevent coarse aggregate from being torn from surface, but before it has completely set, brooms shall be drawn across it to produce a pattern of small parallel grooves. Broomed surface shall be uniform, with no smooth, unduly rough or porous spots, or other irregularities. Coarse aggregate shall not be dislodged by brooming operation.
- C. Where finishing is performed before end of curing period, concrete shall not be permitted to dry out, and shall be kept continuously moist from time of placing until end of curing period, or until curing membrane is applied.
- D. Immediately following finishing operations, arrises at edges and both sides of expansion joints shall be rounded to one-quarter inch radius.
- E. Control Joints:
 - 1. Control joints shall be tooled with scored joints made by scoring into slab surface with scoring tool.
- F. All scoring, tooling, and finishing of the concrete shall be subject to the review and approval of the Owner's Representative at any time during the construction project. The Contractor shall remove and replace, at no additional cost to the Owner, all concrete which is not acceptable to the Owner's Representative.
- G. Where finishing is performed before end of curing period, concrete shall not be permitted to dry out, and shall be kept continuously moist from time of placing until end of curing period, or until curing membrane is applied.

3.07 CURING

- A. It is essential that concrete be kept continuously damp from time of placement until end of specified curing period. It is equally essential that water not be added to surface during floating and troweling operations, and not earlier than 24 hours after concrete placement. Between finishing operations surface shall be protected from rapid drying by a covering of waterproofing paper. Surface shall be damp when the covering is placed over it and shall be kept damp by means of a fog spray of water, applied as often as necessary to prevent drying, but not sooner than 24 hours after placing concrete. None of the water so applied shall be troweled or floated into surface.
- B. Concrete surfaces shall be cured by completely covering with curing paper or application of a curing compound.
 - 1. Concrete cured using waterproof paper shall be completely covered with paper with seams lapped and sealed with tape. Concrete surface shall not be allowed to become moistened between 24 and 36 hours after placing concrete. During curing period surface shall be checked frequently and sprayed with water as often as necessary to prevent drying, but not earlier than 24 hours after placing concrete.
 - 2. If concrete is cured with a curing compound, compound shall be applied at a rate of 200 square feet per gallon, in two applications perpendicular to each other.
 - 3. Curing period shall be seven days minimum.

3.08 CONTROL JOINTS

- A. Unless otherwise indicated, control joints shall be tooled into the concrete slab, with 3 inches wide border and troweled edges, in pattern indicated on the Contract Documents, or every 5 feet on center maximum. Joint shall be made after concrete is finished and when the surface is stiff enough to support the weight of workmen without damage to the slab, but before slab has achieved its final set.
 - 1. Scoring shall cut into slab surface 1 inch minimum, but in no case shall scoring be less than 25 percent of slab depth.

3.09 COLD WEATHER CONCRETING

- A. Materials for concrete shall be heated when concrete is mixed, placed, or cured when the mean daily temperature is below 40 degrees Fahrenheit or is expected to fall to below 40 degrees Fahrenheit within 72 hours, and the concrete after placing shall be protected by covering, heat, or both.
- B. Details of handling and protecting of concrete during freezing weather shall be subject to the approval and direction of the Owner's Representative. Procedures shall be in accordance with provisions of ACI 306R.

3.10 HOT WEATHER CONCRETING

- A. Concrete just placed shall be protected from the direct rays of the sun and the forms and reinforcement just prior to placing shall be sprinkled with cold water. Every effort shall be made to minimize delays which will result in excessive mixing of the concrete after arrival on the job.
- B. During periods of excessively hot weather (95 degrees Fahrenheit., or above), ingredients in the concrete shall be cooled insofar as possible and cold mixing water shall be used to maintain the temperature of the concrete at permissible levels all in accordance with the provisions of ACI 305. Any concrete with a temperature above 95 degrees Fahrenheit, when ready for placement will not be acceptable, and will be rejected.
- C. Temperature records shall be maintained throughout the period of hot weather giving air temperature, general weather conditions (calm, windy, clear, cloudy, and the like.) and relative humidity. Records shall include checks on temperature of concrete as delivered and after placing in forms. Data should be correlated with the progress of the work so that conditions surrounding the construction of any part of the structure can be ascertained.

3.11 PROTECTION OF CONCRETE SURFACES

- A. Concrete surfaces shall be protected from traffic or damage until surfaces have hardened sufficiently. If necessary one-half inch, thick plywood sheets shall be used to protect the exposed surface.
- B. The Contractor shall provide adequate surveillance for all poured-in-place concrete pavements until concrete has set firmly, to prevent unwarranted markings of the concrete surface. Any unauthorized marking or graffiti in the finished surfaces shall be a cause for rejection by the Owner's Representative and replacement by the Contractor.

3.12 ACCEPTANCE STANDARDS

- A. The following acceptance standards shall be applied to this Contract. These standards are considered superior to typical industry standards. Any portion of the concrete paving that does not come up to these required acceptance standards shall be removed at the direction of the Owner's Representative. Saw cut pavement at nearest adjacent tooled joint, remove concrete pavement and discard off site in a legal manner and replace with new concrete pavement meeting the requirements of this Section, REINFORCED CONCRETE PAVING.
 - 1. Pavement surfaces shall be free of all cracking.
 - 2. Pavement surfaces shall not pond water.
 - 3. Pavement surfaces shall be free of visible high and low spots.
 - 4. Steel mesh reinforcing shall not penetrate the surfaces or sides of the concrete slab.

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5. Tooled joints and all expansion joints shall be straight, true, uniform in width and free from twists, bends, kinks and misalignments.
6. Saw cut joints shall be free of chips and spauling at joint edges.
7. Tooled edges and the associated edging patterns shall be consistent, true, crisp and complete.
8. Broom finish shall not be too coarse in the opinion of the Owner's Representative.
9. Broom finish shall be constant and complete between joints without bare spots, lifts or disconnections in broom pattern.
10. Pavement shall show no graffiti. Pavement shall show no rubbed surfaces indicative of attempts to erase graffiti.
11. Expansion joints and score joints shall be placed as required by the Contract Documents.
12. Concrete surfaces shall be free of all stains, including those created during the course of the construction by the Contractor, caused by natural events, or caused by vandalism.
13. All tooled joints and expansion joints shall be flush.
14. Stains from construction or from natural causes
15. Pours different in color as determined by the Owner's Representative.
16. Pours without expansion joints cast into them.
17. Pours not conforming to the Contract Documents.
18. All forms shall be removed from the site.

END OF SECTION

SECTION 32 17 23: PAVEMENT MARKINGS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

- A. The work of this Section consists of providing labor, equipment, materials, incidental work, and construction methods necessary to furnish and install pavement markings, as indicated on the Contract Documents and as specified.

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 1. Division 32 Section: ASPHALT PAVING

1.04 REFERENCES

- A. The following standards shall apply to the work of this Section.
 1. Massachusetts Department of Transportation (MassDOT) Specifications Standard Specifications for Highways and Bridges
 2. Manual of Uniform Traffic Control Devices and the Standard Municipal Traffic Code (MUTCD), latest edition

1.05 SUBMITTALS

- A. Submit product data for pavement markings for Landscape Architect's approval.

1.06 QUALITY ASSURANCE

- A. Unless otherwise specified, work and materials for pavement marking shall conform to the applicable portions of the following:
 1. MassDOT Specifications Section 860

1.07 LAYOUT OF WORK

- A. The Contractor shall furnish to the Landscape Architect for approval a schedule of pavement marking operations in accordance with the following:
 1. MassDOT Specifications Section 860.61

1.08 TRAFFIC CONTROL

- A. Suitable warning signs shall be placed near the beginning of the work site and well ahead of the work site for alerting approaching traffic from both directions.
- B. Place traffic cones along newly painted lines to control traffic and prevent damage to newly painted surfaces. Remove when paint has dried fully.
- C. Painting equipment shall be marked with large warning signs indicating slow moving painting equipment in operation.

PART 2 – PRODUCTS

2.01 MATERIALS – TRAFFIC PAINT

- A. Pavement-Marking Paint: Shall conform with Mass DOT Standard Specifications M01.07.05. Color shall be white.

PART 3 – EXECUTION

3.01 SURFACE PREPARATION

- A. New pavement surfaces shall be allowed to cure for a period of not less than 48 hours before application of marking materials.
- B. Dust, dirt, and other granular surface deposits shall be removed by sweeping, blowing with compressed air, rinsing with water, or a combination of these methods, as required. Rubber deposits, surface laitance, existing paint markings, and other coatings adhering to the pavement shall be completely removed using scrapers, wire brushes, sandblasting, approved chemicals, or mechanical abrasion, as directed.
- C. Where oil or grease are present on old pavements to be marked, affected areas shall be scrubbed with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinsed thoroughly after each application. After cleaning, oil-soaked areas shall be sealed with cut shellac to prevent bleeding through the new paint.

3.02 APPLICATION – GENERAL

- A. Marking materials shall be applied to clean, dry surfaces in accordance with the requirements of MassDOT Specifications Section 860.62.
- B. Pavement marking materials shall be applied evenly to the pavement surface to be coated to the thickness specified in MassDOT Specifications Section 860.62.
- C. Guidelines and templates shall be employed as necessary to control paint application. Special precautions shall be taken in marking numbers, letters, and symbols. Refer to the Contract Documents for special patterns for numbers, letter and symbols.
- D. Edges of markings shall be sharply outlined.

3.03 PROTECTION OF MARKINGS

- A. Markings shall remain protected in accordance with MassDOT Specifications Section 860.63.

3.04 ACCEPTANCE STANDARDS

- A. The following acceptance standards shall be applied to this Contract. These standards are considered superior to typical industry standards. Any portion of the pavement markings that does not come up to these required acceptance standards shall be removed at the direction of the Landscape Architect. Sandblast or otherwise remove unacceptable pavement markings as required by the Landscape Architect and replace with new pavement markings that meet the requirements as specified under this Section, at no additional cost to the Owner.
 - 1. Puddles and thick accretions at the ends of lines of pavement markings.
 - 2. Pavement markings that diverge from alignment.
 - 3. Solid line pavement markings that show kinks, bends, bumps or other deformities from true alignment.

END OF SECTION

SECTION 32 30 00: SITE IMPROVEMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

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

1. Bench – provided by owner
2. Drinking fountain – provided by owner
3. Trash receptacle – provided by owner
4. Dog waste bag dispenser – provided by owner
5. Bulletin board – provided by owner
6. Picnic table – provided by owner
7. Detectable warning tiles
8. Vehicular gate
9. Wooden guardrail
10. Set logs
11. Wood chip mulch

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 1. Division 32 Section: ASPHALT PAVING
 2. Division 32 Section: REINFORCED CONCRETE PAVING
 3. Division 32 Section: CHAIN LINK FENCES & GATES

1.04 REFERENCES

- A. The following standards shall apply to the work of this Section:
 1. Massachusetts Department of Transportation (MassDOT):
Specifications Standard Specifications for Highways and Bridges
 2. ASTM: American Society for Testing and Materials

1.05 SUBMITTALS

- A. Shop Drawings and Manufacturer's Product Literature
 1. Detectable warning tiles
 2. Vehicular gate
 3. Wooden guardrail
- B. Samples: Submit samples of all finishes and colors from the manufacturer for the following:
 1. Set logs - photos
 2. Wood chip mulch

C. Provide manufacturer's warranties for all site improvements items.

1.06 **QUALITY ASSURANCE**

A. Environmental Compliance: comply with State and Local environmental regulations.

1.07 **DELIVERY, STORAGE & HANDLING**

A. Do not deliver site amenities to the site, until all specified submittals have been submitted to, and approved by, the Landscape Architect.

B. Store products inside, under cover, and in manner to keep them dry, protected from weather, direct sunlight, surface contamination, corrosion and damage from construction traffic and other causes.

1.08 **GUARANTEE**

A. The Contractor shall furnish and deliver standard written manufacturer's guarantee in Owner's name covering all materials and workmanship under this Section, SITE IMPROVEMENTS, in addition to, and not in lieu of, guarantee requirements set forth under Division 01, GENERAL REQUIREMENTS, and other liabilities which the Contractor may have by law or other provisions of the Contract Documents.

B. Supplier shall pay for repairs of any damage to any part of the project caused by defects in his work and for any repair to the materials or equipment caused by replacement. All repairs are to be done to the satisfaction of the Architect.

C. Any part of the work installed under this contract requiring excessive maintenance shall be considered as being defective and shall be replaced by the Supplier during the one year guarantee period at no cost to the Owner.

PART 2 – PRODUCTS

2.01 **GENERAL INSTALLATION**

A. Where anchors, bolts or fasteners are exposed, they shall be configured or secured in such a way as to prevent their casual removal by use of vandal-proof heads or fastenings unless otherwise specified on Drawings.

B. Provision and delivery of all metal inserts, anchor slots, anchors, anchor bolts, fastenings, and other fastening devices, for attachment of trash receptacles, and recycle bins to concrete and masonry, except as otherwise specified under other Sections of this Specification, shall be provided by the manufacturer. Installation of all such fastening devices shall be part of the work of this Section, SITE IMPROVEMENTS.

C. Free-standing site improvement items shall be set plumb and horizontal regardless of the pitch of the finished surrounding grade unless otherwise shown on the Contract Documents.

D. The Contractor shall be responsible for timing the delivery of site improvement items so as to minimize the on-site storage time prior to installation.

E. Contractor shall be responsible for the correct location of site improvement items according to the Contract Drawings. Take particular care to maintain shapes, plumb and level during the pouring of concrete.

F. All Work shall be accurately set to established lines and elevations and rigidly set in place to supporting construction.

2.02 **BENCH**

A. Benches to be provided by owner.

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- B. Contractor responsible for assembly and installation.
- C. Anchor bolts shall be 3/8"x 4" stainless steel wedge anchor with hex nut and stainless steel washer, not supplied by the manufacturer.

2.03 DRINKING FOUNTAIN

- A. Drinking fountains (2) to be provided by owner.
- B. Owner's plumber will install the water line from the concessions building to the drinking fountain location and will make the water connection from the supply line to the drinking fountain supply connections after the contractor has installed the drinking fountain.
- C. Contractor responsible for assembly and anchoring of the drinking fountain.
- D. Anchor bolts shall be 3/8"x 4" stainless steel wedge anchor with hex nut and stainless steel washer, not supplied by the manufacturer.

2.04 TRASH RECEPTACLE

- A. Trash receptacles to be provided by owner.
- B. Contractor responsible for assembly and installation.
- C. Anchor bolts shall be 3/8"x 4" stainless steel wedge anchor with hex nut and stainless steel washer, not supplied by the manufacturer.

2.05 DOG WASTE BAG DISPENSER

- A. Dog waste bag dispensers to be provided by owner.
- B. Contractor responsible for assembly and installation.
- C. Anchor bolts shall be 3/8"x 4" stainless steel wedge anchor with hex nut and stainless steel washer, not supplied by the manufacturer.

2.06 BULLETIN BOARD

- A. Bulletin board to be provided by owner.
- B. Contractor responsible for assembly and installation.
- C. Anchor bolts shall be stainless steel, not supplied by the manufacturer.
- D. Install bulletin board per manufacturer instructions.

2.07 PICNIC TABLE

- E. Picnic tables to be provided by owner.
- F. Contractor responsible for assembly and installation.
- G. Anchor bolts shall be 3/8"x 4" stainless steel wedge anchor with hex nut and stainless steel washer, not supplied by the manufacturer.

2.08 DETECTABLE WARNING TILES

- A. Detectable warning tiles shall be unpainted cast iron, produced by Neenah Foundry or approved equal.

2.09 VEHICULAR GATE

- A. Workmanship and finish shall be equal to the best practice of modern shops for each item of work. Exposed surfaces shall have a smooth finish and sharp, well defined lines and arrises. Sections shall be well formed to shape and size with sharp lines and angles; curved work shall be sprung evenly to curves. Welding shall be in accordance with the Structural Welding Code of the American Welding Society. All welding, except as otherwise indicated, shall extend the entire

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length of joints. All welded face joints shall be ground flush and smooth.

- B. Gate shall be constructed with 1-7/8" O.D. and 2-7/8" galvanized steel framework.
- C. Hinge post shall be 2-7/8" O.D. galvanized steel upright to serve as pivot point, sleeved over a galvanized receiving post. Latch post shall be 2-7/8" O.D. galvanized steel with knox box.
- D. Knox box shall be galvanized steel key lock box. Door $\frac{1}{2}$ " thick steel, walls $\frac{1}{4}$ " thick steel. Hinged door with weather resistant seal. Capacity for up to 10 keys. UL listed. Manufactured by Knox Company or an approved equal. Anchor to gate post with two stainless steel bolts (vandal resistant).
- E. Post caps to be welded with grease fitting
- F. Top horizontal rail shall have adhesive high reflective tape.
- G. Town shall provide chain and keyed padlock.
- H. Concrete for footing shall be 4,000 psi, 28 day concrete per the MassDOT Standard Specification.

2.10 WOODEN GUARDRAIL

- A. Timber dimensions and sizing shall be as shown on Contract Drawings.
- B. All hardware shall be galvanized or stainless steel.

2.11 SET LOGS

- A. Logs shall be cut from selected removed trees on site, and be approved by the landscape architect.
- B. Minimum diameter to be 8", lengths may vary but be no less than 6' in length.
- C. Any loose bark must be removed, all edges and ends to be eased and sanded.

2.12 PADS & FOOTINGS

- A. Concrete footings and pads shall be 4,000 pounds per square inch cast-in-place concrete.

2.13 WOOD CHIP MULCH

- A. Composition: 100% pre-consumer recovered wood.
Dimensions: Randomly sized wood fibers. 100% of chips shall pass a $\frac{3}{4}$ " sieve. 75% of chips shall pass a $\frac{3}{8}$ " sieve. Maximum 15% of chips shall pass No. 16 sieve.
Chips shall be free of metals.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Inspect all surfaces and verify that they are in proper condition to receive the work of this Section.
- B. Beginning of installation means acceptance of existing project conditions.

3.02 BENCH

- A. Install to follow grade. Install benches in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Drill holes for anchor bolts based on bolt pattern of installed bench. Drill diameter in accordance with bolt manufacturer instructions.

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C. Set benches level and square to concrete pavement unless otherwise shown.

D. Anchor benches securely in place.

3.03 DRINKING FOUNTAIN

A. Drinking fountain shall be surface mounted to concrete secured with anchor bolts through a mounting plate that is welded to the fountain. Access to base through access door with vandal resistant stainless-steel screws.

B. Install plumb and level.

C. Drinking fountain must comply with Massachusetts Architectural Access Board (MAAB) Rules & Regulations 521 CMR 17.00 for drinking fountains.

3.04 TRASH RECEPTACLE

A. Install trash receptacle on concrete pad as shown on the Contract Drawings.

B. Install plumb and level.

C. Access door shall be open towards the adjacent pathway.

3.05 DOG WASTE DISPENSER

A. Install dog waste dispenser as shown on the Contract Drawings.

B. Install it plumb.

3.06 BULLETIN BOARD

A. Install bulletin board on concrete pad as shown on the Contract Drawings.

B. Install plumb and level.

C. Access door shall be open towards the adjacent pathway.

3.07 PICNIC TABLE

A. Install trash receptacle on concrete pad as shown on the Contract Drawings.

B. Install plumb and level.

3.08 DETECTABLE WARNING TILES

A. The Detectable Warning Strip shall be set directly in poured concrete according to the plans and the manufacturer's specifications or as directed by the Owner's Representative. The contractor shall place two 25 pound concrete blocks or sandbags on each tile to prevent the tile from floating after installation in wet concrete.

3.09 VEHICULAR GATE

A. Gate shall be installed plumb and level.

B. Fabricate and install the vehicular gate as shown on the Contract Documents, and in accordance with approved Shop Drawings.

3.10 WOODEN GUARDRAIL

A. Wooden guardrail posts shall be installed plumb, and all rails shall be set to follow the grade.

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- B. Fabricate and install the wooden guardrail as shown on the Contract Documents, and in accordance with approved Shop Drawings.

3.11 SET LOGS

- A. Logs to be set with #4 rebar, 36" min. in length with hardwood dowel plug to cover rebar end fully.
- B. Stacked logs to be secured with stainless lag screws, with hardwood dowel plug on end.
- C. Landscape architect to review layout in field prior to staking.

END OF SECTION

SECTION 32 31 13: CHAIN LINK FENCE & GATES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to furnish and install the fence work of this Section, as indicated on the Contract Documents and as specified herein.
 - 1. Vinyl-coated chain link fence
 - 2. Vinyl-coated chain link gates

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 - 1. Division 32 Section: ASPHALT PAVING
 - 2. Division 32 Section: REINFORCED CONCRETE PAVING
 - 3. Division 32 Section: SITE IMPROVEMENTS

1.04 QUALITY ASSURANCE

- A. Prior to installation the fence contractor shall provide the fence manufacturer's notarized certification to the Owner's Representative that the vinyl-coated chain link fabric is warranted by the manufacturer for a minimum of 15 years against rust and corrosion.
- B. Fence fabricator qualifications sufficient production capability and 10 years' experience with comparable work.
- C. Welding qualifications: Processes/operators in accordance with American Welding Society. Welders passed AWS test in last 12 months.
- D. Environmental Compliance: Comply with State and Local environmental regulations.

1.05 REFERENCES

- A. The following standards shall apply to the work of this Section.

- 1. AWS: American Welding Society
 - D1.1 Structural Welding Code
- 2. ASTM: American Society for Testing and Materials
 - A-90/A90M Standard Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc Alloy Coatings
 - A 123 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
 - A 307 Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
 - A392 Standard Specification for Zinc-coated Steel Chain Link Fence Fabric
 - A491 Standard Specification for Aluminum-coated Steel Chain Link Fence Fabric
 - A1011/A1011M Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Allow and High Strength Low-alloy with

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	Improved Formability
A500	Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
A900	Standard Specification for Industrial and Commercial Swing Gates
B-6	Standard Specification for Zinc
B-117	Standard Practice for Operating Salt Spray (Fog) Apparatus
F567	Standard Practice for Installation of Chain-Link Fence
F668	Standard Specification for Poly (Vinyl Chloride) (PVC) and Other Organic Polymer-Coated Steel Chain-Link Fence Fabric
F964	Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Exterior Profiles Used for Fencing
F1043	Standard Specification for Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework
F1083	Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
3.	Massachusetts Department of Transportation (MassDOT): Standard Specifications for Highways and Bridges

1.06 SUBMITTALS

- A. Prior to ordering the below listed materials, submit sample to Owner's Representative for approval. Sample shall be representative of designated items. Do not order materials until Owner's Representative's approval has been obtained. Delivered materials shall closely match the approved samples.
- B. Submit manufacturer's product data and certification for the following:
 1. Chain Link Fence: Each fence fabric type
 2. Chain Link Fence: Each size of pipe
 3. Chain Link Fence: Each type of hardware and fitting
 4. Chain Link Fence: Gates
 5. Chain Link Fence: Manufacturer's vinyl coating system
- C. Samples - Samples shall be submitted for approval for all fence materials to be furnished under this Section prior to the start of construction. Three (3) samples, approximately 3" long or 6" square, (of fabric material) post sections and typical accessories shall be submitted for approval. Samples shall also be submitted, in factory-sealed containers, of the cold galvanizing compound and the anchoring cement.
- D. Submit complete shop drawings of each type of fence and gate for Owner's Representative's approval.
 1. Shop drawings shall show typical materials, elevations, connections, fittings, and details for all elements as well as detailed layout showing all post locations.
 2. Submit a complete schedule of all fencing and gates showing all post locations and fabric type locations on the project.

1.07 PRODUCT DELIVERY STORAGE & HANDLING

- A. Deliver material in manufacturer's original packaging with all tags and labels intact and legible. Handle and store materials in such a manner as to avoid damage.

PART 2 – MATERIALS

2.01 POSTS, RAILS & BRACES

- A. All fence pipes shall be cold-formed steel, schedule 40 pipe conforming to ASTM A-1201, or approved equal.
- B. All structural shapes shall be vinyl coated with a minimum 15 mils thick coating of plasticized polyvinyl-chloride applied by fusion method over a thermoset plastic bonding agent. The bond shall exhibit equal or greater strength than cohesive strength of the vinyl. All cut ends shall be coated with vinyl.

1. The color shall be black.

2.02 5-FOOT TERMINAL, CORNER & PULL POSTS

- Corner posts, terminal and pull posts: Fences up to and including 6 feet in height: 2.875 inches O.D. pipe, weighing at least 5.79 pounds per linear foot with a 2.0 ounces per square foot zinc coating minimum and shall have moisture proof post caps with acorn type design.
- Line Posts (10-foot maximum spacing): Fabric up to 6 feet in height: 2.37 inches pipe weighing 3.65 pounds per linear foot.
- All structural shapes shall be vinyl coated with a 10 mil minimum thick coating of plasticized polyvinyl-chloride applied by fusion method over a thermoset plastic bonding agent. The bond shall exhibit equal or greater strength than cohesive strength of the vinyl. All cut ends shall be coated with vinyl.

2.03 5-FOOT TOP & BOTTOM RAILS

- 5-foot fence: 1.9 inches O.D. pipe weighing 2.72 pounds per linear foot furnished in manufacturer's standard lengths of approximately 21 feet with outside sleeve type couplings, at least 6 inches long for each joint - one coupling in each 5 to have expansion spring. Provide means for attaching top rail securely to each corner, pull and end post. Top rail shall form continuous brace from end to end of each run of fence.
- All structural shapes shall be vinyl coated with 10 mil minimum thick coating of plasticized polyvinyl-chloride applied by fusion method over a thermoset plastic bonding agent. The bond shall exhibit equal or greater strength than cohesive strength of the vinyl. All cut ends shall be coated with vinyl.

2.04 FENCE FABRIC

- The fabric shall be vinyl coated steel chain link conforming to ASTM Designation A491-63T in its entirety. A zinc coating of the fabric shall be a minimum of 0.30 ounces per square foot of uncoated wire surface. The weight of zinc coating on the fabric shall be determined in accordance with ASTM A-90. The fabric shall then be vinyl coated with a minimum thickness of 7 mils thick coating of plasticized polyvinyl-chloride applied by fusion method over a thermoset plastic bonding agent. The bond shall exhibit equal or greater strength than cohesive strength of the vinyl. All cut ends shall be coated with vinyl at the factory.
 1. The color shall be black.
- The fabric shall be supplied in the following size:
 1. 2-inch mesh, 5 gauge (6 gauge, 0.192-inch core) for general uses

C. All fabric shall be furnished with top and bottom selvage knuckled, both sides.

2.05 FENCE ACCESSORIES

- All accessories shapes shall be vinyl coated with a 7 mil minimum thick coating of plasticized polyvinyl-chloride applied by fusion method over a thermoset plastic bonding agent. The bond shall exhibit equal or greater strength than cohesive strength of the vinyl. All cut ends shall be coated with vinyl.
 1. The color shall be black.
- Fittings and other appurtenances, including nuts and bolts, shall be aluminum alloy, galvanized pressed steel, malleable or cast steel as specified, epoxy-phenolic primed and coated with matching vinyl (PVC) by the fusion-bond method in accordance with ASTM F668 Class 2b.

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- C. Post Tops: Pressed steel or malleable iron, designed as weather tight closure cap (for tubular posts). Provide one cap for each post. Where top rail is used, provide tops to permit passage of top rail.
- D. Stretcher Bars: One piece lengths equal to full height of fabric with minimum cross section of 3/16 of an inch x 3/4 of an inch. Provide one stretcher bar for each end post and two for each corner and pull post.
- E. Stretcher Bar Bands: Heavy pressed steel or malleable iron of 1/8 of an inch x 3/4 of an inch minimum cross-section and be of sufficient size to secure stretcher bars to end, corner and pull posts.
- F. Rail Clamps: Rail clamps shall be standard clamps (boulevard Clamps) furnished complete with fasteners with ASTM Designation A153.
- G. Fabric Bands: Fabric shall be attached using Self-Locking Fabric Bands as manufactured by ADC Manufacturing in Harrison, AZ or an approved equal.
- H. Anchoring Cement: Cement for anchoring posts embedded in ledge or concrete shall be "Super POR-rok", as manufactured by Hallemite (Lehn and Fink Industrial Products Division of Sterling Drugs, Inc.), Mantvale, New Jersey, or approved equal.
 - 1. "Sika Colma-Dur" by the Sika Co.
 - 2. "Five Star Grout" by the Five Star Co.
- I. Concrete: Cement Concrete shall conform to the standard specifications of the Department of Public Works Commonwealth of Massachusetts for Class D air entrained Portland Cement Concrete with a 1- to 3-inch slump.

2.07 5-FOOT CHAIN LINK FENCE GATES

- A. All materials shall be as specified above.
- B. Gate posts shall be 2.875 inches O.D., weighing 5.79 pounds per linear foot.
- C. Gate frames (top, bottom, and sides rails) shall be 1.9 inches O.D., weighing 2.72 pounds per linear foot. Middle rail shall be 1.66 inches O.D., weighing 2.27 pounds per linear foot.
- D. Gates shall be fabricated using welded construction.
- E. Gates must be properly braced to eliminate any possible sagging condition.
- F. Hinges shall be of sufficient strength and design to permit easy and trouble free operation.
- G. All gates shall be equipped with a positive type industrial heavy-duty latching device with a means for padlocking.
 - 1. Gate Latch, Industrial hinges and all hardware shall conform to the ASTM standards specified above.

PART 3 – EXECUTION

3.01 EXCAVATION

- A. Excavation for post footings shall be in firm undisturbed or compacted soil. Excavate the holes to the lines and grades shown on the drawings with a 6 inch minimum clearance between the bottom of the hole and the bottom of the fence post in its final location. Where ledge is encountered, the Contractor shall notify Owner's Representative to determine method of installation.

3.02 POST INSTALLATION

- A. Place concrete around posts in a continuous pour, tamp for consolidation. Check each post for vertical and top alignment and hold in position during placement and finishing operation.

1. Tops of footings are to receive a magnesium float finish and pitched as shown on the Contract Documents.
2. Tops of footings in bituminous paved areas shall conform to drawings and terminate 2-1/2 inches below pavement finish grade.

B. A change in direction of the fence line of 30 degrees or more shall be considered corners. Pull (corner) posts shall be used at any abrupt change in grade.

C. Maximum surface area of unbraced fence shall not exceed 1,500 square feet.

D. Terminal posts shall be braced to adjacent posts with horizontal brace rails and diagonal truss rods brought to proper tension so that posts are plumb.

E. There shall be no loose connections or sloppy fits in the fence framework. The fence framework shall withstand all wind and other forces due to the weather.

F. Fabric shall be stretched taut and tied to posts and rails. The fabric shall be installed on the security side of the fence and shall be anchored to the framework so that the fabric remains in tension after pulling force is released. The fabric shall be attached to line posts and rails with stainless steel self-locking metal bands, spaced to line posts at not more than 15-inch intervals and to rails and braces at not more than 24-inch intervals. The fabric shall be securely fastened to all terminal and gate posts with 1/4 inch stretcher bars with heavy No. 11 gauge pressed steel tension bands spaced approximately 12 in. apart. All bands, wires and tension bars shall conform to Federal Specification RR-F-191/4C.

3.03 FENCE ERECTION

All posts shall have continuous horizontal braces at the top and bottom. In addition, all end and corner posts shall be braced in the nearest line post with center brace rails. Outside sleeve type top rail couplings shall be placed a maximum of 12 inches from posts.

3.04 FABRIC

- A. All chain link fabric shall be fastened on the outside of the posts unless directed otherwise by the Owner's Representative. The fabric shall be properly stretched and securely fastened to the posts, and between posts the top and bottom of the fabric shall be fastened to the horizontal braces as herein specified and approved by the Owner's Representative.
- B. The fabric shall be fastened to end and corner posts with tension bars and stretcher bar bands spaced at 1-foot intervals.
- C. All fabric shall be aligned so that the top row of the fabric mesh is tied to the top rail, and so that the bottom of the fabric mesh stands 1-1/2 inches above the finish grade of the lawns, pavements, or concrete wall grade and that the bottom row of the fabric mesh is tied to the bottom rail.
- D. All fabric shall be attached using approved fabric bands. The bands shall be spaced at not more than 15-inch intervals on line posts and not more than 15-inch intervals on rails and braces. Bands shall match the fence fabric.

3.05 GATE INSTALLATION

- A. The Contractor shall install the gate sections as described herein.
- B. The gate shall be fabricated in close conformity to the lines and grades shown on the detail sketches. Welds shall be continuous fillet welds along all exposed joints. Electrodes E60XX and the shielded metal-arc process shall be used. All welding shall conform to the requirements of the latest AWS Specifications.
- C. After fabrication is completed, all rough edges shall be buffed to a rounded finish, all oil and grease film shall be removed, and all steel shall be cold galvanized with 1.5 mils thickness coating.

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- D. Excavation for post footings shall closely follow the lines and grades shown on the drawings, and the concrete shall be mixed and placed to conform to the drawings.
- E. The terminal post and the hinge post shall be set plumb to the height called for on the drawings. Attention is drawn to the importance of plumbness and proper height. Proper positioning of the posts is crucial to the free movement of the gate, and the Contractor will be responsible for resetting the posts at no extra charge if the gate does not swing freely or binds in any way.
- F. After erection, the Contractor shall brush clean all rust spots, scratches and/or abrasions on the steel surfaces and touch up these spots with one (1) coat of the approved cold galvanizing paint using procedures recommended by the manufacturer.

END OF SECTION

SECTION 32 90 00: PLANTING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to perform all planting work and related items as indicated on the Contract Documents and as specified in this Section and includes, but is not limited to, the following:
 - 1. Planting trees, shrubs, and perennials
 - 2. Planting bed preparation
 - 3. Planting maintenance
 - 4. Mulch
 - 5. Peastone gravel
 - 4. Two-year guarantee period for all plants
 - 5. Providing and placing backfill mix

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 - 1. Division 10 Section: SIGNAGE
 - 2. Division 31 Section: EARTH MOVING
 - 3. Division 32 Section: PLANTING SOIL

1.04 REFERENCES

- A. The following standards shall apply to the work of this Section.
 - 1. Michael Dirr's *Manual of Woody Landscape Plants* (latest revision 2009), or Michael Dirr's *Encyclopedia of Trees and Shrubs* (2011)
 - 2. Tree and Shrub Transplanting Manual, E.B. Himelick, 1991, International Society of Arboriculture
 - 3. American National Standards Institute (ANSI):
 - A300 Tree Care Industry Association (TCIA)
 - Z60.1 American Standard for Nursery Stock, latest edition, published by American Nursery & Landscape Association, (ANLA)

1.05 SUBMITTALS

- A. Submit proof of landscape contractor's experience to the Owner's Representative in accordance with QUALITY ASSURANCE paragraph of this Section, PLANTING.
- B. At least 30 days prior to ordering materials, the Contractor shall submit to the Owner's Representative representative samples, certifications, manufacturer's product data and certified test results for materials as specified below. No materials shall be ordered or delivered until the required submittals have been reviewed and approved by the Owner's Representative. Delivered materials shall closely match the approved samples. Approval shall not constitute final acceptance. The Owner's Representative reserves the right to reject, on or after delivery, any material which does not meet these Specifications.
- C. Material Sampling and Testing:

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1. Material Sampling and Testing of Loam Borrow from Off-Site Sources shall be specified, performed, and paid for under the work of the Division 32 Section, PLANTING SOIL, of this Specification. Testing of the off-site loam borrow shall occur in place after the loam has been spread and represents a second testing of the off-site loam borrow. The first sampling and testing shall have occurred prior to delivery of the loam as specified, performed and paid for under the work of the Division 32 Section, PLANTING SOIL, of this Specification. Additional sampling and testing of delivered and stockpiled loam or delivered and spread loam to verify that it meets the test results submitted for approval under the Division 32 Section, PLANTING SOIL, shall not be abrogated by the language of this Division 32 Section, PLANTING.
2. Material Sampling and Testing of On-Site Loam: On-site loam shall be sampled and tested as specified, performed and paid for under the Division 32 Section, PLANTING SOIL, of this Specification.
3. Planting Mulch: Submit a one cubic foot sample.
4. Ramial Wood Chip Mulch: Submit a one cubic foot sample.
5. Anti-desiccant: Submit manufacturer's product data.
6. Mycorrhizal fungal inoculant for new planting of broadleaf evergreens: Submit manufacturer's product data.
7. Compost: Submit a one cubic foot sample and supplier's certification that compost conforms to these Specifications.
8. Tree Staking System: Submit manufacturer's product data of system.
9. Watering bags: Submit manufacturer's product data of product.
10. Soil Additives: Submit manufacturer's product data for all soil additives needed to amend a specific soil in order to meet the requirements of this Section, PLANTING.

1.06 EXAMINATION OF CONDITIONS

- A. All areas to be planted shall be inspected by the Contractor before starting work and any defects such as incorrect grading or inadequate drainage shall be reported to the Owner's Representative prior to beginning this work.
- B. The Contractor shall be solely responsible for judging the full extent of work requirements involved, including but not limited to the potential need for storing and maintaining plants temporarily and/or re-handling plants prior to final installation.
- C. All plants are the full responsibility of the Contractor between the time of digging at the nursery and final acceptance.

1.07 QUALITY ASSURANCE

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

PART 2 – PRODUCTS

2.01 LOAM BORROW

- A. Loam borrow for planting shall be specified, provided, installed and paid for under the work of the Division 32 Section, PLANTING SOIL, of this Specification.

2.02 SOIL ADDITIVES

- A. Soil additives shall be specified, provided, installed, and paid for under Section, PLANTING SOIL, of this Specification.
- B. All trees, shrubs, groundcovers, and perennials shown to be planted in areas with compacted soils that are not otherwise noted to be de-compacted shall be scarified to the depth noted on the planting details in the Contract Drawings prior to planting and planting soil and amendments added.

2.03 GRADES & STANDARDS OF PLANTS

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- A. The Contractor shall furnish all plants shown on the Contract Documents, as specified, and in quantities listed on the PLANT SCHEDULE. No substitutions will be permitted, without written approval by the Owner's Representative. All plants shall be nursery grown unless specifically authorized to be collected as noted on the PLANT SCHEDULE.
- B. All plants shall be typical of their species or variety and shall have a normal habit of growth and be legibly tagged with the proper name. Only plant stock grown within Hardiness Zones 1 through 6b, as established by the USDA Plant Hardiness Zone Map, latest edition, will be accepted.
- C. Plants shall be in accordance with ASNS Standards of the American Nursery & Landscape Association except as noted in this Section, PLANTING. Botanical plant names shall be in accordance with plant designations included in Dirr's *Manual of Woody Landscape Plants*.
- D. Plant materials that are grown in-ground shall be dug before deciduous trees leaf out, approximately May 1 (in Massachusetts). No in-ground plants dug after May 1 shall be accepted.
- E. If, at any time during the performance of the Contract, any plant shows signs of graft incompatibility, as determined by the Owner's Representative, then the tree or shrub and all other similarly grafted plants of the same Genus/Species/Variety shall be rejected and removed from the site. Visual symptoms of graft incompatibility as cause for rejection include:
 - 1. Development of over-growths by rootstock or scion resulting in the development of shoulders or inverted shoulders.
 - 2. Suckering of the rootstock combined with poor growth or dieback of scion.
 - 3. Any mechanical weakness between scion and rootstock.
 - 4. Any marked difference in bark pattern and structure between scion and rootstock.
- F. All deciduous trees shall meet the following standards:
 - 1. Trees shall have a single, straight trunk, well formed, and sturdy. No part of the trunk shall be conspicuously crooked as compared with normal trees of the same variety.
 - 2. Trees with multiple leaders shall conform to all standards noted in this Section, PLANTING for single leader trees and shall be accepted only as noted on the PLANT SCHEDULE.
 - 3. All pruning wounds shall show vigorous bark on all edges at the time of harvest. Trees shall be free from all signs of pest and disease damage. The trunk shall be free from sun scald, frost cracks, and wounds resulting from abrasions, fire, animal damage, or other causes.
 - 4. Pruning scars within the crown of any tree shall be clean cut and shall leave no protrusion beyond the branch collar.
 - 5. All trees shall have healthy, vigorous leaves or needles of normal size, color, shape, and texture for the particular species and variety.
 - 6. Deciduous shade trees and deciduous flowering trees shall have fall color typical for their species and variety.
 - 7. Unless otherwise indicated on the PLANT SCHEDULE, the height and spread of deciduous shade trees shall be the minimum requirements.
 - 8. Take caliper measurements for deciduous trees 6 inches above ground level up to and including 4 inches caliper size and 12 inches above ground for larger sizes.
 - 9. No deciduous tree shall be pruned after the Owner's Representative has tagged the plant in the nursery except as directed by the Owner's Representative.
 - 10. Unless otherwise noted on the PLANT SCHEDULE, shade trees for use in paved areas shall have lowest branches between 6 feet 6 inches and 7 feet 6 inches from finish grade. Flowering trees for use in areas away from pedestrian traffic shall have the first branch of their crowns no higher than 4 feet from finish grade.
 - 11. Branching of all deciduous trees shall be best quality representatives of the species, cultivar, or variety with lateral branching around the entire trunk to form a symmetrical tree for 80 percent to 100 percent of the tree's outer perimeter. All branches on deciduous trees shall meet the trunk at angles no less than 30 degrees and no greater than 90 degrees from the vertical.

2.04 ROOT SYSTEMS FOR ALL PLANTS

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- A. Each plant shall have an extensive, symmetrically balanced fibrous root system. Any root ball which shows signs of asymmetry, girdling, injury, or damage to the root system shall be rejected.
- B. Curling or spiraling of the roots along the walls of rigid containers will not be accepted. Curling, spiraling, or girdling roots within balled and burlapped material will not be accepted.
- C. All parts of the fibrous root system of all plants shall be moist and fresh with a white color when washed of soil. When the plant is removed from the container, the visible root mass shall be healthy with white root tips. The root systems of all plants shall be free of disease, insect pests, eggs, or larvae.
- D. All trees which are not grown in containers must be moved with the root systems as solid units with balls of earth firmly wrapped with untreated 8 ounce natural, biodegradable fabric burlap, firmly laced with stout, natural biodegradable cord, or twine. The base of the tree trunks shall be wrapped with a protective burlap layer, surrounded by a cardboard trunk protector, and loosely tied with twine.
- E. The diameter and depth of the balls of earth must encompass the fibrous and root feeding system necessary for the healthy recovery of the plant. Minimum root ball diameters and depths shall be in accordance with ASNS standards.
- F. No plants shall be loose in the container.
- G. Container grown plants which have roots growing out of the container will be rejected.

2.05 PLANTING SOIL MIX

- A. Planting soil mix shall be an approved loam borrow specified, provided, installed, and paid for under the Division 32 Section, PLANTING SOIL, of this Specification and that has been pH adjusted according to particular planting applications and improved through the addition of organic matter as directed below. Planting loam shall conform to the following pH levels:
 1. Planting soil mix for general planting of non-acid loving plants shall have a true pH value of 6.0 to 6.5. Planting soil mix shall be amended by the Contractor at his own expense to the proper pH range by mixing with dolomitic limestone as specified, provided, installed, and paid for under the Division 32 Section, PLANTING SOIL.
 2. The amount of either sulfur or limestone required to adjust the planting soil mix to the proper pH range shall be approved by the Owner's Representative on the basis of soil tests as specified, provided, installed and paid for under the Division 32 Section, PLANTING SOIL, of this Specification.
 3. In those areas indicated on the Contract Documents, augment planting soil mix with 10 percent gypsum. Thoroughly premix gypsum into planting soil mix prior to commencing the planting operations. Gypsum shall be specified, provided, installed, and paid for under the Division 32 Section, PLANTING SOIL, of this Specification.

2.06 MULCH

- A. Bark Mulch: Mulch shall be high quality, double-ground, premium bark mulch of 70 percent hemlock bark with the balance spruce and pine bark. Mulch shall have been aged for a minimum of six months and not longer than two years. Bark mulch shall be shredded to a uniform size; free of dirt, debris and foreign matter; with pieces no thicker than one-quarter inch. Mulch must be free of stringy material or chunks over 3 inches in size and shall not contain, in the judgment of the Owner's Representative, an excess of fine particles. Submit sample for the Owner's Representative's approval.

2.07 PEASTONE

- A. Peastone gravel shall be 3/8" semi-rounded washed stone; free of dirt, debris and foreign matter. Submit sample for the Owner's Representative's approval.

2.08 WATER

- A. The Contractor shall be responsible to furnish his own supply of water to the site at no extra cost. If possible, the Owner shall furnish the Contractor upon request with an adequate source and supply of water at no charge. However, if the Owner's water supply is not available or not functioning, the Contractor shall be responsible to furnish adequate supplies at his own cost. All work injured or damaged due to the lack of water, or the use of too much water, shall be the Contractor's responsibility to correct. Water shall be free from impurities injurious to vegetation.
- B. Watering bags shall be installed around each deciduous, evergreen, and ornamental tree. If trees are staked, the watering bag shall be installed around one of the stakes so as to prevent the trunk of the tree from being damaged by wet conditions and to encourage root growth. Watering bags shall be capable of releasing 15 gallons of water over a 24 hour period.
 - 1. Contractor shall remove the water bags at Final Completion or remain for future removal at the Owner's discretion.

PART 3 – EXECUTION

3.01 PLANTING – GENERAL

- A. Furnishing and planting of plant material shall include, but shall not be limited to, the digging of planting pits and plant beds, amendment of loam as required to produce planting soil mix, provision of soil additives required to adjust for pH requirements of specific plants, furnishing the plants as specified as well as the labor of planting, fertilizing, and maintenance.
- B. Prior to spreading of loam, subgrades shall have been tested to determine if they are too compact to drain water as specified, performed, and paid for under the work of Division 32 Section, PLANTING SOIL, of this Specification.
- C. The Contractor shall locate plant material sources and ensure that plants are shipped in timely fashion for installation.
- D. Contractor shall locate all existing underground utilities that are within 10 feet of the proposed planting pits and notify the Owner's Representative of any conflicts prior to digging plant pits.
- E. Seasons for Planting:
 - 1. Spring:
Deciduous materials: March 21 through June 15
Evergreen materials: April 15 through June 1
 - 2. Fall:
Deciduous materials: October 1 through December 1
Evergreen materials: August 15 through October 15
- F. Plant Material Inspection:
 - 1. At a minimum of 21 days after the Notice to Proceed, the Contractor shall identify the supplying nursery or nurseries for approval. At least one month prior to the expected planting date, the Contractor shall request that the Owner's Representative provide a representative to select and tag stock to be planted under this Section, PLANTING. The Contractor shall pay for the transportation, subsistence, and overnight accommodations, if necessary, for the Owner's Representative's representative during the period of time required to select and tag the plant material.
 - 2. The Contractor shall be responsible to certify the availability of quality plants in specified sizes from his/her sources of supply prior to requesting that the Owner's Representative make plant source inspections. In the event that plants at the inspection location are found to be unavailable or of insufficient size, the Contractor shall be liable to reimburse the Owner for all costs of the Owner's Representative's hourly services which are incurred during unproductive inspection trips.

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3. Unless specifically designated otherwise, a representative of the Contractor shall accompany the Owner's Representative on all plant material selection field trips.
4. All trees for the project shall be individually tagged for approval with the Owner's Representative's seals, and no trees shall be accepted for delivery to the site without such seals.
5. Plants to be inspected shall be in locations and conditions that allow direct and un-obsured inspection by the Owner's Representative. Harvested trees held in storage shall not have branches tied up. Harvested trees shall not have trunks obscured by burlap, cardboard trunk protection, or other devices that would otherwise obscure inspection. In the event that branches are tied up, trunks are obscured by burlap or cardboard trunk protection, or root flares hidden by burlap and twine and the Owner's Representative cannot inspect root flares, trunks or branching habit, the Contractor shall bear all responsibility and costs associated with tree rejection at a later date during the course of the Contract.
6. Inspection and approval of plants at the source shall not impair the right of subsequent inspection and rejection upon delivery to the site, or during the progress of the work if the Owner's Representative finds that plants do not meet the requirements of the PLANT SCHEDULE or this Contract, have declined noticeably due to handling abuse, lack of maintenance, or other causes. Cost of replacements, as required, shall be borne by the Contractor.
7. The City Arborist reserves the right to reject any plant material once delivered to the site.

G. Placement of Loam for planting soil shall be specified, performed, and paid for under the work of Section, PLANTING SOIL, of this Specification. Obtain Owner's Representatives written approval of work of rough grading and finish grading prior to starting the work of planting.

H. Planting

1. Notify the Owner's Representative three working days prior to the proposed arrival of plant material on the site. If not planted within 24 hours of delivery to the site, all plants shall be maintained in an on-site nursery. Container grown shrubs stored on site shall be shaded from direct sunlight at all times and shall not be stored directly on paved surfaces. All plants delivered to the site and not planted within 24 hours of delivery shall have their root balls covered with mulch and shall be watered on a daily basis such that root balls are kept moist throughout.
2. Locations for all plants and outlines for planting areas shall be staked on the ground by the Contractor for approval by the Owner's Representative before any plant pits or plant beds are dug. Notify the Owner's Representative no less than 3 days prior to the desired date of inspection of staking to schedule site visit.
3. Circular plant pits shall not be required provided that the minimum dimension between the edge of the pit and the face of the rootball is not less than required by this Section, PLANTING.
4. All plant pits dug with a machine shall have the sides of the holes scraped with hand shovels to prevent glazing or compaction of the sides of the hole. Remove and stockpile excavated loam for reuse as backfill for plant pit. All subsoil excavated from the bottoms of planting pits shall be removed from the site.
5. Plant pits shall be dug to the dimensions shown on the Contract Documents.
 - a. Plant pits for trees shall be a minimum three times greater in diameter than the diameter of the root ball. Place root ball directly on subgrade. Slope sides of tree pits at a 45 degree angle.
 - b. Plant pits for trees and shrubs shall be dug to the depth of the rootball to be planted.
 - c. Remove all soil from around the root flare of the stem of the plant and from the top of the rootball to determine the true depth of the rootball. All plants that have been planted and have root flares that are buried will be rejected.
6. All plant roots and earth balls must be damp and thoroughly protected from sun and wind from the beginning of the digging operation, during transportation, and at the site until the final planting.
7. Remove container plants from containers prior to planting.
8. Trees shall be placed in the center of plant pits, plumb, with the crown of their roots exposed and located above the surrounding finish grade.
9. Prior to completion of planting installations, remove rope and cut wire baskets from the top 1/3 of the root balls. Pull burlap away from the trunk or stem of the plant and cut burlap from the top one-third of the root balls.
10. Contractor shall 'butterfly' the root system for all container grown perennials immediately prior to planting them. Butterflying shall consist of vertically cutting the containerized root ball with a

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spade through the bottom half of the rootball followed by gently pulling the rootball open at the cut while placing it into the planting hole. The butterflyed root system shall be placed over a small ridge of soil in the planting pit in order to assure as much.

11. Planting soil shall be backfilled with approved planting soil to the full depth of the planting pit or bed. Eliminate air pockets and compact the soil by flooding the tree pit or plant bed within 2 hours of planting installation. After water has drained from the planting pit or bed and planting backfill has dried enough additional planting soil shall be spread in pit or bed to bring the finished surface of the planting pit or bed to grades shown on the Contract Documents. A saucer shall be formed around each plant at a depth of 3 inches for trees.
12. Fertilizer shall be spread over the plant saucer or plant bed between the saucer and the edge of the rootball. Till the fertilizer into the soil to a depth of four inches prior to the placement of the planting mulch. Fertilizer shall be provided, spread, and paid for under the Section, PLANTING SOIL, of this Specification. Do not mulch until placement of the fertilizer has been verified by the Owner's Representative. Fertilizer application rates shall be as determined by soil testing, analysis, and testing laboratory recommendations specified, performed, and paid for under the Section, PLANTING SOIL, of this Specification.

I. All plants shall be watered immediately following planting as necessary to thoroughly moisten rootball and plant pit loam and thereafter shall be inspected frequently for watering needs and watered, as required, to provide adequate moisture in the planting pit. The Contractor shall inspect tree pits 24 hours after initial watering to confirm that they are draining properly. If surface water or excessively saturated plant pit soils exist, the Contractor shall immediately notify the Owner's Representative. The Owner's Representative will recommend remedial measures based upon site conditions.

J. Keeping Trees Plumb

1. Contractor shall keep trees plumb and upright at all times.

K. Mulch material shall be placed over entire saucer areas of individual trees and shrubs and over the entire area of planting beds to a depth of 3 inches after settlement, not later than one week after planting. Do not apply mulch prior to the first watering of plant materials. Do not apply mulch prior to placement of surface applied fertilizer and verification of placement by the Owner's Representative.

1. Mulch shall not touch the trunks of trees. No mulch shall be placed within 2 to 3 inches of trunks.

L. The trunks of all deciduous trees over 1-1/2 inches in diameter shall be wrapped by the Contractor immediately after the inspection of the trees by the Owner's Representative. Wrapping shall extend from the ground line to the height of the second branches or to the height directed. The specified wrapping shall be wound spirally, starting from the base and overlapping 1-1/2 inches in order to shed water. Wrapping shall be securely taped to prevent loosening and unraveling. If trees are planted in springtime, do not apply any tree wrapping. If deciduous trees are planted in the autumn, wrap the trees and then remove wrapping the following spring.

1. Trees delivered to the site wrapped for protection shall be unwrapped at the site for inspection of the trunk by the Contractor and Owner's Representative.

M. Pruning

1. As directed by the Owner's Representative, each plant shall be pruned in accordance with the workmanship requirements of "Pruning Standards" for Class I, fine pruning, to preserve the natural character of the plant.
2. Tree pruning, as required, shall be undertaken to the full height of affected trees.
3. All dead wood or suckers and all broken or badly bruised branches shall be removed. Never cut a leader.

N. If planting is done after lawn preparation or installation, proper protection of lawn areas shall be provided. Any damage resulting from planting operations shall be repaired immediately at no cost to the Owner. Repair work shall be as specified and installed under the work of Section, TURF & GRASSES, of this Specification and paid for under this Section, PLANTING.

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O. Absolutely no debris may be left on the site. Repair any damage to site as directed by the Owner's Representative, at no additional cost.

3.02 MAINTENANCE

A. Maintenance shall begin immediately after each plant is planted and shall continue for a minimum 90-day Monitoring Period within the growing season and until Final Acceptance.

1. The growing season is from April 1 to November 1.

B. Maintenance shall consist of keeping the plants in a healthy growing condition and shall include but is not limited to watering, weeding, cultivating, pruning, re-mulching, tightening, and repairing of guys, straightening of trees to a plumb position, removal of dead material, resetting plants to proper grades or upright position, and maintaining the planting saucer.

1. Plants shall be inspected for watering needs at least twice each week and watered to promote plant growth and vitality. The following watering rates assume that the soil is free draining. If the on-site conditions do not ensure a free draining soil, then notify the Owner's Representative in writing of this condition. Watering rates in free draining soils are presented here as guidelines to ensure that the top six inches of plant bed soil remains moist at all times. Actual watering rates may vary depending upon soil conditions. Guideline rates shall be as follows:

<u>Type of Plant/Size</u>	<u>Weekly Watering Rate</u>
Deciduous Trees:	
1 - 1-1/2 in. caliper	40 gallons
1-1/2 - 2 in. caliper	54 gallons
2 - 2-1/2 in. caliper	61 gallons
2-1/2 - 3 in. caliper	70 gallons
3 - 3-1/2 in. caliper	80 gallons
Evergreen Trees:	
1 - 2 ft. height	25 gallons
2 - 3 ft. height	30 gallons
3 - 4 ft. height	35 gallons
5 - 6 ft. height	40 gallons
6 - 7 ft. height	45 gallons
7 - 8 ft. height	50 gallons
Shrubs:	
Up to 2 ft. height	10 gallons
2 - 4 ft. height	20 gallons
4 - 6 ft. height	30 gallons
Vines	
	5 gallons
Perennials	
	5 gallons

- a. Water shall be applied by 1 inch diameter hose with an attached metering gauge.
2. For trees, apply water into the watering bag.
3. Stakes shall be kept plumb and neat in appearance. Guys, wires and anchoring cables shall be tightened and repaired weekly.
4. Individual plant pits shall be kept free of weeds, and mulch shall be replaced as required to maintain the specified layer of mulch. Individual pits shall be neat in appearance and maintained to the designed layout.
5. Plants that die during the maintenance period shall be removed and replaced by the Contractor within one week of notification and replaced during that growing season, unless directed otherwise by the Owner's Representative.
6. Spraying of insecticides or herbicides shall be done by State-licensed professionals. Spraying for insects, pests and diseases shall conform to the National Arborist Association Standards under the section entitled "Standards for Pesticide Application Operations", as currently adopted

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and as approved by the Owner's Representative. All insecticides, pesticides, and herbicides shall be EPA-approved and shall conform to the requirements of the Commonwealth of Massachusetts.

7. Work of pruning, fertilizing, spraying, and similar activities shall be undertaken only by Certified Arborists and licensed chemical applicators, as pertinent to the work being performed.
- C. During the maintenance period, any decline in the condition of plantings shall require the Contractor to take immediate action to identify potential problems and undertake corrective measures. If required, the Contractor shall engage professional arborists and/or horticulturalists to inspect plant materials and to identify problems and recommend corrective procedures. The Owner's Representative shall be immediately advised of such actions. Inspection and recommendation reports shall be submitted to the Owner's Representative.
- D. Contractor is responsible for watering the entire park for the duration of construction.

3.03 ACCEPTANCE

- A. Upon completion of all planting work, the Contractor shall request in writing that the Owner's Representative formally inspect the planting work.
- B. If plant materials and workmanship are acceptable, the Owner's Representative will issue a written Certificate of Conditional Acceptance to the Contractor.
- C. Following the issuance of the Certificate of Conditional Acceptance to the Contractor, the Contractor shall maintain the plants for a minimum 90 day Monitoring Period. At the end of the Monitoring Period, the plant material will be inspected by the Owner's Representative to determine whether or not all planting work has been performed to the requirements of this Section, PLANTING.
- D. Acceptance Standards at end of the Monitoring Period: If plant material is reviewed when it is in full leaf, leaves shall be plump with water with a shape indicative of the species and shall be free of insect, pest and disease damage. Twigs shall have living cambium for their full length. Twigs and branches shall have a full bud set for their full length, including terminal buds. Trunks and branches shall be free of frost cracks; sun scald; damage due to insects, pests, and disease; structural defects; and damage resulting from machinery or tools. Plant material inspected and reviewed when the plants are not in full leaf shall have twigs, branches and trunks meeting the above requirements. All plants regardless of the season of review shall have a minimum of 75 percent healthy, balanced branching structure with a healthy terminal leader(s) with viable terminal bud(s).
- E. If any number of plants do not meet these Acceptance Standards at the time of inspection, or if in the Owner's Representative's opinion, workmanship is unacceptable, written notice will be given by the Owner's Representative to the Contractor in the form of a punch list, which itemizes necessary planting replacements and/or other deficiencies to be remedied. The Contractor's responsibility for maintenance of all plants shall be extended until replacements are made or other deficiencies are corrected. All plants that do not meet these Acceptance Standards shall be removed from the project within seven days of receipt of the punch list. Replacements shall conform in all respects to the Specifications for new plants and shall be planted in the same manner.
- F. Following the correction of all Punch List deficiencies, the Contractor shall request in writing that the Owner's Representative formally inspect the planting work. If plant materials and workmanship are acceptable, the Owner's Representative will issue a written Certificate of Final Acceptance to the Contractor.

3.04 GUARANTEE

- A. The date of the Certificate of Final Acceptance shall establish the commencement of the required two-year guarantee and establishment period for planting work.
- B. During the guarantee period, Contractor shall replace dead/damaged plants at their expense.
- C. At the end of the guarantee and establishment period, a final inspection will be held to determine whether any plant material replacements are required. Each plant shall be plumb, shall have a character that is natural for its species as determined by the Owner's Representative, and shall

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conform to the Acceptance Standards described in this Section, PLANTING. Plants found to be unacceptable shall be removed promptly from the site and replaced according to this Section, PLANTING. A final inspection will be made after the replacement plants have lived through one year.

- D. At the end of the two-year guarantee and establishment period, remove all tree stakes, guys, or anchors installed on trees during the course of the work of this contract.
- E. All replacements shall be plants of the same kind and size specified in the PLANT SCHEDULE. The cost shall be borne by the Contractor, except for possible replacements due to vandalism or neglect on the part of others.

END OF SECTION

SECTION 32 91 13: PLANTING SOIL

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to supply and place planting soil as indicated on the Contract Documents and as specified. Supplying and placement of planting soil shall include, but not be limited to:
 1. Screening, placing, spreading, and grading of loam borrow

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 1. Division 31 Section: EARTH MOVING
 2. Division 32 Section: PLANTING

1.04 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - D 75 Practice for Sampling Aggregates
 - D 422 Test Method for Particle-Size Analysis of Soil
 - D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³)
 - D1557 Moisture-Density Relations of Soil and Soil-Aggregate Mixtures using 10-lb Rammer and 18-in. Drop
- B. Association of Official Agricultural Chemists (AOAC)
- C. Massachusetts Department of Transportation (MassDOT): Standard Specifications for Highways and Bridges

1.05 SUBMITTALS

- A. At least 30 days prior to ordering materials, the Contractor shall submit to the Owner's Representative representative samples, certifications, manufacturer's product data and certified test results for materials as specified below for approval in conformance with the requirements of Section, SUBMITTALS, of this Specification. No materials shall be ordered or delivered until the required submittals have been reviewed and approved by the Owner's Representative. Delivered materials shall closely match the approved samples. Approval shall not constitute final acceptance. The Owner's Representative reserves the right to reject, on or after delivery, any material that does not meet these Specifications.
 1. Limestone: Submit supplier's certification that the limestone being supplied conforms to these Specifications.
 2. Any and all additives needed to amend a specific soil in order to meet these specifications.

1.06 EXAMINATION OF CONDITIONS

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

PART 2 – PRODUCTS

2.01 LOAM

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

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

<u>Sieve Size</u>	<u>% Passing by Weight</u>
No. 10 (2.0 mm)	100
No. 18 (1.0 mm)	82 – 100
No. 35 (0.5 mm)	65 – 87
No. 60 (0.25 mm)	49 – 72
No. 140 (0.10 mm)	30 – 45
No. 270 (0.05 mm)	22 – 32
No. 635 (0.002 mm)	2 – 5

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

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

- 1. Top 18 inches of areas planted with tree and shrub as described in the Section 32 90 00, PLANTING, of this Specification:
 - a. pH: 5.5 through 6.5 for non-acid loving plants
 - b. pH: 4.5 through 5.5 for *Ericaceae* and other acid-loving plants
 - c. Organic Content 4.0 - 6.0 percent as determined by the loss on ignition of oven-dried samples passing #10 sieve (Muffle furnace temperature: 450 +/- 10 degrees C for 8 hours)
- 2. Loam borrow shall be pH adjusted for particular planting applications and shall be adjusted prior to delivery to the Project sites as recommended by UMass Soil & Plant Tissue Laboratory test results.
 - a. When pH of loam borrow is equal to or greater than 7 use aluminum sulfate to adjust pH downward to required levels.
 - b. When pH of loam borrow is less than 7 use either sulfur or ferrous sulfate to adjust pH downward to required levels.
 - c. When pH of loam borrow must be raised to the required levels use limestone.
 - d. Regardless of amendment Contractor chooses to use, Contractor, not the Owner, shall be responsible for obtaining specified pH by planting time.

- C. All loam borrow proposed for use shall be tested for conformance to the specifications. Soil additives shall be used to counteract soil deficiencies as recommended by the soil analysis and as supplements for lawn construction as specified herein.

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D. The Owner's Representative reserves the right to reject on or after delivery to the project site any material which does not, in his opinion, meet these specifications.

2.2 BIORETENTION SOIL

A. The basis of design for the Rain Garden Soil is "Bioretention and Rain Garden Soil", manufactured by Read Custom Soils, 158 Tihonet Road, Wareham, MA 02571.

B. Bio-retention filter mix shall be composed as follows:

Component	Percentage passing by weight
Topsoil	20 – 30%
Sand	40%
Compost	30 – 40%

C. Topsoil shall be sandy loam, loamy sand or loam as defined by the USDA classification system.

D. Sand shall be gravelly sand that meets ASTM D 422 and the following gradation:

Percent Passing by Weight

Sieve Size	Maximum	Minimum
2	100%	
0.75	70 – 100%	
0.25	50 – 80%	
#40	15 – 40%	
#200	0 – 3%	

E. Compost shall be leaf compost. Biosolids are not allowed for the compost component.

F. Filter mix pH shall be between 5.5 and 6.5.

G. The contractor shall install loam borrow in successive horizontal lifts no thicker than 6 inches in turf areas and 12 inches in plant bed areas to the desired compaction as described herein. The contractor shall install the soil at a higher level to anticipate any reduction of loam borrow volume due to compaction, settling, erosion, decomposition, and other similar processes during the warranty period. The owner's representative will ensure that the full depths of loam borrow for lawn and plant beds are obtained by digging holes in the loam borrow at the same frequency as for compaction testing.

H. The soil mix must be uniform, free of stones, stumps, roots, or similar objects larger than 2 inches. Clay content should not exceed 5%.

I. Use soils with 1.5% to 3% organic content and maximum 500 ppm soluble salts.

J. On-site soil mixing or placement is not allowed if soil is saturated or subject to water within 48 hours. Cover and store soil to prevent wetting or saturation.

PART 3 – EXECUTION

3.01 FILLING AND COMPACTION

A. Subsoil or ordinary borrow shall have been excavated and filled as required by the Contract Documents and specified and paid for under the Division 31 Section, EARTH MOVING, of this Specification. Do not damage the work previously installed. Maintain all required angles of repose of materials adjacent to the loam as shown on the Contract Documents. Do not over excavate compacted subgrades of adjacent pavement or structures during loaming operations.

B. Confirm that the subgrade is at the proper elevation and that no further earthwork is required to bring the subgrade to proper elevations. Subgrade elevations shall slope parallel to the finished grade and or toward the subsurface drain lines as shown on the Contract Documents.

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- C. Clear the subgrade of all construction debris, trash, rubble, and any foreign material. In the event that fuels, oils, concrete washout or other material harmful to plants have been spilled into the subgrade material, excavate the soil sufficiently to remove the harmful material. Such construction debris, trash, rubble, and foreign material shall be removed from the site and disposed of in a legal manner. Fill any over excavation with approved fill and compact to the required subgrade compaction levels.
- D. Do not proceed with the installation of loam borrow until all utility work in the area has been installed.
- E. Protect adjacent walls, walks and utilities from damage or staining by the loam borrow. Use 0.5-inch plywood and or plastic sheeting as directed to cover existing concrete, metal and masonry work and other items as directed during the progress of the work. Clean up all trash and any soil or dirt spilled on any paved surface at the end of each working day.

3.02 FINE GRADING

- A. Place loam in two lifts. Place the first lift to a depth of 2 inches and harrow or till the loam into the underlying subsoil to a depth of 2 inches, creating a blended interface of loam and subsoil approximately 4 inches deep. Spread the second lift of loam to a minimum depth of 4 inches or greater as shown on the Contract Documents.
- B. No loam borrow shall be handled, planted in any way if it is in a wet or frozen condition. A moist loam borrow is desirable.
- C. Soil additives shall be spread and thoroughly incorporated into the layer of loam borrow by harrowing or other methods reviewed by the Owner's Representative. The following soil additives shall be incorporated:
 1. Ground limestone or acidulant as required by soil analysis to achieve the required Ph.
- D. Sufficient grade stakes shall be set for checking the finished grades. Stakes must be set in the bottom of swales and at the top of slopes. Deviation from indicated elevations that are greater than one-tenth of a foot shall not be permitted. Connect contours and spot elevations with an even slope. Finish grades shall be smooth and continuous with no abrupt changes at the top or bottom of slopes.
- E. During the compaction process, all depressions caused by settlement or rolling shall be filled with additional loam borrow and the surface shall be regraded and rolled until presenting a smooth and even finish corresponding to the required grades.
- F. The Contractor shall install loam borrow in successive horizontal lifts no thicker than 6 in turf areas to the desired compaction as described herein. The Contractor shall install the soil at a higher level to anticipate any reduction of loam borrow volume due to compaction, settling, erosion, decomposition, and other similar processes during the warranty period. The Owner's Representative will ensure that the full depths of loam borrow for lawn and plant beds are obtained by digging holes in the loam borrow at the same frequency as for compaction testing.
 1. Compact loam to the required density as specified herein.
 2. Maximum dry density for topsoil and loam shall be determined in accordance with ASTM D698. The following percentages of minimum to maximum dry densities shall be achieved for fill materials or prepared subgrades.
 - a. In seeded areas and plant beds: 80 to 85%
 3. The surface area of each lift shall be scarified by raking prior to placing the next lift.
- G. Select equipment and otherwise phase the installation of the loam borrow to ensure that wheeled equipment does not travel over subsoil, placed fills or ordinary borrow or already installed soil.
- H. Disturbed areas outside the limit of lawn work shall be graded smooth and spread with a minimum of 6 inches of loam borrow to the finished grade.

3.03 ACCEPTANCE

- A. Confirm that the final grade of the loam borrow is at the proper finish grade elevations. Adjust grade as required to meet the contours and spot elevations noted on the Plans. Request the presence of the

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Owner's Representative to inspect final grade. Do not proceed with the remaining work of this Contract until the Owner's Representative has given his/her written approval of the final grade.

END OF SECTION

SECTION 32 92 00: TURF & GRASSES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SUMMARY

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

1. Turf seed mix
2. Maintenance & protection
3. Turf area protection fencing

1.03 RELATED WORK UNDER OTHER SECTIONS

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

1.04 REFERENCES

- A. Not Applicable

1.05 SUBMITTALS

- A. Submit proof of landscape contractor's experience to the Owner's Representative in accordance with Quality Assurance paragraph of this Section.
- B. At least 30 days prior to intended use, the Contractor shall provide the following samples and submittals for approval in conformance with the requirements of Section, Submittals. Do not order materials until Owner's Representative's approval of samples, certifications or test results has been obtained. Delivered materials shall closely match the approved samples. Acceptance shall not constitute final acceptance. The Owner's Representative reserves the right to reject on or after delivery any material that does not meet these Specifications.
 1. Fertilizer:
 - a. Submit product literature of seeding fertilizer and certificates showing composition and analysis.
 - b. Submit the purchasing receipt showing the total quantity purchased for the project prior to installation.
 3. Seed: Submit a manufacturer's Certificate of Compliance to the Specifications with each shipment of each type of seed. These certificates shall include the guaranteed percentages of purity, weed content and germination of the seed, and the net weight and date of shipment. No seed may be sown until the Contractor has submitted the certificates.
 4. Hydroseeding: Prior to the start of hydroseeding, submit a certified statement for approval as to the number of pounds of materials to be used per 100 gallons of water.
 5. Wood Cellulose Fiber Mulch: Submit copies of manufacturer's literature and one material sample.

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6. Limestone: Submit supplier's certification that the limestone being supplied conforms to these Specifications.
7. All additives needed to amend a specific soil in order to meet these specifications based on results of required testing.

1.06 EXAMINATION OF CONDITIONS

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

1.07 QUALITY ASSURANCE

- A. Qualification of Landscape Contractor: The work of this Section, Seeding, shall be performed by a landscape contracting firm which has successfully installed work of a similar quality, schedule requirement, and construction detailing with a minimum of five years' experience. Proof of this experience shall be submitted per Submittals paragraph of this Section, Seeding.
- B. Qualification of Foreman or Crew Leader: All work of seeding shall be supervised by a foreman or crew leader who is a certified landscape professional or a certified horticulturist.
 1. Certification shall be current. Proof of certification shall be submitted per Submittals paragraph of this Section, Seeding.

PART 2 – PRODUCTS

2.01 LOAM

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

2.02 SOIL ADDITIVES

- A. Soil additives shall be specified and provided under the work of the Division 32 Section, PLANTING SOILS, of this Specification.

2.03 TURF SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with Association of Official Seed Analysts' "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed mixture shall be fresh, clean, new crop seed. Grass shall be of the previous year's crop and in no case shall the weed seed content exceed 0.25% by weight. The seed shall be furnished and delivered in the proportion specified below in new, clean, sealed and properly labeled containers.

All seed shall comply with State and Federal seed laws. Submit manufacturer's Certificates of Compliance. Seed that has become wet, moldy, or otherwise damaged shall not be acceptable. Chewings fescue, hard fescue, tall fescue, and ryegrass shall contain *Acromonium* endophytes. Seed containing endophyte must be kept cool and dry at all times; do not stockpile in the sun.

- C. Seed Mixture Composition:

Common Name	Germination by Weight	Purity Minimum	Proportion Minimum
Creeping Red Fescue	30%	85%	95%
Kentucky Bluegrass	30%	85%	90%
Perennial Ryegrass	40%	90%	90%

1. Bluegrass and rye grass varieties shall be within the top 50 percent and 25 percent respectively, of varieties tested in National Turfgrass Evaluation Program, or currently recommended as low maintenance varieties by University of Massachusetts or the University of Rhode Island.
2. Seeding rate shall be 6 pounds per 1,000 square feet.

2.04 FERTILIZERS

- A. Fertilizer shall be a commercial product complying with the State and United States fertilizer laws. Deliver to the site in the original unopened containers that shall bear the manufacturer's certificate of compliance covering analysis. Fertilizer shall contain not less than the percentages of weight of ingredients as recommended by the soil analysis specified, performed, and paid for under the Section, PLANTING SOILS of this Specification.
- B. Phosphorus shall be superphosphate or triple superphosphate.

2.05 LIMESTONE

- A. Ground limestone for adjustment of loam borrow pH shall contain not less than 85 percent of total carbonates and shall be ground to such fineness that 40 percent will pass through 100 mesh sieve and 95 percent will pass through a 20 mesh sieve. Contractor shall be aware of loam borrow pH and the amount of lime needed to adjust pH to specification in accordance with testing lab recommendations.

2.06 WOOD CELLULOSE FIBER MULCH

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

2.07 HERBICIDES, CHEMICALS & INSECTICIDES

- A. Provide chemicals and insecticides as needed for fungus or pest control. All chemicals and insecticides shall be approved by the Massachusetts Department of Food and Agriculture for the intended uses and application rates.
- B. Provide post emergent crab grass control throughout the maintenance period to ensure a germinated and mown lawn free of crab grass.

2.08 WATER

- A. The Contractor shall be responsible to furnish his own supply of water to the site at no extra cost. If possible, the Owner shall furnish the Contractor upon request with an adequate source and supply of water at no charge. However, if the Owner's water supply is not available or not functioning, the Contractor shall be responsible to furnish adequate supplies at his own cost. All work injured or damaged due to the lack of water, or the use of too much water, shall be the Contractor's responsibility to correct. Water shall be free from impurities injurious to vegetation.
- B. Contractor shall keep log of watering schedule and volume applied. Log shall be signed by Foreman and submitted to Owner's Representative.

2.09 TURF AREA PROTECTION FENCING

- A. Tree protection fencing shall be one of the following, at the Contractor's option.
 - 1. Polypropylene barricade fencing manufactured by Forestry Suppliers (formerly Ben Meadows Co.), 3589 Broad Street, Atlanta, GA. Stakes for fencing shall be 2-inch x 4-inch wood posts, driven a minimum of 3 feet into the ground. Posts shall be spaced 8 feet maximum.
 - 2. Plastic polymer safety fence, Model BX2050 Safety Grid, manufactured by the Tensar Corporation, Morrow, GA, or approved equal. Color shall be high visibility orange. Stakes for fencing shall be 2-inch x 4-inch wood posts, driven a minimum of 3 feet into the ground. Posts shall be spaced 8 feet on center maximum.
 - 3. Unless otherwise indicated, height of fencing shall be 4 feet.

PART 3 – EXECUTION

3.01 FILLING & COMPACTION

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

3.02 FINE GRADING

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

3.03 SEEDING

- A. Contractor shall obtain Owner's Representative's written approval of fine grading and bed preparation before doing any seeding.
- B. Limit of grading and earthwork shall be limit of seeding unless otherwise indicated on the Contract Documents. All areas disturbed outside the limit of seeding shall be prepared and seeded as specified herein at no additional cost.
- C. The season for seeding shall be from April 1 to June 1 and from August 15 to September 30.
- 3. The actual planting of seed shall be done only during periods within this season which are normal for such work as determined by weather conditions and by accepted practice in this locality. To prevent loss of soil via water and wind erosion and to prevent the flow of sediment, fertilizer, and pesticides onto roadways, sidewalks, and into catch basins, seed loam areas within 5 days of spreading the loam.
- D. Seed only when the bed is in a friable condition, not muddy or hard.
- E. Seeding shall be by Hydroseeding Method specified as follows:
 - 1. Prior to the start of work, furnish a certified statement as to the number of pounds of materials to be used per 100 gallons of water. This statement shall also specify the number of square feet of hydroseeding that can be covered with the quantity of solution in the hydroseeder.
 - 2. Hydroseed with wood cellulose fiber mulch at a rate of 46 pounds per 1,000 square feet or 2000 pounds per acre.
 - 3. For the hydroseeding process, a mobile tank with a capacity of at least 500 gallons shall be filled with water and the mixture noted above in the specified proportions. The resulting slurry shall be thoroughly mixed by means of positive agitation in the tank. Apply the slurry by a centrifugal pump using the hose application techniques from the mobile tank. Only hose application shall be permitted. At no time shall the mobile tank or tank truck be allowed onto the prepared hydroseed beds. The hose shall be equipped with a nozzle of a proper design to ensure even distribution of the hydroseeding slurry over the area to be hydroseeded and shall be operated by a person thoroughly familiar with this type of seeding operation.
 - 4. Contractor shall obtain Owner's Representative's written approval of fine grading and bed preparation before doing any hydroseeding.

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5. Limit of grading and earthwork shall be limit of hydroseeding unless otherwise indicated on the Contract Documents. All areas disturbed outside the limit of hydroseeding shall be hydroseeded.
6. Seed only when the bed is in a friable condition, not muddy or hard. Construction methods shall conform to hydraulic method requirements specified in the Standard Specification.
7. Hydroseeding shall be a two-step process.
 - a. Step one shall consist of spreading 100 percent of the required seed uniformly over the prepared loam bed so that the seed comes into direct contact with the soil. To mark the progress of the hydroseeding operation the Contractor may add 10 percent of the wood cellulose fiber mulch to the slurry.
 - b. Step two shall consist of a separate application of wood cellulose fiber mulch immediately following the first step of hydroseeding noted above. Apply the wood cellulose fiber mulch at a rate of 2,000 pounds per acre.

3.04 TURF MAINTENANCE

- A. Maintenance shall begin immediately after any area is seeded and shall continue for a 90 day active growing period for seeded areas past Final Acceptance. The completion of all lawn construction work, and until final acceptance of the project.
 1. In the event that seeding operations are completed too late in the autumn for adequate germination and growth of grass, then maintenance shall continue into the following spring for the minimum 60 Day period. In addition, install blankets or netting to prevent loam degradation and movement over the winter. Submit product literature and samples to the Owner's Representative for review. Blankets and netting shall be placed in a timely manner at no additional cost to the Owner.
 2. Contractor shall be responsible for the timely care and maintenance of the existing turf areas in the park from receipt of Notice to Proceed until Final Completion. Maintenance shall include mowing (turf shall not be allowed to grow longer than 4 inches).
- B. Maintenance shall include reseeding, mowing, watering, weeding, fertilizing a minimum of two times in addition to the fertilizer incorporated by harrowing into the spread loam, and resetting and straightening of protective barriers. Turf area maintenance shall also include chemical treatments as required for fungus and/or pest control.
- C. During the maintenance period, any decline in the condition of seeded areas shall require immediate action to identify potential problems and to undertake corrective measures.
- D. Watering shall be done in a manner that will provide uniform coverage, prevent erosion due to application of excessive quantities over small areas, and prevent damage to the finished surface by the watering equipment.
 1. The Contractor shall provide all labor and arrange for all watering necessary to establish an acceptable turfgrass stand. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary to maintain moist soil to a depth of at least 2 inches for seeded areas. Begin watering immediately after seeding.
 2. Watering shall be done in a manner that will provide uniform coverage, prevent erosion due to application of excessive quantities over small areas, and prevent damage to the finished surface by the watering equipment. The Contractor shall furnish sufficient watering equipment to apply water to the required soil depths each 8-hour period.
- E. Protection
 1. Turfgrass areas shall be protected by a 4-foot high fence constructed with steel stakes set 18 inches in the ground at 10 foot intervals.
 2. Barriers must be raised immediately after turf establishment and shall be maintained until Acceptance.
- F. After the grass in seeded areas has germinated, reseed all areas and parts of areas that fail to show a uniform stand of grass. Reseed such areas and parts of areas repeatedly until all areas are covered with a satisfactory growth of grass with no less than 20 grass shoots per square inch and 2,880 grass shoots per square foot. Reseeding together with necessary grading, fertilizing, and trimming shall be done at the Contractor's expense.

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G. Fertilizing: The first application of fertilizer is specified, provided, performed, and paid for under the Section, Planting Soils.

3.05 ACCEPTANCE

- A. Acceptance of seeded turf shall be in advance of contract Final Completion. If additional time is required for turf establishment, the Contractor shall notify the Owner's Representative in writing at least 60 days in advance of Final Completion.
- B. Following the minimum required maintenance periods for turfgrass establishment, the Contractor shall request the Owner's Representative in writing for a formal inspection of the completed work. Request for inspection shall be received by the Owner's Representative at least 10 days before anticipated date of inspection.
- C. Acceptance Requirements
 1. At the end of the maintenance period, seeded areas shall have a close stand of grass as defined above with no weeds present and no bare spots greater than 3 inches in diameter over greater than 5 percent of the overall seeded area. At least 90 percent of the grass established shall be permanent grass species. If seeded areas are deficient, the Contractor's responsibility for maintenance of all seeded areas shall be extended until deficiencies are corrected. Seeded areas to be corrected shall be prepared and reseeded in accordance with the requirements of this Section, TURF & GRASSES.
 2. At the time of acceptance, the Contractor shall remove temporary barriers used to protect turfgrass areas.
- D. Furnish full and complete written instructions for maintenance of the seeded areas to the Owner at the time of acceptance in conformance with Submittals requirements.
- E. Owner's Representative's inspection shall determine whether maintenance shall continue in any part.

3.07 CLEAN UP

- a. Absolutely no debris may be left on the site. Excavated material shall be removed as directed. Repair any damage to site or structures to restore them to their original condition, as directed by the Owner's Representative, at no cost to the Owner.
- b. Clean wheels of vehicles before leaving site.

END OF SECTION

APPENDIX

Exhibit A: Order of Conditions

Exhibit B: Town of Hudson Standard Contract

Exhibit C: Supplement Construction Contract

Exhibit D: Soils Report

Exhibit E: Prevailing Wages

APPENDIX

Exhibit A: Order of Conditions



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 - Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File #:190-0711
eDEP Transaction
#:1856997
City/Town:HUDSON

A. General Information

1. Conservation Commission	HUDSON	a. <input checked="" type="checkbox"/> OOC	b. <input type="checkbox"/> Amended OOC
3. Applicant Details			
a. First Name	STEVEN	b. Last Name	SANTOS
c. Organization	TOWN OF HUDSON, DIVISION OF RECREATION		
d. Mailing Address	78 MAIN STREET		
e. City/Town	HUDSON	f. State	MA
g. Zip Code 01749			
4. Property Owner			
a. First Name	STEVEN	b. Last Name	SANTOS
c. Organization	TOWN OF HUDSON, DIVISION OF RECREATION		
d. Mailing Address	78 MAIN STREET		
e. City/Town	HUDSON	f. State	MA
g. Zip Code 01749			

5. Project Location

a. Street Address	539 MAIN STREET	c. Zip Code	01749
b. City/Town	HUDSON	e. Parcel/Lot#	1
d. Assessors Map/Plat#	45	g. Longitude	71.51677W
f. Latitude	42.38852N		

6. Property recorded at the Registry of Deed for:

a. County	b. Certificate	c. Book	d. Page
SOUTHERN MIDDLESEX		17400	0181

7. Dates

a. Date NOI Filed : 7/3/2024 b. Date Public Hearing Closed: 12/5/2025 c. Date Of Issuance: 12/10/2024

8. Final Approved Plans and Other Documents

a. Plan Title: b. Plan Prepared by: c. Plan Signed/Stamped by: d. Revised Final Date: e. Scale:

SEE ATTACHED

B. Findings

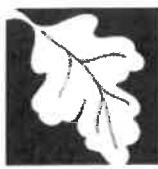
1. Findings pursuant to the Massachusetts Wetlands Protection Act

Following the review of the the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act.

Check all that apply:

a. <input checked="" type="checkbox"/> Public Water Supply	b. <input checked="" type="checkbox"/> Land Containing Shellfish	c. <input checked="" type="checkbox"/> Prevention of Pollution
d. <input checked="" type="checkbox"/> Private Water Supply	e. <input checked="" type="checkbox"/> Fisheries	f. <input checked="" type="checkbox"/> Protection of Wildlife Habitat
g. <input checked="" type="checkbox"/> Ground Water Supply	h. <input checked="" type="checkbox"/> Storm Damage Prevention	i. <input checked="" type="checkbox"/> Flood Control

2. Commission hereby finds the project, as proposed, is:



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Approved subject to:

a. The following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

Denied because:

b. The proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**

c. The information submitted by the applicant is not sufficient to describe the site, the work or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the interests of the Act , and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**

3. Buffer Zone Impacts:Shortest distance between limit of project disturbance and the wetland resource area specified in 310CMR10.02(1)(a).

a. linear feet

Inland Resource Area Impacts:(For Approvals Only):

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input type="checkbox"/> Bank	a. linear feet	b. linear feet	c. linear feet	d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	a. square feet	b. square feet	c. square feet	d. square feet
6. <input type="checkbox"/> Land under Waterbodies and Waterways	a. square feet	b. square feet	c. square feet	d. square feet
	e. c/y dredged	f. c/y dredged		
7. <input type="checkbox"/> Bordering Land Subject to Flooding	a. square feet	b. square feet	c. square feet	d. square feet
Cubic Feet Flood Storage	e. cubic feet	f. cubic feet	g. cubic feet	h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	a. square feet	b. square feet		
Cubic Feet Flood Storage	c. cubic feet	d. cubic feet	e. cubic feet	f. cubic feet
9. <input checked="" type="checkbox"/> Riverfront Area	17498	a. total sq. feet	b. total sq. feet	



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Sq ft within 100 ft	c. square feet	d. square feet	e. square feet	f. square feet
Sq ft between 100-200 ft	g. square feet	h. square feet	i. square feet	j. square feet

Coastal Resource Area Impacts:

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	a. square feet	b. square feet	c. c/y dredged	d. c/y dredged
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	a. square feet	b. square feet	c. c/y nourishment	d. c/y nourishment
14. <input type="checkbox"/> Coastal Dunes	a. square feet	b. square feet	c. c/y nourishment	d. c/y nourishment
15. <input type="checkbox"/> Coastal Banks	a. linear feet	b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	a. square feet	b. square feet		
17. <input type="checkbox"/> Salt Marshes	a. square feet	b. square feet	c. square feet	d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	a. square feet	b. square feet		
	c. c/y dredged	d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	a. square feet	b. square feet	c. square feet	d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	c. c/y dredged	d. c/y dredged		
21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	a. square feet	b. square feet		

22.

Restoration/Enhancement (For Approvals Only)

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage



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that has been entered in Section B.5.c & d or B.17.c & d above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

23.

Streams Crossing(s)

If the project involves Stream Crossings, please enter the number of new stream crossings/number of replacement stream crossings.

a. number of new stream crossings

b. number of replacement stream crossings

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. the work is a maintenance dredging project as provided for in the Act; or
 - b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not exceed the issuance date of the original Final Order of Conditions.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.
8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work..
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

" Massachusetts Department of Environmental Protection"
[or 'MassDEP']



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11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before Mass DEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS

19. The work associated with this Order(the "Project") is (1) is not (2) subject to the Massachusetts Stormwater Standards. If the work is subject to Stormwater Standards, then the project is subject to the following conditions;
 - a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollutant Discharge Elimination System Construction General Permit as required by Stormwater Standard 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
 - b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that: *i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures; *ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized; *iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10; *iv.* all post-construction stormwater BMPs are installed in



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accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition; v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 19(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following: i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollutant Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 19(f) through 19(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 19(f) through 19(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.
- g) The responsible party shall:
 - 1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 - 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 - 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.



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- 1) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions:

SEE ATTACHED



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D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes No

2. The Conservation Commission hereby (check one that applies):

a. DENIES the proposed work which cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:

1. Municipal Ordinance or Bylaw _____ 2. Citation _____

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order or Conditions is issued. Which are necessary to comply with a municipal ordinance or bylaw:

b. APPROVES the proposed work, subject to the following additional conditions.

HUDSON

1. Municipal Ordinance or WETLANDS
Bylaw PROTECTION
BYLAW _____

2. Citation _____

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows:

SEE ATTACHED



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E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

12/10/2024

1. Date of Issuance

7

2. Number of Signers

Please indicate the number of members who will sign this form.

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

By vote on April 2, 2020 the individuals listed below have authorized the Conservation Agent to sign on their behalf pursuant to the signature authorization recorded with the Middlesex South Registry of Deeds Book 74456 Page 40. They also intend for the typed names below to serve as their electronic signature for any entity (MassDEP) that accepts electronic signatures.

Signatures:

Jacob Millette

James Martin

Debbi Edelstein

Brandon Parker

Heidi Graf

Brooke Warrington

Paul Osborne

by hand delivery on

by certified mail, return receipt requested, on

Date 12/10/2024

Date

Jacob Millette
 Conservation Agent
 12/10/2024



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E. Signatures

This Order is valid for three years from the date of issuance, unless otherwise specified pursuant to General Condition #4. If this is an Amended Order of Conditions, the Amended Order expires on the same date as the original Order of Conditions.

Please indicate the number of members who will sign this form. This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Signatures:

Heidi Graf

James Martin

Brandon Parker

by hand delivery on

Date

Debbi Edelstein

Paul Osborne

Brooke Warrington

Jacob Millette

by certified mail, return receipt requested, on

Date

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

G. Recording Information

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land



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subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

HUDSON

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

HUDSON

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

539 MAIN STREET

Project Location

190-0711

MassDEP File Number

Has been recorded at the Registry of Deeds of:

County

Book

Page

for:

Property Owner STEVEN SANTOS

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

Rev. 4/1/2010

**Special Conditions Under Massachusetts Wetlands Protection Act
And Hudson Wetlands Protection Bylaw**
539 Main Street – Sauta Field
MassDEP File #190-0711

Findings of Fact

Existing Conditions

The site is an approximately 20-acre Town of Hudson public recreation facility with a parking lot and two athletic fields. A one-story building has restrooms and concessions. Large metal storage containers sit on a gravelly area near the building. A perennial stream tributary to Fort Meadow Brook flows through the central portion of the site. The rest of the site contains undeveloped land. The applicant estimates 6.2% of the Riverfront Area on site is currently degraded.

Proposed Conditions

The applicant proposes to construct a wooded dog park, partly in Riverfront Area and Buffer Zone. Trees of dbh 8" or greater will be retained. The outer parts of the dog park will be left undisturbed but the area within the trails will be cleared of small trees and undergrowth and filled with wood chips. At least one of the shipping containers will be removed and the area will be revegetated with native plants. Approximately 2390 square feet of impervious surface will be added for the walking paths and patio areas, resulting in a total 6.7% of Riverfront Area being degraded. A small rain garden will help absorb stormwater runoff. A bioswale vegetated with native plants will run along the length of the park providing a buffer for the resource areas.

Care will be taken when removing vegetation to avoid damaging the roots of nearby trees. No grubbing will occur and work will be at as high an elevation as possible. Any root cuts will be as clean as possible to facilitate healing. An environmental monitor shall supervise vegetation removal.

Documents

- Notice of Intent Application: Proposed Dog Park; prepared by LEC Environmental Consultants; dated July 2, 2024
- Town of Hudson: Hudson Dog Park; prepared by KZLA; dated 9/25/2024; signed and stamped by Kyle S. Zick PLS #1163; scale 1"=20'
- Proposed Dog Park Sauta Complex: Stormwater Summary Report; prepared by LEC; dated 8/2/2024; revised 11/18/2024
- Hudson Dog Park Riverfront Summary; prepared by KZLA; dated 11/19/2024; signed and stamped by Kyle S. Zick PLS #1163; scale 1"=50'
- Hudson Dog Park at Sauta Fields: Drainage Areas; prepared by Hancock Associates; dated 11/11/2024; scale 1"=10'
- Hudson Dog Park at Sauta Fields: Drainage Study of Proposed Development; prepared by Hancock Associates; dated 11/20/2024
- Hudson Dog Park DEP comments; prepared by KZLA; dated 11/21/2024
- Illicit Discharge Compliance Statement: Town of Hudson-Hudson Dog Park; dated 11/18/2024

Special Conditions

**Special Conditions Under Massachusetts Wetlands Protection Act
And Hudson Wetlands Protection Bylaw**
539 Main Street – Sauta Field
MassDEP File #190-0711

GENERAL:

19. The Findings of Fact are incorporated as a special condition and given equal status as a special condition of this Order.
20. The Conservation Commission shall be notified in writing at the time of any transfer in the title to the property or any change in contractor/developers prior to issuance of the Certificate of Compliance. The name, address, and telephone number of the new owner shall be included in the notification as well as certification that the new owner has been provided with a copy of this Order of Conditions.
21. No excavated material shall be disposed of in violation of any local, state, or federal laws. All stumps must be removed from the site; no burying of stumps on site is permitted.
22. Plantings must be predominantly native plants. No invasive vegetation shall be planted.

PRECONSTRUCTION:

23. Within thirty (30) days of the issuance of this Order of Conditions, the applicant, property owner, project representative, or other applicable party must record the original copy of the Order with the Registry of Deeds. Proof of recording is required to be submitted to the Commission or Conservation Agent prior to the pre-construction site visit and commencement of work.
24. Erosion control shall consist of double-staked straw bales or wattles. Only invasive free erosion control shall be used.
25. Prior to the beginning of work, the applicant shall:
 - a. Provide the Conservation Commission with the name and telephone number in writing, of the person who will be immediately responsible for supervision of all work on the project site and compliance with this Order of Conditions. The Conservation Commission shall be notified in the event that the site supervisor or contractor is changed.
 - b. Clearly mark the limits of work in the field and instruct all workers not to work beyond the limits.
 - c. Post the DEP number so that it can be clearly seen from the street.
 - d. Notify Conservation Commission of the date upon which work will commence.
 - e. Properly install all siltation controls according to the plans approved by the Conservation Commission and arrange with the Commission to have a site visit after installation, before work begins.

**Special Conditions Under Massachusetts Wetlands Protection Act
And Hudson Wetlands Protection Bylaw**
539 Main Street – Sauta Field
MassDEP File #190-0711

DURING CONSTRUCTION

26. Care will be taken when removing vegetation to avoid damaging the roots of nearby trees. No grubbing will occur and work will be at as high an elevation as possible. Any root cuts will be as clean as possible to facilitate healing. An environmental monitor shall supervise vegetation removal.

POSTCONSTRUCTION

27. Two (2) full growing seasons shall be required to determine that plantings in the rain garden and bio-infiltration swale have successfully established.
 - a. During this 2-year period, the applicant/property owner shall submit a report from a at the end of each growing season describing the condition of the plantings. If greater than 25% of plantings are not in good health then replacement plantings are required. In addition, if two adjacent shrubs within the swale should die, at least one must be replaced in order to maintain an even density along the length of the swale.
 - b. The consultant shall prepare a final report on the status of the plantings as part of the Request for a Certificate of Compliance. Successful establishment of the plantings will mean that:
 - a. at least 75% of the plantings have survived and are in good health and that the planting is free of invasive species.
 - b. if two adjacent shrubs within the swale should die, at least one has been replaced

Successful establishment is a requirement for the issuance of a Certificate of Compliance.

28. Prior to the issuance of a Certificate of Compliance the site shall be stabilized with vegetation or other measures approved by the Conservation Commission.
29. Prior to the issuance of a Certificate of Compliance and after the site has been stabilized, all erosion controls shall be removed from the site.
30. Prior to the issuance of a Certificate of Compliance, the applicant shall submit to the Conservation Commission for review and approval an as-built plan and a letter of compliance stamped by a registered professional engineer. Said plan and letter shall show that all conditions of this Order have been complied with in a satisfactory manner.

CONDITIONS IN PERPETUITY

31. Fertilization of lawn and landscaped areas is a significant source of excess nutrient loading in downstream water bodies. No fertilizer may be used on lawns in the Riverfront Area or Buffer Zone. This Condition is ongoing and does not expire with the expiration of the Order of Conditions or the issuance of a Certificate of Compliance.
32. The raingarden and bio-infiltration swale shall be maintained in perpetuity, and re-vegetated with native shrubs when necessary. This Condition is ongoing and does not expire with the expiration of the Order of Conditions or the issuance of a Certificate of Compliance.

APPENDIX

Exhibit B: Town of Hudson Standard Contract

Town of Hudson

Standard General Contract



Contract for:

Company name
Address
Address

TOWN OF HUDSON

STANDARD GENERAL CONTRACT

This Contract is entered into on this date, by and between the **TOWN OF HUDSON**, a duly organized and existing municipal corporation in the Commonwealth of Massachusetts, by its officials, officers and agents, with no personal liability, with its principal government offices located at the Town Hall, 78 Main Street, Hudson, Massachusetts 01749 (the “Town”), and

INSERT CONTRACTOR NAME, a duly organized and existing **business corporation or limited liability company (LLC), LLP, or sole proprietorship (CHOOSE WHICH APPLIES)**, in good standing, with regulatory agencies of the Commonwealth of Massachusetts, with business offices located at **INSERT ADDRESS, TELEPHONE NUMBER, FAX NUMBER AND E-MAIL ADDRESS** (“Contractor”).

RECITALS

WHEREAS, the Contractor will furnish the Town with _____;

WHEREAS, the Town desires to purchase such goods and/or services for public purposes from Contractor in a timely manner;

WHEREAS, it was one of the conditions of the award of the contract that a formal agreement should be executed, by the Contractor and the Town, evidencing the terms of the award; and

NOW THEREFORE in consideration of the mutual covenants contained the parties agree as follows:

1. **Description.** This is a Contract for the procurement of the following:

INSERT BRIEF DESCRIPTION OF THE PROJECT (SERVICES OR MATERIALS)

2. **Price.** The Contract Price to be paid to the Contractor by the Town is: **\$000,000.00**

3. **Payment Terms.** To be made as follows:

3.1 As invoiced, thirty (30) days net.

3.2 Fees and approved reimbursable costs combined shall not exceed **\$000,000.00** as more fully set forth in the Contractor's response to the **INSERT BRIEF DESCRIPTION OF BID PACKET, ETC.**

3.3 There shall be no further costs, fees or reimbursable charges due to the Contractor under this Contract unless said fees and/or costs are set forth in writing in an Amendment hereto expressly agreed upon by the parties. The Town will not pay any surcharge or premium in addition to the verified direct out of pocket expenses, if any.

3.4 Final payment including any unpaid balance of the Contractor's compensation shall be due and payable when the **PROJECT/GOODS/SERVICES** is/are delivered to the Town, when the project is completed and the services are completed and/or the goods are delivered and accepted. **(CHOOSE ALL THAT APPLY)**

4. Definitions.

4.1 *Acceptance:* All contracts require proper acceptance of the described goods or services by the Town. Proper acceptance shall be understood to include inspection of goods to verify fitness for the purpose intended and certification of acceptable performance for services, in writing, by authorized representatives of the Town to ensure that the goods or services are complete and are as specified in the Contract.

4.2 *Contract Documents:* All documents relative to the Contract including (where used) Request for Proposal (RFP) and all attachments thereto, Instructions to Bidders, Proposal Form, General Conditions, Supplementary General Conditions, General Specifications, Other Specifications included in Project Manual, drawings, all addenda issued during the bidding period, insurance certificates and Contractor's response to the RFP and any bonding requirements for performance. Contract Documents complementary and are integrated, and what is called for by anyone shall be as binding as

if called for by all. The intention of the document is to include all labor and materials, equipment and transportation necessary for the proper performance of the Contract.

4.3 Contractor: The “other party” to any contract with the Town. This term shall (as the sense and particular contract so require) include Vendor, Contractors, Engineer, or other label used to identify the other party in the particular contract. Use of the term “Contractor” shall be understood to refer to any other such label when used, whether business corporation, limited liability company, partnership or sole proprietorship.

4.4 Date of Substantial Performance: The date when the Town determines the work is sufficiently complete, the services are performed, or the goods delivered, in accordance with Contract Documents, as modified by approved amendment(s) and change orders.

4.5 Goods: Equipment, commodities, supplies, services or materials.

4.6 Subcontractor: Those having a direct contract with the Contractor. The term includes one who furnishes material worked to a special design according to the drawings or specifications of this work, but does not include one who merely furnishes material not so worked.

4.7 Work: The services to be performed or materials contracted to be furnished, or both.

4.8. Independent Contractor. (Need to insert definition)

5. Contract Documents.

Contractor shall furnish Town with _____, subject to and in compliance with all conditions, covenants, stipulations, terms and provisions contained in the Request for Proposal Specifications, Instructions to Bidders and related documents all of which is attached hereto as Exhibit “A” and incorporated herein by reference. Contractor shall

provide these materials or services for the sum equal to the aggregate purchase price of the goods and professional services to be furnished by Contractor at the prices and rates specified in the Contractor's proposal also attached hereto as Exhibit "B" and incorporated herein by reference.

Nothing contained herein shall be construed as a joint venture between the Contractor and the Town. In this regard, Contractor shall be deemed for all purposes herein to be an Independent Contractor. Contractor is required to sign the Certificate of Non-Collusion attached as Exhibit "C".

6. Quality of Service.

Contractor acknowledges that reliability of quality service is essential in this agreement with the Town, and agrees to adhere faithfully to the scope of services as described in the bid documents.

7. Contractor Performance.

Contractor covenants and agrees to faithfully perform all of its obligations under this agreement and the incorporated documents hereto. Said performance shall be in a professional and workmanlike manner and in accordance with the standard of care and conduct that is generally acceptable in the business or profession. Further, Contractor shall complete and sign all forms attached herein as Exhibits "C-I".

8. Contractor Warrantees and Guarantees.

8.1. The contractor warrants that (1) the goods sold are merchantable, (2) that they are fit for the purpose for which they are being purchased, (3) that they are absent any latent defects and (4) that they are free and clear of all liens and claims, and (5) that they are in conformity with any sample which may have been presented to the Town.

8.2. The Contractor guarantees that upon inspection, any defective or inferior goods shall be replaced without additional costs to the Town. Contractor will assume any additional costs accrued by the Town due to the defect or inferior goods.

8.3. The Contractor guarantees all goods for a period of one (1) year provided that if any express or implied warranties exist of a term greater than one (1) year, then such warranties will supersede the one (1) year warranty specified herein.

9. Contractor's Certification.

Contractor certifies the suitability, professionalism, and capability of all individuals employed to furnish services as specified herein by Contractor and in any documents incorporated herein by reference.

10. Payments.

The Town agrees to faithfully pay the Contractor, when due and payable, and under the terms of all such incorporated documents and instruments to this agreement, all such contracted sums.

11. Term of Contract and Time for Performance.

This contract shall be fully performed by the Contractor in accordance with the provisions of the Contract Documents on or before **INSERT DATE**, unless expressly extended, in writing, at the sole discretion of the Town, and not subject to assent by the Contractor, and if extended by the Town, solely in its discretion, only for good cause shown, and further subject to the availability and appropriation of public funds as certified by the Town Accountant. Time is of the essence for the completion of the Contract.

12. Subject to Appropriation.

Notwithstanding anything in the Contract Documents to the contrary, any and all payments which the Town is required to make under this Contract shall be subject to appropriation or other availability of funds as certified by the Town Accountant. In the absence of appropriation or availability as certified herein, this Contract shall be immediately terminated without liability for damages, penalties or other charges to the Town. In the event this is a multi-year contract, and not for a basic recurring service, this Contract shall be subject to annual appropriation and in the event funds are not so appropriated, this Contract shall terminate immediately without liability for damages, penalties, charges or costs to the Town.

13. Permits and Approvals.

All Permits, licenses, approvals and all other legal or administrative prerequisites and conditions prerequisites to its performance of the Contract shall be timely secured and paid for by the Contractor.

14. Termination and Default.

14.1. *Without Cause.* The Town may terminate this Contract on seven (7) calendar days notice, without cause, and for public convenience when, in the Town's sole discretion, it determines it is in the best public interests of the Town to do so, by providing notice to the Contractor, in writing, and shall be deemed delivered and received when given, in person, to the Contractor, or when received by e-mail, fax, express mail, certified mail with return receipt requested, first class mail with postage prepaid or delivered by any other appropriate method evidencing actual receipt by the Contractor. Upon termination without cause, Contractor will be paid for services rendered to the date of termination if performed in good faith.

14.2. *For Cause.* If the Contractor is determined by the Town to be in default of any provision, term condition or requirement of this Contract, then the Town may terminate said Contract upon seven (7) calendar days written notice and shall be deemed delivered and received when given in person to the Contractor at its place of business specified on Page 1 hereof, or when received by e-mail, fax, express mail, certified mail, with return receipt requested, first class mail, with postage prepaid, or delivered by any other appropriate method evidencing actual receipt by the Contractor. In the sole discretion of the Town, Contractor may be afforded a cure period for any default as specified herein Section 14.3.

14.3. *Default.* The following shall constitute events of a default under the Contract.

- a.** Any material misrepresentation made by the Contractor to the Town;
- b.** Any failure to perform any of its obligations under this Contract including but not limited to:
 - (i)** failure to commence performance of this Contract at the time specified in this Contract due to a reason or circumstance within the Contractor's control;
 - (ii)** failure to perform this Contract with sufficient personnel and equipment or with sufficient material to ensure the completion of this Contract within the specified time due to a reason or circumstance within the Contractor's control;
 - (iii)** failure to perform this Contract in a manner satisfactory to the Town;
 - (iv)** failure to promptly re-perform within a reasonable time as determined by the Town, in its sole discretion, the services that were rejected by the Town as unsatisfactory or erroneous;

- (v) discontinuance of the services for reasons not beyond the Contractor's control;
- (vi) failure to comply with a material term of this Contract including, but not limited to, the provision of adequate insurance and non-discrimination;
- (vii) any other acts specifically and expressly stated in this Contract as constituting a basis for termination of this Contract; and
- (viii) failure to fully comply with any and all requirements of Federal or State law and/or regulations, Town bylaw and/or regulations.

14.4. *Return of Property.* Upon termination, Contractor shall immediately return to the Town without limitation, all documents, plans, drawings, tool and items of any nature whatever, supplied to Contractor by the Town to Contractor in accordance with this Agreement.

14.5. *Production of Documents.* All records, documents, data, reports or other material, regardless of form or finish, produced by the Contractor as a result of services provided hereunder, are work for hire, and shall become the property of the Town upon creation. The Contractor may not assert any right, title or interest in any product produced under this Agreement.

The Town may request, at any time during and/or after the termination of the Contract any records, documents, data, reports or other materials produced by the Contractor under this Contract.

15. Suspension of Delay.

The Town may order the Contractor, in writing, to suspend, delay or interrupt all or any part of the services, without cause, for such period of time as the Town may determine to

be appropriate for its public convenience. In the event of any such suspension, delay or interruption, the Contractor's compensation shall be equitably adjusted. No adjustment shall be made if the Contractor is or otherwise would have been responsible for the suspension, delay or interruption of the services, or if another provision of this Contract is applied to render an equitable adjustment.

16. No Damages for Delay.

Notwithstanding any contained in Section 9 to the contrary, if the Contractor is delayed, at any time, in performing or furnishing the Work by any act or neglect of the Town or its consultants, including, without limiting the generality of the foregoing, delay caused by failure of the site being available for work or ready to accept the Contractor's work or the failure of the owner or its consultants to furnish any work, materials, information, documentation, or decisions, the Contractor shall have no claim to any damages, costs, or expenses of any kind or nature, for any suspension, delay, interruption, hindrance, or acceleration of its work. Furthermore, to the extent Contractor is delayed, it shall be entitled to an extension of time to its period of contract performance upon authorization by the Town and the Contractor will have no claim for damages, cause, or expenses of any kind or nature, for any suspension, delay, interruption, or acceleration of its work in the event that the Town grants such an extension of time to the Contractor's performance.

17. Contractor's Breach and Town's Remedies.

Failure of the Contractor to comply with any of the provisions, terms, conditions or requirements of this Contract shall be deemed a material breach of this Contract, and the Town shall have all the rights and remedies provided in the Contract Documents, the right to cancel, terminate, or suspend the Contract in whole or in part, the right to maintain any and all actions at law or in equity or other proceedings with respect to a breach of this Contract, including "damages" which are not limited to costs, attorney's

fees or other damages resulting from said breach as well as specific performance, and the right to select among the remedies available to it by all of the above.

From any sums due to the Contractor for services, the Town may keep the whole or any part of the amount as a set-off for expenses, losses and damages incurred by the Town as a consequence of procuring other services as a result of any failure, omission or mistake of the Contractor in providing services as provided in this Contract.

18. Liquidated Damages.

If Contractor shall neglect, fail, or refuse to complete the work within the time specified or any proper extension thereof granted by the Town, then the Contractor agrees, as part consideration for the awarding of this Contract, to pay the sum of One Thousand (\$1,000.00) Dollars, per day, to the Town, not as a penalty, but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the Contract for completing the Work. The amount is fixed and agreed upon by and between the Town and the Contractor to be a reasonable approximation of the amount of damages which the Town would sustain, because of the impracticability and difficulty of fixing and ascertaining the actual damages the Town would, in such event, sustain.

19. Statutory Compliance.

19.1. This Contract will be strictly construed and governed by the provisions of applicable federal, state and local laws and regulations; and wherever any provision of the Contract or Contract Documents shall conflict with any provision or requirement of federal, state or local law or regulation, then the provisions of law and regulation shall control. Where applicable to the Contract, the provisions of the Massachusetts General Laws are incorporated by reference into this Contract, including but not limited to the following:

- a. M.G.L. Chapter 30B, Procurement of Goods and Services;
- b. M.G.L. Chapter 30, Section 39, et seq., Public Works Contracts; and
- c. M.G.L. Chapter 149, Section 44A, et seq., Public Buildings Contracts.

19.2. Wherever applicable law mandates the inclusion of any term and provision into a municipal contract, this Section shall be understood to import such term or provision into this Contract. To whatever extent any provision of this Contract shall be inconsistent with any law or regulation limiting the power or liability of cities and towns, such law or regulation shall control.

19.3. The Contractor shall comply with all federal, state and local laws, rules, regulations, policies and orders applicable to the Work provided pursuant to this Contract, such provisions being incorporated herein by reference, and shall be responsible for obtaining all necessary licenses, permits and approvals required for the performance of such Work.

The Contractor shall indemnify and hold the Town harmless for and against any and all fines, penalties or monetary liabilities incurred by the Town as a result of the failure of the Contractor to comply as referenced herein. If any discrepancy or inconsistency is discovered in the drawings, specifications or Contract for this work in violation of any such law, bylaw, regulation, order or decree, it shall forthwith report the same, in writing, to the Town. It shall, at all times, itself observe and comply with all such existing and future laws, bylaws, regulations, orders and decrees; and shall protect and indemnify the Town, and its duly appointed agents against any claim or liability arising from or based on any violation whether by him or its agents, employees or subcontractors or any such law, bylaw, regulation or decree.

20. Mediation.

Within ten (10) calendar days of the date that the Town has received written notice of a dispute regarding a contract item, the Town may require that the Contractor enter into a good faith effort to resolve the dispute through mediation. The equitable distribution of the costs of such mediation to the parties hereto shall be determined as part of the mediation process.

21. Conflict of Interest.

Both the Town and the Contractor acknowledge the provisions of the *State Conflict of Interest Law* pursuant to M.G.L. c.268A, and this Contract expressly prohibits any activity which shall constitute a violation of that law. The Contractor shall be deemed to have investigated the application of M.G.L. c.268A to the performance of this Contract; and by executing the Contract documents, the Contractor certifies, to the Town, that neither it nor its officers, agents, employees, or its subcontractors are thereby in violation of M.G.L. c.268A.

22. Certification of Tax Compliance.

This Contract must include a certification of tax compliance by the Contractor, as required by M.G.L. c.62C, Section 49A. This is a requirement of tax compliance by all contractors providing goods, services or real estate space to the Commonwealth or subdivision.

23. Non-Discrimination.

The Contractor shall carry out the obligations of this Agreement in compliance with all requirements imposed by or pursuant to federal, state and local ordinances, statutes, rules and regulations and policies prohibiting discrimination in employment, including but not limited to (a) *Title VII of the Civil Rights Act of 1964*; (b) *Age Discrimination in Employment Act of 1967*; (c) Section 504 of the Rehabilitation Act of 1973; (d) M.G.L. c.151B, and any other executive orders, rules, regulations, requirements and policies

relating thereto enacted by the Commonwealth of Massachusetts and the Town as they may be amended from time to time. Contractor shall not discriminate against any qualified employee or applicant for employment because of race, color, national origin, ancestry, age, sex, religion, physical or mental handicap or sexual orientation.

24. Assignment.

The Contractor shall not assign, sublet or otherwise transfer this Agreement, in whole or in part, without the prior written consent of the Town, and shall not assign any of the monies payable under this Contract, except by and with the written consent of the Town.

25. Condition of Enforceability against the Town.

This Contract is only binding upon and enforceable against the Town, pursuant to the following:

- a.** the Contract is signed by the Board of Selectmen or its duly authorized designee;
- b.** endorsed with approval by the Town Accountant as to appropriation or availability of funds; and
- c.** endorsed with approval by Town Counsel as to legal form.

26. Corporate Contractor.

If the Contractor is a corporation, it shall endorse upon this Contract (or attach hereto) its Clerk's Certificate certifying the corporate capacity and authority of the party signing this Contract for the corporation. Such certificate shall be accompanied by a letter or other instrument stating that such authority continues in full force and effect as of the date the

Contract is executed by the Contractor. This Contract shall not be enforceable against the Town of Hudson unless and until the Contractor complies with this section.

The Contractor, if a foreign corporation, shall comply with the provisions of the Massachusetts General Laws, Chapter 181, Sections 3 and 5 and all other applicable provisions thereof, and any Acts and Amendments relative thereto, and in addition thereto, relating to the appointment of the Commissioner of Corporations as its attorney, shall file with the Commissioner of Corporations a Power of Attorney and duly authenticated copies of its Charter or Certificate of Incorporation; and said Contractor shall comply with all the laws of the Commonwealth.

27. Contractor's Personnel.

The Contractor shall utilize only its qualified employees and shall not utilize any third-party contractors without prior written approval of the Town.

28. Liability of Public Officials.

To the full extent permitted by law, no official, employee, agent or representative of the Town of Hudson shall be individually or personally liable on any obligation of the Town under this Contract.

29. Indemnification:

To the fullest extent permitted by law, the Contractor shall indemnify, defend, and save harmless the Town, the architect/engineer and all of the Town and architect/engineer's officers, agents and employees from and against all suits and claims of liability of every name and nature, including attorney's fees and costs of defending any action or claim, for or on account of any claim, loss, liability or injuries to persons or damage to property of the Town or any person, firm, corporation or association arising out of or resulting from any act, omission, or negligence of the Contractor, subcontractors and its and their agents

or employees in the performance of this work covered by this Agreement. The foregoing provisions shall not be deemed to be released, waived or modified in any respect by reason of any surety or insurance provided by the Contractor under the Contract.

29.1 The Contractor further agrees to indemnify and hold harmless the Town, including the agents, employees and representatives from and against all claims, damages, losses and expenses, including attorney's fees, arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom and (b) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

29.2 The Contractor shall be responsible for all damage or injury to property of any character during the prosecution of the work resulting from any act, omission, neglect, or misconduct in the manner or method of executing the work or due to the non-execution of the work or at any time due to defective work or materials.

29.3 In any and all claims against the town or any of their agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this paragraph shall not be limited in anyway by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workmen's Compensation Acts, disability benefit acts or other employee benefit acts.

29.4 The Contractor hereby assumes the entire responsibility and liability for any and all injury to or death of any or all persons, including the Contractor's employees, and for any and all damage to property caused by, resulting from or arising in whole or in part out of any act, omission, or negligence on the part of the Contractor or of any Subcontractor or

of anyone directly or indirectly employed by any of them, or of anyone for whose acts any of them may be liable in connection with operations under the Contract.

The foregoing provisions shall not be deemed to be released, waived, limited or modified in any respect by reason of any surety or insurance provided by the Contractor under the Contract.

30. Insurance.

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

Failure to provide and continue in force such insurance, during the period of this Contract, shall be deemed a material breach of this Contract, shall operate as an immediate termination thereof, and Contractor shall indemnify the Town for all losses, claims, and actions resulting from the failure to provide the insurance required by this Article.

The Contractor shall furnish to the Town a certificate evidencing of such insurance prior to the execution of this Contract before the same shall be binding on the parties thereto, unless expressly waived by the Town.

30.2 Other Insurance requirements are as follows:

- a.** Comprehensive commercial general liability insurance with limits of at least One (\$1,000,000) Million Dollars per occurrence and Three (\$3,000,000) Million Dollars annual aggregate for property damage and One (\$1,000,000) Million Dollars per person and Three (\$3,000,000)

Million Dollars per occurrence for bodily injury, which shall include the *Town of Hudson as an additional insured with the policy so endorsed*, and which shall cover bodily injury, sickness or disease, or death of any person including employees and those persons other than the Contractor's employees, and claims insured by usual personal liability coverage, death, or property damage arising out of the Work including injury or destruction of tangible property, including loss of use resulting therefrom.

- b.** Motor Vehicle Insurance for any motor vehicles used in performing the Work, with limits of at least \$500,000 per person, and \$1,000,000 per accident.
- c.** The intent of the specifications regarding insurance is to specify minimum coverage and minimum limits of liability acceptable under the Contract. However, it shall be the Contractor's responsibility to purchase and maintain insurance of such character and in such amounts as will adequately protect it and the Town from and against all claims, damages, losses and expenses resulting from exposure to any casualty liability in the performance of the work.
- d.** All policies shall identify the Town *as an additional insured with the policy so endorsed, with a Certificate of Insurance issued and a copy of the Insurance Policy furnished before the execution of this Contract* (except Workers' Compensation) and shall provide that the Town shall receive written notification at least thirty (30) days prior to the effective date of any amendment or cancellation. Renewal Certificates shall be filed with the Town at least ten (10) days prior to the expiration of the required policies. Certificates evidencing all such coverage shall be provided to the Town upon the execution of this Contract, and upon the renewal of any such coverage. Each such certificate shall specifically refer to this Contract

and shall state that such insurance is as required by this Contract. Failure to provide or to continue in force, such insurance shall be deemed a material breach of this Contract and shall be grounds for immediate termination. Insurance shall include: Workers Compensation/Employers' Liability Insurance, Business Automobile Liability Insurance, and Commercial General Liability Insurance (CGL). The CGL policy shall include coverage for liability arising from premises, operations, independent Contractors, personal injury, contractual liability. All Certificates of Insurance shall be on the "MIIA" or "ACORD" Certificate of Insurance form, shall contain true transcripts from the policies, authenticated by the proper officer of the Insurer, evidencing in particular those insured, the extent of coverage, the location and operations to which the insurance applies, the expiration date and the above-mentioned notice clauses. All insurance shall be written on an occurrence basis. Coverage's shall be maintained, without interruption, from date of the Contract until date of final payment and termination of any coverage required to be maintained after payment.

- e. The Contractor shall obtain and maintain during the term of this Contract the insurance coverage in companies licensed to do business in the Commonwealth of Massachusetts, in good standing, and acceptable to the Town.

31. Other Documents and Supporting Materials.

Any materials, reports, information, data, etc. given to or prepared or assembled by the Contractor under this Contract are to be kept confidential and shall not be made available to any individual or organization by the Contractor (except agents, servants, or employees of the Contractor) without the prior express written approval of the Town, except as otherwise required by law. The Contractor shall comply with the provisions Chapter 66

of the General Laws of Massachusetts as it relates to public documents, and all other state and federal laws and regulations relating to confidentiality, security, privacy and use of confidential data.

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

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

Any plans, sketches, drawings, renderings and specifications created to conform to the requirements of this Contract shall be compliant with all federal, state and local laws and rules, regulations for ADA compliance and accessibility.

32. No Employment.

The Contractor acknowledges and agrees that it is acting as an independent contractor for all services rendered pursuant to this Contract, and neither the Contractor, nor its officers, employees, agents, servants nor any person for whose conduct the Contractor is responsible shall be considered an employee or agent of the Town for any purpose and shall not file any claim or bring any action for any worker's compensation unemployment

benefits and compensation for which they may otherwise be eligible as a Town employee as a result of work performed pursuant to the terms of this Contract.

33. Audit, Inspection and Record Keeping.

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

34. Payment.

The Town agrees to make all reasonable efforts to pay the Contractor the sum set forth in the Contractor's bid or proposal within thirty (30) days of receipt of an invoice detailing the work completed and acceptance from the Town of the work completed.

35. Waiver and Amendment.

Amendments or waivers of any additional term, condition, covenant, duty or obligation contained in this Contract may be made only by express, written amendment executed by all signatories to the original Contract, prior to the effective date of the amendment.

To the extent allowed by law, any conditions, duties, and obligations contained in this Contract may be waived only by written Agreement by both parties.

Forbearance or indulgence, in any form or manner, by a party shall not be construed as a waiver or in any manner, limit the legal or equitable remedies available to that party. No waiver by either party of any default or breach shall constitute a waiver of any subsequent default or breach of a similar or different matter.

36. Severability.

If any term or condition of this Contract or any application thereof shall to any extent be held invalid, illegal or unenforceable by the court of competent jurisdiction, the validity, legality, and enforceability of the remaining terms and conditions of this Contract shall not be deemed affected thereby unless one or both parties would be substantially or materially prejudiced.

37. Forum and Choice of Law.

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

38. Notices.

Any notice permitted or required under the provisions of this Contract, to be given or served by either of the parties hereto upon the other party shall be in writing and signed in the name or on the behalf of the party giving or serving the same. Notice shall be deemed to have been received at the time of actual service or three (3) business days after the date of a certified or registered mailing properly addressed.

Notice to the Contractor shall be deemed sufficient if sent to the explicit corporate address:

INSERT CORPORATE ADDRESS

Notice the Town shall be deemed sufficient if sent to the following government offices:

Board of Selectmen
c/o Executive Assistant
Town of Hudson
Town Hall
78 Main Street
Hudson, Massachusetts 01749

39. Binding on Successors.

This Contract is binding upon the parties hereto, their successors, assigns and legal representatives (and where not corporate, the heirs and estate of the Contractor). Neither the Town nor the Contractor shall assign or transfer any interest in the Contract without the written consent of the other.

40. Entire Agreement.

This Contract, including all documents incorporated herein by reference, constitutes the entire integrated agreement between the parties with respect to the matters described. This Contract supersedes all prior agreements, negotiations and representations, either written or oral, and it shall not be modified or amended except by a written document executed by the parties hereto.

41. Supplemental Conditions.

The foregoing provisions apply to all contracts to which the Town of Hudson shall be a party. One of the following supplements must be “checked” as applicable to this Contract and submitted as an attachment. It shall, in any event, apply as the nature of the Contract requires.

The Supplement contains additional terms governing the Contract which are incorporated herein by reference:

<input type="checkbox"/>	Goods	<i>Supplement “G”</i> – Applicable to contracts for the procurement of goods (governed by the provisions of M.G.L. c.30B).
<input type="checkbox"/>	Services	<i>Supplement “S”</i> – Applicable to contracts for the procurement of services (governed by the provisions of M.G.L. c.30B).
<input type="checkbox"/>	Construction	<i>Supplement “C”</i> – Applicable to all contracts for construction (governed by the provisions of M.G.L. c.30, Sec. 39M and M.G.L. c.149).

SPACE INTENTIONALLY LEFT BLANK

IN WITNESS WHEREOF, the parties have hereto and to two (2) other identical instruments, set forth their hands and executed this as an instrument under seal this the day and year first above written.

THE TOWN:

THE CONTRACTOR:

Board of Selectmen
or its Designee (Executive Assistant),
with no personal liability,
hereunto duly authorized.

Division/Department Head,
with no personal liability,
hereunto duly authorized

Company/Contractor Name

Signature
hereunto duly authorized

Print Name & Title

CERTIFICATION OF AVAILABILITY OF FUNDS:

Town Accountant, Date
with no personal liability, hereunto duly authorized

APPROVED AS TO LEGAL FORM:

Town Counsel Date

EXHIBIT A

Full RFP Package

EXHIBIT B

Contractor's Proposal

EXHIBIT C

Certificate of Non-Collusion

Chapter 30B, § 10

“The undersigned certifies under penalties of perjury that this proposal 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.”

Individual or Corporate Name of Proposer

Signature of Authorized Agent

Printed Name of Authorized Agent

Title

Date

Form must be signed by a duly authorized officer(s) eligible to sign contract documents for the firm. Consortiums, joint ventures, or teams submitting proposals will not be considered responsive unless it is established that all contractual responsibility rests solely with one contractor or one legal entity. The Proposal must indicate the responsible entity.

Contractors should be aware that joint responsibility and liability will attach to any resulting contract and failure of one party in a joint venture to perform will not relieve the other party or parties of total responsibility for performance.

EXHIBIT D

Certificate of Tax Compliance

Pursuant to Massachusetts General Law Chapter 62C, § 49A, I hereby certify under penalties of perjury that I have, to the best of my knowledge and belief, filed all state tax returns and paid all state taxes required under law.

Social Security or Federal I.D. Number

Signature: Individual or Corporate Officer

Title

Date

Please Print:

Corporate Name (as used for tax filing)

Address

P.O. Box

City, State, Zip Code

* Your Social Security Number or Federal Identification Number will be furnished to the Massachusetts Department of Revenue to determine whether you have met tax filing or tax payment obligations. Proposers who fail to correct their non-filing or delinquency will not have a contract or other agreement issued, renewed or extended. This request is made under the authority of M.G.L. Ch. 62C, § 48A.

Form must be signed by a duly authorized officer(s) eligible to sign contract documents for the firm. Consortiums, joint ventures, or teams submitting proposals will not be considered responsive unless it is established that all contractual responsibility rests solely with one contractor or one legal entity. The Proposal must indicate the responsible entity.

Contractors should be aware that joint responsibility and liability will attach to any resulting contract and failure of one party in a joint venture to perform will not relieve the other party or parties of total responsibility for performance.

EXHIBIT E

**Certificate of Authority
Meeting of Board of Directors**

At a meeting of the Directors of the _____ duly called
(Corporation)

and held at _____ on the _____ day of

_____, in the _____ year at which a quorum was present and acting, it

was voted, that _____ the _____ of this
(Name) (Title/position)

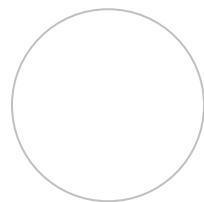
Corporation is hereby authorized and empowered to make, enter into, sign, seal and deliver,
on behalf of this Corporation a Proposal and subsequent Contract for

(brief description)

with the Town of Hudson, and any performance and payment bonds (each in the amount of the
Contract) in connection with such Contract, if applicable.

*I hereby certify that the above is a true and correct copy of the record, that said vote has
not been amended or repealed and is in full force and effect as of this date, and that*

_____ is a duly elected _____ of
this Corporation.



_____ Clerk or Secretary of the Corporation

If a corporation, attach
certificate of vote or apply
corporate seal here)

EXHIBIT F

EQUAL OPPORTUNITY CERTIFICATION

Pursuant to 28 CFR Part 42.204 (d), I certify that my employment practices comply with Equal Opportunity Requirements and complies with 28 CFR Part 42.202.; that my organization complies with the Americans with Disabilities Act.

Individual or Corporate Name of Proposer

Signature of Authorized Agent

Printed Name of Authorized Agent

Title

Date

Form must be signed by a duly authorized officer(s) eligible to sign contract documents for the firm. Consortiums, joint ventures, or teams submitting proposals will not be considered responsive unless it is established that all contractual responsibility rests solely with one contractor or one legal entity. The Proposal must indicate the responsible entity.

Contractor should be aware that joint responsibility and liability will attach to any resulting contract and failure of one party in a joint venture to perform will not relieve the other party or parties of total responsibility for performance.

EXHIBIT G

Certificate of Insurance

EXHIBIT H

**Wage Rates &
Compliance Forms**

EXHIBIT I

LABOR HARMONY AND OSHA TRAINING CERTIFICATION

The undersigned certifies that:

1. We are able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work;
2. 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. All employees to be employed in the work subject to this bid 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: Individual or Corporate Officer

Date

APPENDIX

Exhibit C: Supplement Construction Contract

EXHIBIT C – CONTRACT SUPPLEMENT

Applicable to contracts for the construction of (1) *public buildings* and *public works* governed by the provisions of M.G.L. c.30B; (2) *public buildings* governed by the provisions of M.G.L. c.149, Section 44A, *et seq.*; and (3) *public works* governed by the provisions of M.G.L. c.30, Section 39M, *et seq.*

1. This form supplements the Town of Hudson Contract with **INSERT CONTRACTOR** and applies only to contracts for the construction, reconstruction, alteration, remodeling or repair of *public works* or *public buildings*.
2. Wherever the law requires one contracting with a city or town to be bonded, such obligation shall be understood to be a term and condition of this Contract. The Contractor agrees to secure such bond (where required) in the form required by the Town and provide an original thereof, to the Town, prior to the commencement of performance.
3. **Equality.**
 - 3.1. In the case of a closed Specification written for a specific item or items to be furnished under the Base Bid, such specifications shall, as applicable, be in compliance with the Massachusetts General Laws, Chapter 30, Section 39M and Chapter 149, Section 44A *et seq.*
 - 3.2. Where the name of an item, material or manufacturer is mentioned in the Specifications or on the Drawings, except as aforementioned, the intent is to establish a standard and in no way should be construed to exclude any item or manufacturer not mentioned by name, but whose product meets the Specifications as to *design, utility and quality*. Final decision shall rest solely with the Town's Project Representative (herein "Project Representative") as to its acceptability.

4. Change Orders.

- 4.1. Change orders must receive the approval of the Town's Board of Selectmen or the Executive Assistant as the Board's designee and the appropriate Department or Division Head and must be supported and recommended by the project engineers and/or architects, if any.
- 4.2. Written notice stating the general nature of each Change Order shall be delivered by the Contractor to the Town or its consultant promptly (but in no event later than thirty (30) days) after the start of the event giving rise thereto. The responsibility to substantiate a Change Order shall rest with the Contractor making said change. Notice of the amount or extent of the Change Order, with supporting data, shall be delivered to the Town or its consultant within sixty (60) days after the start of such event (unless the Town or its consultants allows additional time for Contractor to submit additional or more accurate data in support of such Change Order). A Change Order for an adjustment in Contract Price shall be prepared in accordance with the provisions of this Contract, a Change Order for an adjustment in contract

time shall be prepared in accordance with the provisions of this Contract. Each Change Order shall be accompanied by Contractor's written statement that the adjustment claimed is the entire adjustment to which the Contract believes it is entitled as a result of said event. The Town shall submit any response to the Engineer and the Contractor within thirty (30) days after receipt of the Contractor's last submittal (unless Engineer allows additional time).

- 4.3.** Change orders to contracts governed by Massachusetts General Laws, Chapter 30B may not increase the quantity of goods or services provided by more than twenty-five (25%) per cent, in compliance with M.G.L. c.30B, Sec. 13.
- 5.** Within thirty (30) calendar days of the date that the Town has received written notice of a dispute regarding a contract item, term or condition, the Town may require that the Contractor enter into a good faith effort to resolve the dispute through mediation prior to either commencing litigation. The equitable distribution of the costs of such mediation to the parties hereto shall be determined as part of the mediation process.
- 6.** The Contractor will carry out the obligations of this contract in full compliance with all of the requirements imposed by the *Minimum Wage Law* pursuant to M.G.L. c.151, Sec. 1, *et seq.*, and any executive orders, rules, regulations, and requirements of the Commonwealth of Massachusetts as amended. The Contractor will, at all times, comply with the wage rates as determined by the Commissioner of the Department of Labor and Industries, under the provisions of M.G.L. c. 149, Sec. 26 and Sec. 27D thereof, as amended as shall be in force and as amended.
- 7.** The Contractor shall continuously maintain adequate protection of all work from damage and shall protect the property of the Town and others, including adjacent property, from injury or loss arising in connection with the Contract. The Contractor shall make good any such damage, injury or loss, except as may be directly due to errors in the Contract Documents or caused by agents or employees of the Town, or due to causes beyond the Contractor's control and not the Contractor's fault or negligence.
- 8.** The Contractor shall take all necessary precautions for the safety of employees on the work, and shall comply with all applicable provisions of federal, state and local laws and codes to prevent accidents or injury to persons on, about or adjacent to the premises where the work is being performed. The Contractor will erect and properly maintain, at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workers and the public, shall post danger signs warning against the hazards created by such features of construction such as pits, protruding nails, hosts, well holes, elevator hatchways, scaffolding, window openings, stairways and falling materials; and shall designate a responsible member of its organization on the work, whose duty shall be the prevention of accidents.
- 9.** The Town shall, at all times, have access to the work wherever it is in preparation or progress and the Contractor shall provide suitable accommodations for such access.

- 10.** The Contractor shall appoint a competent superintendent and foreman and any necessary assistants, all of whom shall be satisfactory to the Town. If the Town, in its sole discretion, determines that the construction superintendent, foreman, or assistants are unacceptable to the Town, then upon seven days notice from the Town, the Contractor shall replace such person or persons with people acceptable to the Town.
- 11.** The Contractor shall give efficient supervision to the work, using its best skill and attention. The Contractor shall carefully study and compare the drawings, specifications and other instructions and shall at once report to the Town any error, inconsistency or omission which shall be discovered. Included in this responsibility shall be supervision of all work performed by subcontractors on the work.
- 12.** Notwithstanding any other provision of this Contract to the contrary, if the Contractor should neglect to prosecute the work properly, or fail to perform the contract or any of its provisions, the Town, upon three days written notice, may, without prejudice to any other right and remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

12. Inspection by the Town's Project Representative.

- 12.1** The Town shall have the right to designate a Project Representative who may make periodic visits to the site to generally familiarize the Town with the progress and quality of the work, and to generally determine if the work is proceeding in accordance with the contract documents. The Project Representative will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the work, and will not be responsible for the Contractor's failure to carry out the construction work in accordance with the Contract Documents. During such visits and on the basis of these observations while at the site, the Project Representative will keep the Town informed on the progress of the work, will endeavor to guard the Town against defects and deficiencies in the work of contractors, and may condemn structural work as failing to conform to the Contract Documents. The Project Representative shall have authority to act on behalf of the Town only to the extent expressly delegated by the Town, which shall be shown to the Contractor, and shall have authority to stop the work whenever such stoppage may reasonably be necessary to insure the proper execution of the Contract.
- 12.2** In connection with the work, the Project Representative shall not be responsible for construction methods, means, techniques, sequences or procedures employed by the Contractor or the Contractor's safety programs, requirements, regulations, or precautions.

13. Decisions of the Project Representative.

- 13.1** The Project Representative shall, within a reasonable time, make decisions on all claims of the Town or the Contractor and on all other matters relating to the

execution and progress of the structural work or the interpretation of the Contract Documents.

13.2 The Project Representative's decision, in matters relating to the project, shall be final, if within the terms of the Contract Documents.

13.3 If, however, the Project Representative fails to render a decision within ten (10) calendar days after the parties have presented their evidence, either party may then avail itself of the remedies provided in this Contract or available to it by law. If the Project Representative renders a decision after such remedies have commenced, such decision may be entered as evidence but shall not disturb or interrupt such proceedings except where such decision is acceptable to the parties concerned.

14. Use of Premises by the Contractor.

14.1 The Contractor shall confine its apparatus, the storage of materials and the operations of its workmen to limits indicated by law, by-laws, permits or directions of the Town and shall not unreasonably encumber the premises with its materials.

14.2 The Contractor shall not load or permit any part of the structure to be loaded with a weight that will endanger its safety.

15. Maintenance of Premises.

The Contractor shall, at all times, keep the premises free from accumulation of waste materials or rubbish and debris caused by its employees or work, and at the completion of the work, it shall remove all its rubbish from and about the work site and all its tools, scaffolding and surplus materials and shall leave its work "broom-clean", or its equivalent, unless more exactly specified. In case of dispute, the Town may remove the rubbish and charge the cost to the several contractors, as the Town shall determine to be just in its sole discretion.

16. Right to Terminate.

In addition to any other remedies herein provided and notwithstanding any other provisions hereof to the contrary, if the Contractor should: (i) be adjudged a bankrupt; (ii) make a general assignment for the benefit of creditors; (iii) have a receiver appointed on account of its insolvency; (iv) persistently or repeatedly refuse or fail to supply enough personnel and resources to perform the contract; (v) fail to make prompt payment to subcontractors or to providers of materials or labor; (vi) persistently disregard laws and regulations or lawful directives of the Town; or (vii) be guilty of a substantial violation of any provision of the Contract, then the Town may, without prejudice, to any other right or remedy and after giving the Contractor (or any surety) seven (7) days written notice, terminate the contract and the employment of the Contractor and take possession of the

premises and any/all materials, tools and appliances thereon. The Town may finish the remainder of the work by whatever method it deems appropriate.

In such cases, the Contractor shall not be entitled to receive any further payment until the work is complete. If the unpaid amount owed to the Contractor for work already finished shall exceed the expense of completing the work, including compensation for additional architectural, managerial, legal and administrative services, such excess amount shall be paid to the Contractor. If such expenses shall exceed such unpaid balances, the Contractor shall pay the difference to the Town.

The Contractor shall not be relieved of liability to the Town by virtue of any termination of this Contract, and any claim for damages against the Contractor relating to the Contractor's performance under this contract shall survive any termination hereunder.

Notwithstanding any other provision of this Contract, the Town reserves the right, at any time, in its sole discretion to suspend or terminate this Contract, in whole or in part, for its convenience upon seven (7) days written notice to the Contractor. The Town shall incur no liability by reason of such termination except for the obligation to pay compensation for all work performed by the Contractor and accepted by the Town to the termination date.

17. Progress Payments.

17.1 The Contractor shall submit to the Town an itemized application for payment, supported to the extent required by the Town by invoices and/or other vouchers, showing payments for materials and labor, payments to subcontractors and such other evidence of the Contractor's right to payment.

17.2 The Contractor shall, before the first application, submit to the Town a schedule of values of the various parts of the work, including quantities aggregating the total sum of the Contract, divided so as to facilitate payments to subcontractors, made out in such form as the Town and the Contractor may agree upon, and, if required, supported by such evidence as to its correctness. This schedule, when approved by the Town, shall be used as a basis for payment, unless it is found to be in error. If applying for payments, the Contractor shall submit a statement based upon this schedule.

18. Withholding of Payments.

18.1 The Town may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any payment to such extent as may be necessary in its reasonable opinion to protect the public interests of the Town of Hudson from loss on account of:

(i.) Defective work not remedied.

- (ii.) Claims filed or reasonable evidence indicating probable filing of claims.
- (iii.) Failure of the Contractor to make payments properly to Subcontractors or for material or labor.
- (iv.) A reasonable doubt that the Contract can be completed for the balance then unpaid.
- (v.) Damage to another contractor.
- (vi.) Delays resulting in liquidated damages.

18.2 Withholding of payments shall be in strict compliance with statutory requirements.

19. Claims by Contractor and Liability of Town.

All claims by the Contractor against the Town shall, unless otherwise provided by law, be initiated by a written claim submitted to the Town no later than seven (7) calendar days after the event or the first appearance of the circumstances causing the claim. The claim shall set forth in detail all known facts and circumstances supporting the claim. The Contractor shall continue its performance under this contract regardless of the submission or existence of any claims.

The limit of liability of the Town under this Agreement is limited to the compensation provided herein for work actually performed, and shall in no event include liability for delays or for incidental, special or consequential damages or lost profits or for damages or loss from causes beyond the Town's reasonable control.

20. Damages for Delay.

If the Contractor is delayed at any time in performing or furnishing the work by any act or neglect of the Town or its consultants, including, without limiting the generality of the foregoing, delay caused by failure of the site being available for work or ready to accept the Contractor's work or the failure of the Town or its consultants to furnish any work, materials, information, documentation or decisions, the Contractor shall have no claim to any damages, costs, or expenses of any kind of nature, for any suspension, delay, interruption, hindrance or acceleration of its work. Furthermore, to the extent Contractor is delayed, it shall be entitled to an extension of time to its period of contract performance upon authorization by the Town and the Contractor will have no claim for damages, cause, or expenses of any kind or nature for any suspension, delay, interruption, or acceleration of its work in the event that the Town grants such an extension of time to the Contractor's performance.

21. Liquidated Damages.

If Contractor shall neglect, fail, or refuse to complete the work within the time specified or any proper extension thereof granted by the Town, then the Contractor agrees, as part consideration for the awarding of this Contract, to pay One Thousand (\$1,000.00) Dollars, per day, to the Town, not as a penalty, but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the Contract for completing the Work. The amount is fixed and agreed upon by and between the Town and the Contractor to be a reasonable approximation of the amount of damages which the Town would sustain, because of the impracticability and difficulty of fixing and ascertaining the actual damages the Town would, in such event, sustain.

22. Contractor's Mutual Responsibility.

Should the Contractor cause damage to any separate subcontractor on the work, the Contractor agrees, upon due notice, to settle with such Subcontractor by agreement, or by recourse to remedies provided by law or by the provisions of the contract. If such separate Subcontractor sues the Town on account of any damage alleged to have been sustained, the Town shall notify the Contractor, who shall defend such proceedings at the Contractor's expense and, if any judgment against the Town arises therefrom, the Contractor shall pay or satisfy it and pay all costs incurred by the Town including attorney's fees and related costs of litigation.

23. Separate Contracts.

- 23.1.** The Town reserves the right to let other Contracts in connection with this work under similar General Conditions. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate its work with theirs.
- 23.2.** If any part of the Contractor's work depends, for proper execution or results, upon the work of any other contractor, the Contractor shall inspect and promptly report to the Town any defects in such work that render it unsuitable for such proper execution and results. Failure of the Contractor to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of its work except as to defects which may develop in the other contractor's work after the execution of its work.
- 23.3.** To insure the proper execution of its subsequent work, the Contractor shall measure work already in place and shall at once report to the Town any discrepancy between the executed work and the Drawings.

24. Subcontracts.

- 24.1.** All Subcontracts shall be awarded in conformity with the requirements of M.G.L. c. 149, Sec. 44A-L.
- 24.2.** The Contractor agrees that it is as fully responsible to the Town for the acts and omissions of its Subcontractors and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.
- 24.3.** Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor and the Town.

25. Contractor-Subcontractor Relations.

The Contractor agrees to bind every Subcontractor and every Subcontractor agrees to be bound by the terms of the Contract, the General Conditions of the Contract, the Supplementary General Conditions, the Drawings and Specifications, as far as applicable to its work, including the provisions of the General M.G.L. c.149, Section 44A, *et seq.*

26. The Contractor's Insurance.

Notwithstanding any other provisions of this Contract to the Contrary and in addition to any requirements set forth in the Contract, the Contractor shall provide and maintain the following insurance:

- 26.1.** The Contractor shall purchase and maintain such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by itself or by any Subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.
- 26.2.** *Liability Insurance Requirements.* In addition to the liability insurance requirements set forth in the Contract, the liability insurance shall include all major divisions and shall be on a comprehensive general basis including Premises and Operations, Owners and Contractor's Protective, Products and Completed Operations, and Owned, Non-owned and Hired Motor Vehicles. All such insurance shall be written for not less than any limits of liability required by law, unless otherwise provided in the contract documents.

The Contractor's insurance shall include:

- a. Excess Liability (Umbrella) Insurance, \$3,000,000

b. Excess Liability (Umbrella) Insurance (Subcontractors), \$1,000,000 or one and one-half (1.5) times the value of the subcontract, whichever is higher.

26.3. The above insurance policies shall also be subject to the following requirements:

26.3.1. Insurance coverage for the Contractor's Comprehensive General Liability, as hereinafter specified under Paragraph entitled "Protective Liability Insurance" shall be written by one and the same insurance company to avoid the expense of duplicate and/or overlapping coverage and to facilitate and expedite the settlement of claims.

26.3.2. All premium costs shall be included in the Contractor's bid.

27. Protective Liability Insurance.

27.1. The Contractor shall purchase and maintain such insurance as described in the preceding paragraph as will protect the Town from claims which may arise from operations under the Contract, including operations performed for the named insured by independent contractors and general inspection thereof by the named insured.

27.2. The Contractor shall also purchase and maintain such insurance as will protect the Town against Automobile Non-Ownership Liability in connection with the Contractor's operations under the Contract, whether such operations be by itself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

27.3. The limits of liability for coverage required under the Contract shall be as specified within the Contract documents.

27.4 The Town shall be named as an additional insured on the above referenced liability Policies, and the Contractor's insurance shall be the primary coverage. The cost of such insurance, including required endorsements and amendments, shall be the sole responsibility of the Contractor.

28. Liens.

Neither the Final Payment nor any part of the retained percentage shall become due until the Contractor, if required, shall deliver to the Town a complete release of all liens arising out of the Contract, or receipts, in full, in lieu thereof and, if required in either case, an affidavit that, as far as it has personal knowledge or information, the releases and receipts include all the labor and material for which a lien could be filed. The Contractor

shall comply with all statutory provisions M.G.L. c.254 and c. 249, as amended (as a minimum requirement).

29. Guarantees and Warrantees.

- 29.1.** The Contractor guarantees and warrants to the Town that all labor furnished under this Contract will be fully competent to perform all the tasks undertaken for a period of two (2) years from date of substantial completion, that the product of such labor will yield only first-class results according to the highest standards of the trade, that materials and equipment furnished will be of good quality and new unless otherwise permitted by this Contract, and that the Work will be of good quality, free from faults and defects and in strict conformance with this Contract. All Work not conforming to these requirements may be considered defective. Construction shall pay any damages, expenses and fees including attorneys and engineers associated with the correction of the work.
- 29.2.** If at any time any part of the work so constructed, under the terms of this contract, shall, in the opinion of the Board of Selectmen or Designee require repairing due to defective workmanship or materials furnished by the Contractor, he may notify the Contractor in writing to make the required repairs. If the Contractor shall neglect to start such repairs within ten days of the date of giving it notice thereof and to complete the same to the satisfaction of the Board of Selectmen or Designee with reasonable dispatch, then the latter may employ other persons to make such repairs. The Town shall charge the expense thereof to the Contractor and may use any moneys still retained to pay for the same, and if such sum is insufficient, the Contractor shall be obligated to pay the balance thereof.
- 29.3.** All guarantees and warranties required in the various Sections of the Specifications which originate with a Subcontractor or Manufacturer must be delivered to the Town before final payment to the Contractor may be made for the amount of that subtrade or for the phase of work to which the guarantee or warranty relates. The failure to deliver a required guarantee or warranty shall be held to constitute a failure of the Subcontractor to fully complete his work in accordance with the Contract Documents. The Contractor's obligation to correct work is in addition to, and not in substitution of, such guarantees or warranties as may be required in the various Sections of the Specifications.

Space intentionally left blank. See next page for signatories.

This Supplement "C" to the attached Contract is intended to take effect as a sealed instrument. Witness our hands and seals hereto:

Dated: _____

The Town of Hudson by:

Board of Selectmen or its Designee
(Executive Assistant),
with no personal liability, hereunto duly authorized

Department/Division Head,
with no personal liability, hereunto duly authorized

Town Accountant
Certified as to Appropriation,
with no personal liability, hereunto duly authorized

Town Counsel
Approved as to Legal Form

The Contractor by: _____
(Authority or Agency)

APPENDIX

Exhibit D: Soils Report

HANCOCK ASSOCIATES

Surveyors | Engineers | Scientists

November 11, 2024

Hudson Conservation Commission
78 Main Street
Hudson, MA 01749
Ms. Heidi Graf - Chair

Subject: Hudson Dog Park at Sauta Fields (539 Main Street, Parcel ID 45-1)
Drainage Study of Proposed Development

Chair Graf & Members of the Commission,

On behalf of our client Kyle Zick Landscape Architecture as well as the Hudson Division of Recreation, Hancock Associates conducted a drainage study for a proposed dog park at 539 Main Street in Hudson. The site is located at the southwest corner of Main Street and Tom Williams Senior Drive (TWS Drive).

Existing Site

The existing site is cleared land used for parking and storage (via containers), and undeveloped woods. There is an existing one-story concrete building immediately southwest of the cleared land. There is an existing perennial stream and wetlands southwest of the site that feeds into Fort Meadow Brook near the crossing at Main Street. There is a shallow slope from the northeast to the southwest, before dropping off quickly to the stream/wetland. The cleared area is at elevation 196 to 199, and the wetland edge is at elevation 185±.

Proposed Development

The Town of Hudson Division of Recreation is proposing a dog park approximately one-half acre in size. The development is located within the 200-ft riverfront area, but outside the 100-ft riverfront area and outside the 100-ft wetland buffer zone.

The dog park includes approximately 1,000 square feet of paved parking areas along TWS Drive. The development proposes to capture stormwater runoff from the paved areas at a low point at the southern corner, where there is a proposed rain garden and drywell for treatment and infiltration. The remainder of the development captures stormwater in local depressions and in a 6'-wide stone infiltration trench along the southwestern side of the park.

Per the *MassDEP Stormwater Standards, Volume 1, Chapter 1 - Applicability*, "The Stormwater Management Standards shall apply to the maximum extent practicable to the following: (6) Footpaths, bikepaths and other paths for pedestrian and/or nonmotorized vehicle access." The majority of the dog park is comprised of pedestrian pathways around graded wood-chipped areas and undisturbed land. ***This drainage analysis only focuses on the proposed paved areas near TWS Drive.***

Soil / Groundwater Research & Results

The Natural Resources Conservation Service (NRCS) Web Soil Survey website delineates soil and describes existing soils in the U.S. The project site is located within "Deerfield" loamy fine sand (Map Unit 256A). Deerfield is described as a moderately well-drained sandy outwash, with a parent material of sand. Its Hydrologic Soil Group designation is "A", which equates to a comparatively high infiltration rate. Additionally, the soil map designations geographically upgradient of the site are also classified as well-drained sands.

On October 21, 2024, Hancock Associates observed a deep soil excavation at the location for a proposed rain garden. The soil layers, soil textures, and groundwater (if present) were recorded. The parent material was found to be various strata of fine, medium and/or coarse sands, with occasional gravel and cobbles. No groundwater was observed. No clear redoximorphic action (mottling) level was observed. The results of the deep soil observation agree with the NRCS soil designation for the area.

Given the grade differences between the nearby stream (elevation 185±) and the proposed development as well as the well-drained soils in the test pit, it is concluded that the Estimated Seasonal High Groundwater (ESHGW) can be set at the bottom of the test pit, or a depth of approximately 7.5 feet. The existing grade is 197.0±; therefore, the ESHGW is 189.5±.

Proposed Rain Garden and Drywell

The developer is proposing a bioretention cell (a.k.a. rain garden) and drywell immediately southwest of the proposed paved parking areas.

MassDEP Standards

Standard 1 – No New Untreated Discharges:

The existing area in question sheet flows southwest along TWS Drive in front of the existing concrete building and continues southwest the roadway gutter line. Runoff from the proposed paved areas will be treated by the proposed rain garden before overflow to the existing outfall. Therefore, no new untreated discharge is created.

Standard 2 – Peak Rate Attenuation

A hydrologic analysis was prepared for the proposed pave areas using the water modeling program HydroCAD. The 24-hour storm event at 2-, 10-, 25-, and 100-year frequencies were analyzed. Rainfall depths were calculated per NOAA Atlas 14 “Point Precipitation Frequency Estimates”. Rainfall Curve Numbers were chosen based on the existing surface materials (e.g. impervious pavement, impervious gravel, grass, or woods).

Results show no increase in peak flow for all storm events and negligible increases in stormwater volume runoff. Therefore, no peak rate attenuation is required.

Please refer to the supporting plan and documents for more information.

Standard 3 – Groundwater Recharge:

Hydrologic Soil Group A → 0.6 inches of runoff

Impervious area = 1,000 sf

Required recharge volume = $1000 \times 0.6/12 = 50$ cubic feet (see *Standard 4*)

Requires a minimum two-foot separation between the bottom of structure and ESHGW (189.5).

Standard 4 – Water Quality:

Infiltration rate for HSG A sand = 8.27 in/hr > 2.4 in/hr → 1.0 inches of runoff

Impervious area = 1,000 sf

Required recharge volume = $1000 \times 1.0/12 = 83$ cubic feet

Note: A drywell with a minimum storage capacity of 83 cubic feet will satisfy volume requirements for Standards 3 and 4.

A rain garden receives 90% TSS removal with adequate pretreatment (i.e. street sweeping).

Standard 5 – Land Uses with Higher Potential Pollutant Loads:

Does not apply.

Standard 6 – Critical Areas:

Does not apply.

Standard 7 – Redevelopment Project:

Does not apply.

Standard 8 – Construction Period Pollution Prevention:

Please refer to previously submitted materials for erosion & sediment control methods, best management practices, and phasing if applicable.

Standard 9 – Operation and Maintenance Plan:

The owner and operator of the dog park shall be the party responsible for the operation and maintenance of the rain garden and drywell. Said structures shall be inspected and

maintained in accordance with the relevant sections of *Volume 2, Chapter 2* of the *MassDEP Stormwater Standards*.

Standard 10 – Prohibition of Illicit Discharges:

No illicit discharges currently exist and no future illicit discharges will be allowed including wastewater discharges and discharges of stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, soil, or grease.

Please do not hesitate to contact our office should you have any questions or concerns.

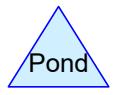
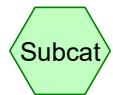
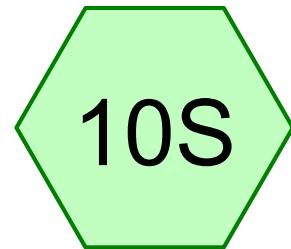
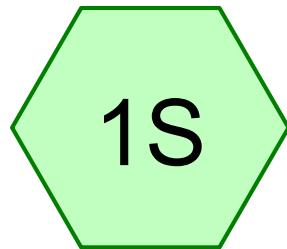
Regards,
Hancock Associates



Robert M. DiBenedetto, PE
Project Engineer

PRE

POST



Routing Diagram for 28027hydrocad

Prepared by Hancock Associates, Printed 2024-11-11
HydroCAD® 10.20-3h s/n 00711 © 2024 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S:

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 358 cf, Depth= 1.68"

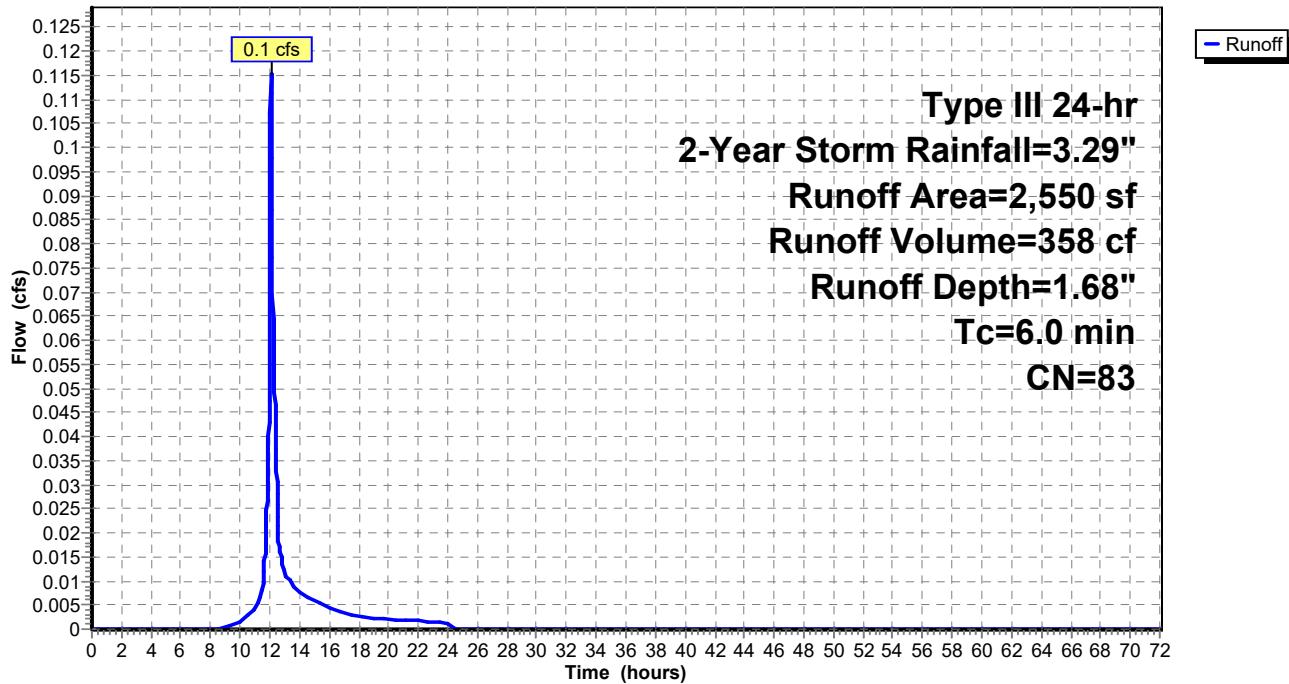
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Storm Rainfall=3.29"

Area (sf)	CN	Description
2,030	96	Impervious (gravel)
520	30	Woods, Good, HSG A
2,550	83	Weighted Average
2,550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S:

Hydrograph



Summary for Subcatchment 10S:

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 407 cf, Depth= 1.91"

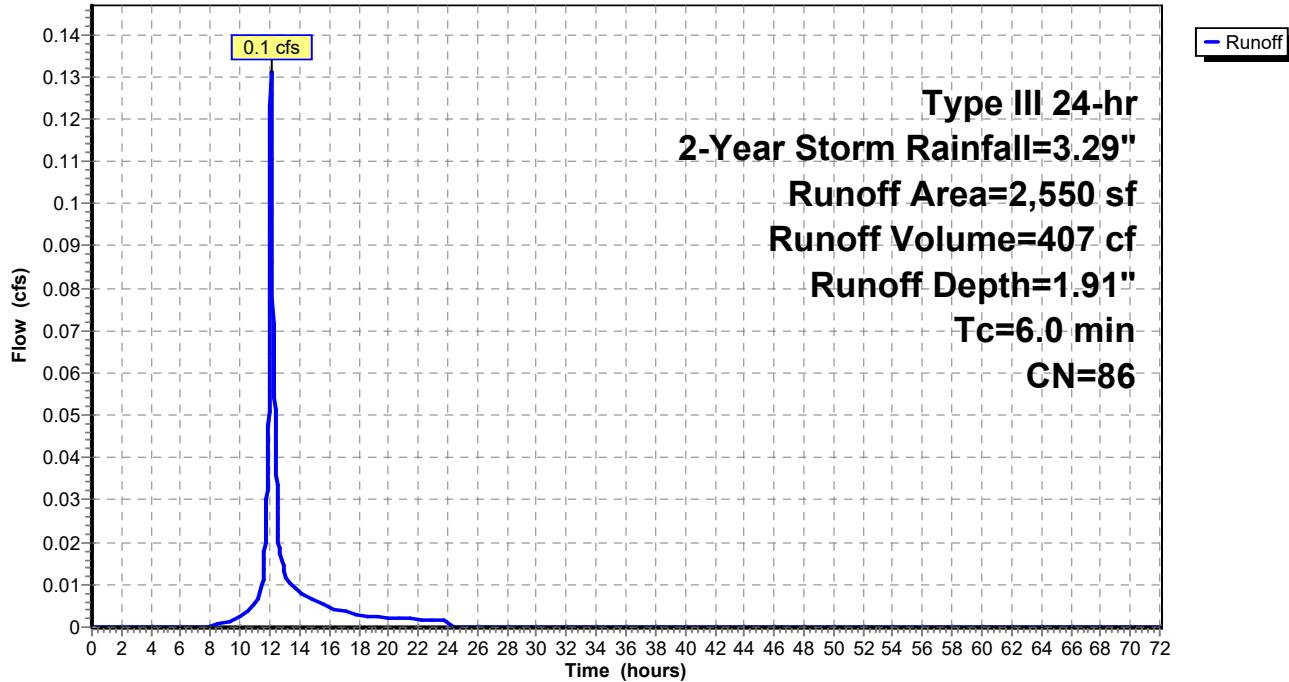
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
 Type III 24-hr 2-Year Storm Rainfall=3.29"

Area (sf)	CN	Description
* 2,115	96	Impervious (gravel)
435	39	>75% Grass cover, Good, HSG A
2,550	86	Weighted Average
2,550		100.00% Pervious Area

Tc	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	Direct Entry,				

Subcatchment 10S:

Hydrograph



Summary for Subcatchment 1S:

Runoff = 0.2 cfs @ 12.09 hrs, Volume= 690 cf, Depth= 3.25"

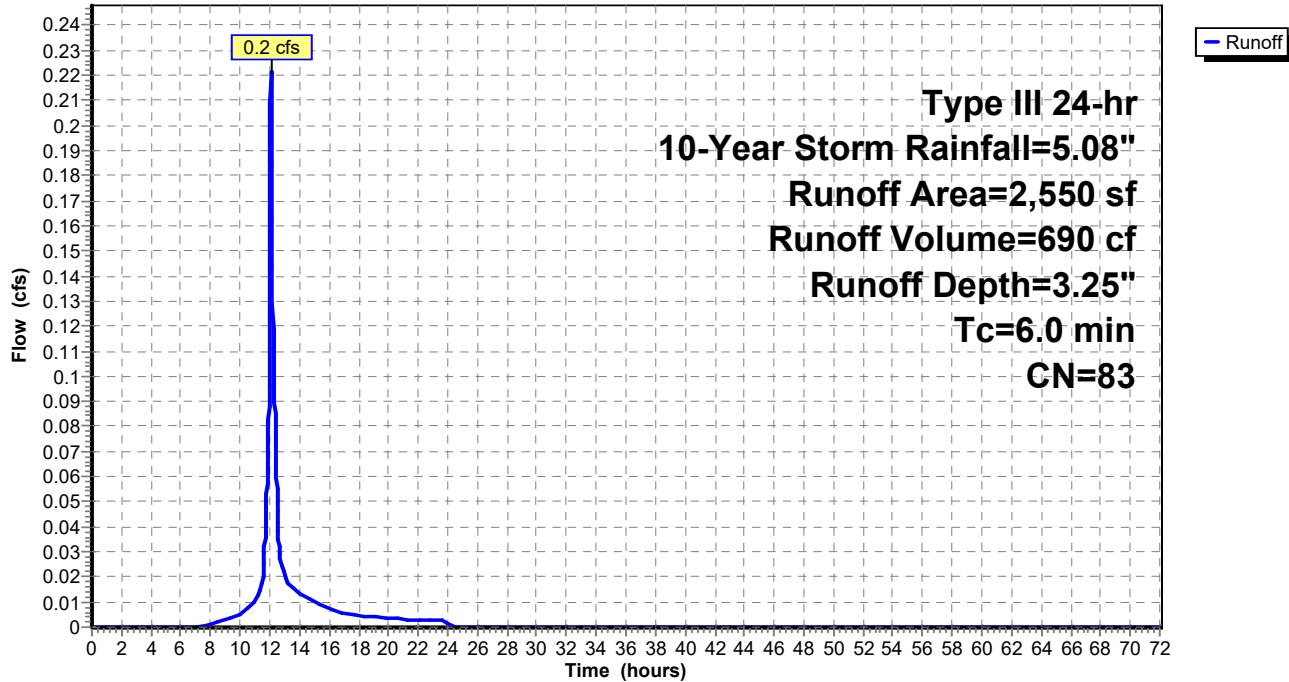
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Storm Rainfall=5.08"

Area (sf)	CN	Description
*		
2,030	96	Impervious (gravel)
520	30	Woods, Good, HSG A
2,550	83	Weighted Average
2,550		100.00% Pervious Area

Tc	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	Direct Entry,				

Subcatchment 1S:

Hydrograph



Summary for Subcatchment 10S:

Runoff = 0.2 cfs @ 12.09 hrs, Volume= 753 cf, Depth= 3.54"

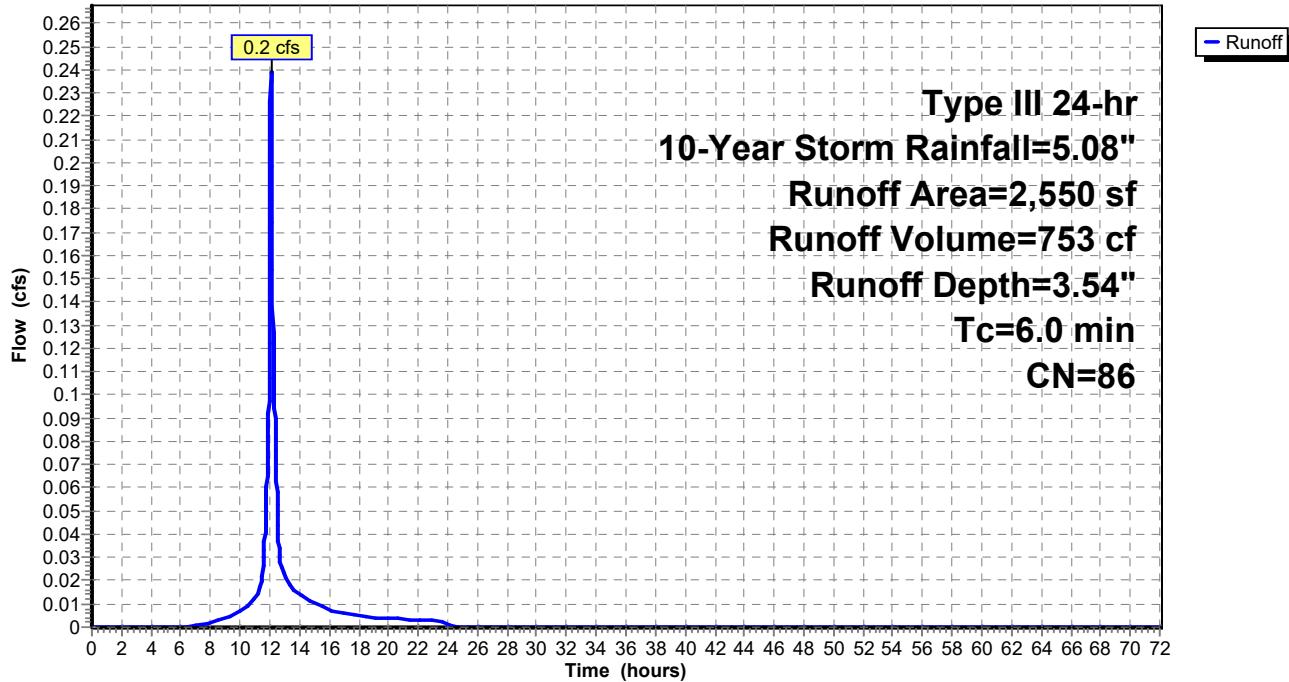
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Storm Rainfall=5.08"

Area (sf)	CN	Description
* 2,115	96	Impervious (gravel)
435	39	>75% Grass cover, Good, HSG A
2,550	86	Weighted Average
2,550		100.00% Pervious Area

Tc	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	Direct Entry,				

Subcatchment 10S:

Hydrograph



Summary for Subcatchment 1S:

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 909 cf, Depth= 4.28"

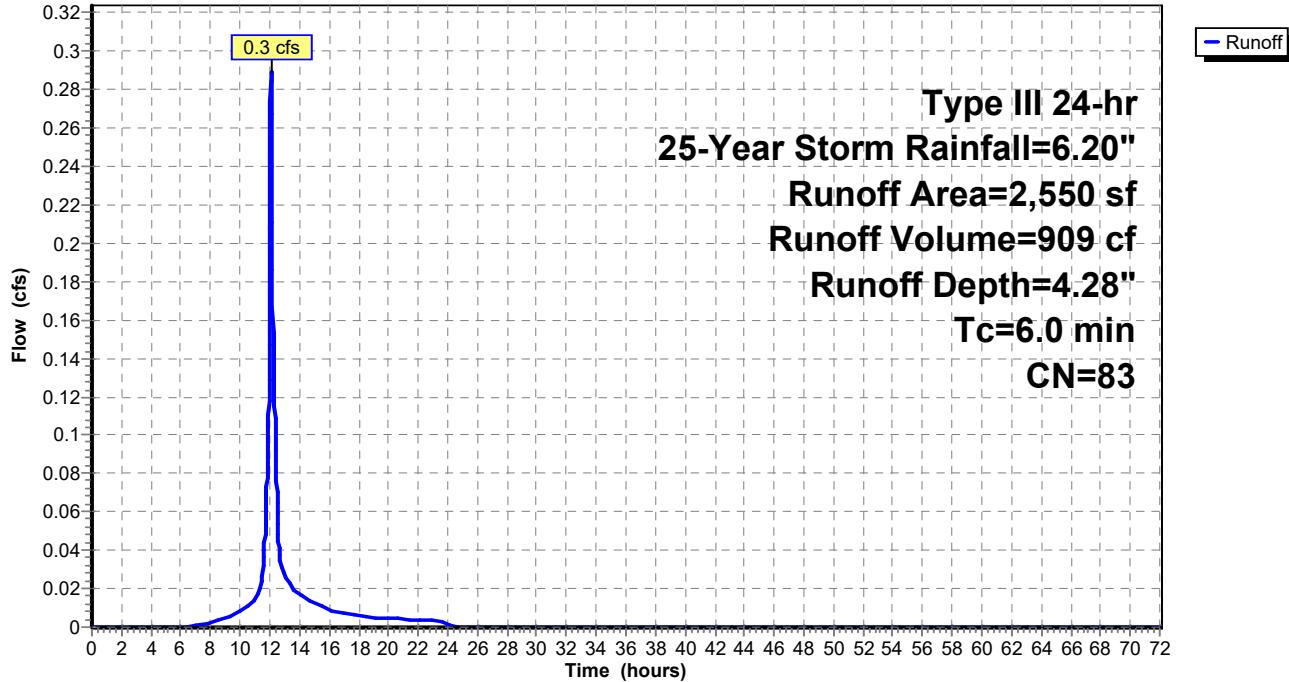
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Storm Rainfall=6.20"

Area (sf)	CN	Description
*		
2,030	96	Impervious (gravel)
520	30	Woods, Good, HSG A
2,550	83	Weighted Average
2,550		100.00% Pervious Area

Tc	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0				Direct Entry,

Subcatchment 1S:

Hydrograph



Summary for Subcatchment 10S:

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 977 cf, Depth= 4.60"

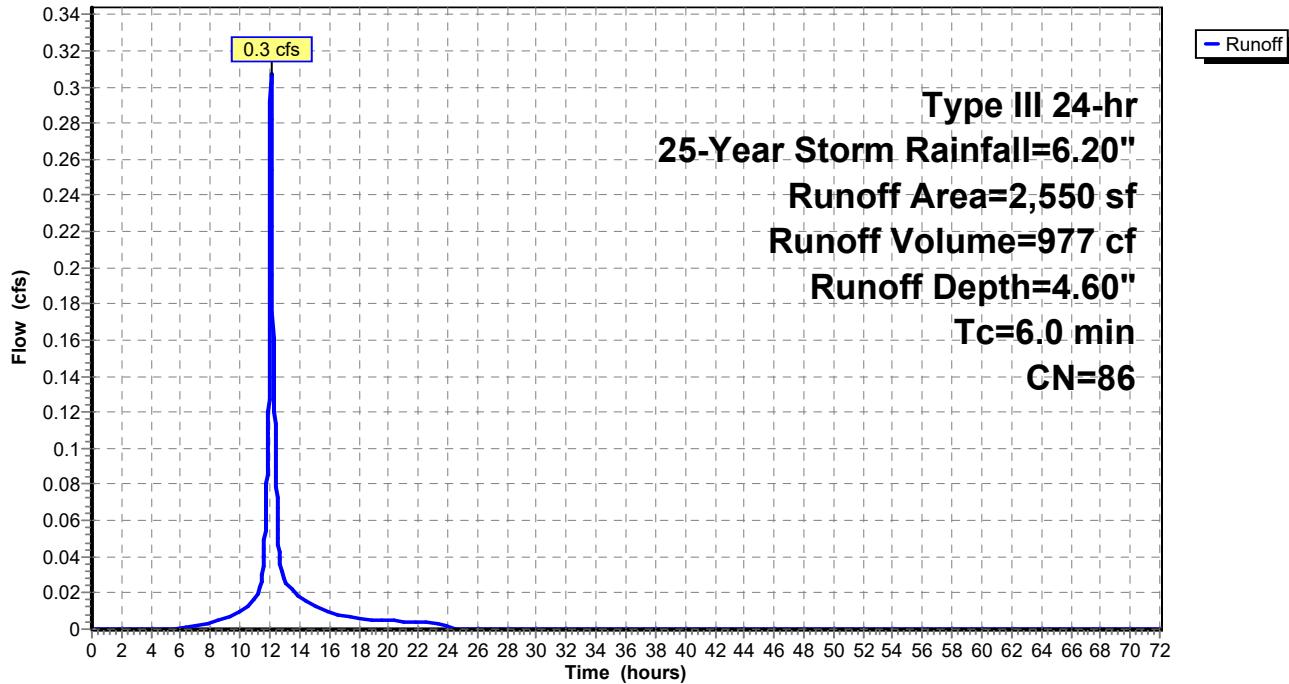
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Storm Rainfall=6.20"

Area (sf)	CN	Description
* 2,115	96	Impervious (gravel)
435	39	>75% Grass cover, Good, HSG A
2,550	86	Weighted Average
2,550		100.00% Pervious Area

Tc	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	Direct Entry,				

Subcatchment 10S:

Hydrograph



Summary for Subcatchment 1S:

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 1,254 cf, Depth= 5.90"

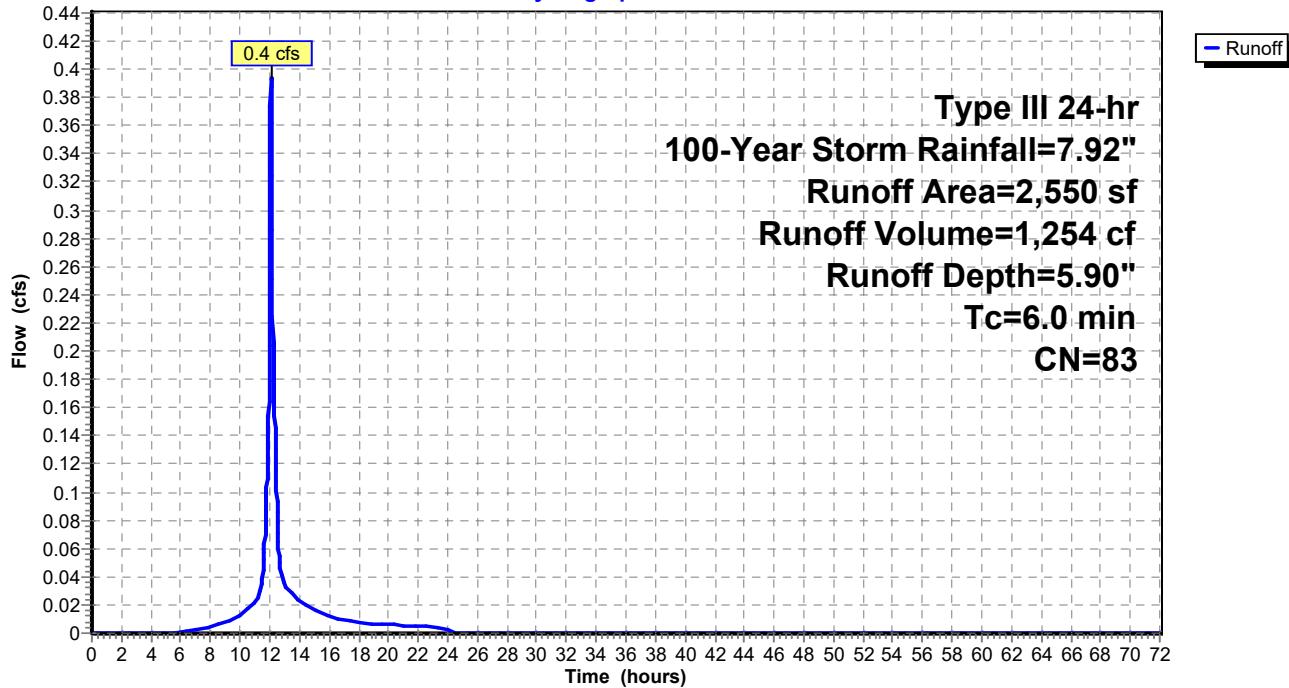
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
 Type III 24-hr 100-Year Storm Rainfall=7.92"

Area (sf)	CN	Description
*		
2,030	96	Impervious (gravel)
520	30	Woods, Good, HSG A
2,550	83	Weighted Average
2,550		100.00% Pervious Area

Tc	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
				6.0	Direct Entry,

Subcatchment 1S:

Hydrograph



Summary for Subcatchment 10S:

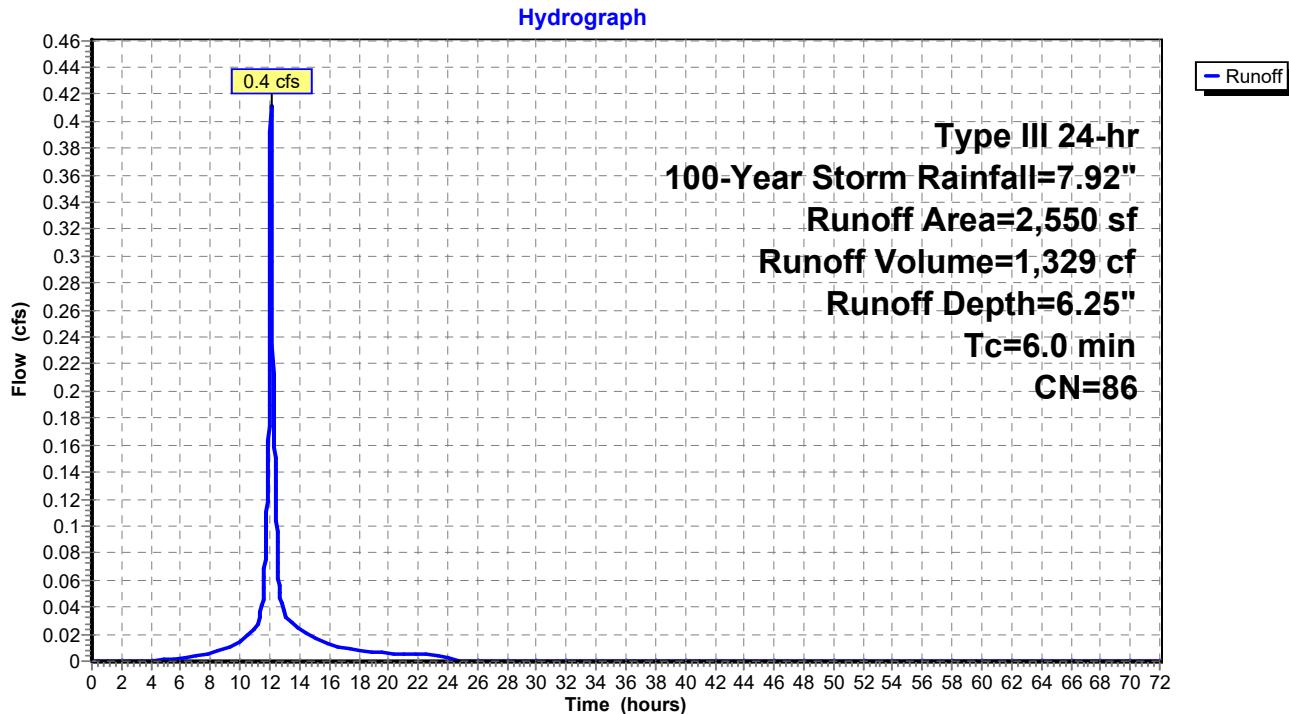
Runoff = 0.4 cfs @ 12.08 hrs, Volume= 1,329 cf, Depth= 6.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Storm Rainfall=7.92"

Area (sf)	CN	Description
* 2,115	96	Impervious (gravel)
435	39	>75% Grass cover, Good, HSG A
2,550	86	Weighted Average
2,550		100.00% Pervious Area

Tc	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	Direct Entry,				

Subcatchment 10S:




NOAA Atlas 14, Volume 10, Version 3
Location name: Hudson, Massachusetts, USA*
Latitude: 42.389°, Longitude: -71.5166°
Elevation: 201 ft**

* source: ESRI Maps

** source: USGS


POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerials](#)
PF tabular

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.330 (0.253-0.423)	0.396 (0.302-0.507)	0.503 (0.383-0.646)	0.591 (0.448-0.764)	0.712 (0.524-0.961)	0.803 (0.581-1.11)	0.900 (0.635-1.29)	1.01 (0.676-1.47)	1.17 (0.756-1.76)	1.30 (0.823-2.00)
10-min	0.468 (0.358-0.599)	0.560 (0.428-0.718)	0.711 (0.542-0.914)	0.836 (0.634-1.08)	1.01 (0.743-1.36)	1.14 (0.823-1.57)	1.27 (0.899-1.82)	1.43 (0.958-2.08)	1.66 (1.07-2.50)	1.84 (1.17-2.83)
15-min	0.551 (0.421-0.705)	0.659 (0.503-0.844)	0.836 (0.637-1.07)	0.984 (0.745-1.27)	1.19 (0.874-1.60)	1.34 (0.968-1.84)	1.50 (1.06-2.14)	1.68 (1.13-2.45)	1.95 (1.26-2.94)	2.17 (1.37-3.33)
30-min	0.749 (0.572-0.958)	0.896 (0.685-1.15)	1.14 (0.867-1.46)	1.34 (1.01-1.73)	1.62 (1.19-2.18)	1.82 (1.32-2.51)	2.04 (1.44-2.92)	2.29 (1.53-3.34)	2.65 (1.71-4.00)	2.95 (1.87-4.54)
60-min	0.946 (0.723-1.21)	1.13 (0.866-1.45)	1.44 (1.10-1.85)	1.70 (1.28-2.19)	2.04 (1.50-2.76)	2.31 (1.67-3.18)	2.58 (1.82-3.69)	2.90 (1.94-4.23)	3.36 (2.17-5.06)	3.73 (2.36-5.74)
2-hr	1.20 (0.925-1.52)	1.45 (1.12-1.84)	1.87 (1.43-2.38)	2.21 (1.69-2.83)	2.69 (2.00-3.60)	3.04 (2.22-4.17)	3.42 (2.44-4.88)	3.87 (2.60-5.60)	4.55 (2.95-6.81)	5.13 (3.26-7.83)
3-hr	1.38 (1.07-1.74)	1.68 (1.30-2.12)	2.17 (1.67-2.75)	2.58 (1.98-3.28)	3.13 (2.34-4.19)	3.55 (2.60-4.85)	4.00 (2.87-5.70)	4.54 (3.06-6.54)	5.37 (3.49-8.00)	6.09 (3.87-9.23)
6-hr	1.77 (1.38-2.22)	2.16 (1.68-2.70)	2.79 (2.17-3.50)	3.31 (2.56-4.18)	4.03 (3.04-5.34)	4.56 (3.38-6.19)	5.14 (3.72-7.27)	5.85 (3.96-8.34)	6.93 (4.52-10.2)	7.86 (5.02-11.8)
12-hr	2.25 (1.78-2.80)	2.74 (2.16-3.40)	3.53 (2.77-4.39)	4.18 (3.26-5.24)	5.08 (3.85-6.67)	5.75 (4.28-7.72)	6.48 (4.70-9.05)	7.35 (5.00-10.4)	8.67 (5.68-12.7)	9.80 (6.27-14.6)
24-hr	2.69 (2.14-3.31)	3.29 (2.62-4.05)	4.27 (3.38-5.27)	5.08 (4.00-6.31)	6.20 (4.73-8.07)	7.02 (5.26-9.35)	7.92 (5.79-11.0)	9.01 (6.15-12.6)	10.7 (7.01-15.4)	12.1 (7.77-17.8)
2-day	3.03 (2.43-3.69)	3.75 (3.00-4.57)	4.93 (3.94-6.03)	5.91 (4.69-7.27)	7.26 (5.60-9.39)	8.25 (6.24-10.9)	9.34 (6.90-12.9)	10.7 (7.34-14.9)	12.8 (8.46-18.4)	14.7 (9.45-21.4)
3-day	3.29 (2.65-3.99)	4.07 (3.28-4.94)	5.34 (4.28-6.50)	6.39 (5.10-7.82)	7.84 (6.07-10.1)	8.91 (6.77-11.7)	10.1 (7.47-13.9)	11.5 (7.94-15.9)	13.8 (9.14-19.7)	15.8 (10.2-23.0)
4-day	3.54 (2.87-4.28)	4.35 (3.52-5.26)	5.67 (4.57-6.87)	6.76 (5.41-8.24)	8.26 (6.42-10.6)	9.37 (7.14-12.3)	10.6 (7.86-14.5)	12.1 (8.34-16.6)	14.5 (9.56-20.5)	16.5 (10.7-23.9)
7-day	4.26 (3.47-5.11)	5.11 (4.16-6.13)	6.50 (5.28-7.83)	7.65 (6.18-9.27)	9.24 (7.21-11.7)	10.4 (7.96-13.5)	11.7 (8.68-15.8)	13.2 (9.17-18.0)	15.6 (10.4-22.0)	17.6 (11.4-25.3)
10-day	4.94 (4.05-5.90)	5.82 (4.76-6.95)	7.26 (5.92-8.70)	8.45 (6.84-10.2)	10.1 (7.89-12.7)	11.3 (8.65-14.5)	12.6 (9.36-16.8)	14.2 (9.84-19.2)	16.5 (11.0-23.1)	18.4 (11.9-26.3)
20-day	6.97 (5.76-8.24)	7.91 (6.54-9.37)	9.46 (7.78-11.2)	10.7 (8.78-12.8)	12.5 (9.84-15.5)	13.8 (10.6-17.5)	15.2 (11.3-19.9)	16.7 (11.7-22.4)	18.8 (12.6-26.0)	20.4 (13.3-28.9)
30-day	8.65 (7.19-10.2)	9.64 (8.01-11.4)	11.3 (9.32-13.3)	12.6 (10.4-15.0)	14.5 (11.4-17.8)	15.9 (12.2-19.9)	17.3 (12.8-22.3)	18.8 (13.2-25.0)	20.7 (13.9-28.5)	22.1 (14.4-31.1)
45-day	10.7 (8.98-12.6)	11.8 (9.84-13.8)	13.5 (11.2-15.9)	14.9 (12.3-17.6)	16.9 (13.4-20.6)	18.4 (14.2-22.8)	19.9 (14.7-25.4)	21.3 (15.0-28.2)	23.1 (15.6-31.6)	24.3 (15.9-34.0)
60-day	12.5 (10.5-14.5)	13.6 (11.4-15.8)	15.4 (12.8-18.0)	16.9 (14.0-19.8)	18.9 (15.0-22.9)	20.5 (15.9-25.3)	22.1 (16.3-27.9)	23.5 (16.6-30.9)	25.1 (17.0-34.2)	26.2 (17.1-36.5)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)
PF graphical

APPENDIX

Exhibit E: Prevailing Wage



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

Prevailing Wage Rates

MAURA HEALEY
Governor

KIM DRISCOLL
Lt. Governor

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

LAUREN JONES
Secretary

MICHAEL FLANAGAN
Director

Awarding Authority: Town of Hudson

Contract Number:

City/Town: HUDSON

Description of Work: Construction of a dog park.

Job Location: 539 Main Street, Hudson MA 01749

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- 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 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, the 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. The updated wage schedule must be provided to all contractors, including general and sub-contractors, working on the construction project.
- This annual update requirement is generally not applicable to 27F “rental of equipment” contracts. For such contracts, the prevailing wage rates issued by DLS shall remain in effect for the duration of the contract term. However, if the prevailing wage rate sheet issued does not contain wage rates for each year covered by the contract term, the Awarding Authority must request updated rate sheets from DLS and provide them to the contractor to ensure the correct rates are being paid throughout the duration of the contract. Additionally, if an Awarding Authority exercises an option to renew or extend the contract term, they must request updated rate sheets from DLS and provide them to the contractor.
- 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 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 a sub-contractor.
- Apprentices working on the project are required to be registered with the Massachusetts Division of Apprentice Standards (DAS). Apprentices must keep their apprentice identification card on their persons 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 DAS regardless of whether they are registered with another federal, state, local, or private agency must be paid the journeyworker's rate.**
- Every contractor or subcontractor working on the construction project must 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. For a sample payroll reporting form go to <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.
- Contractors must obtain the wage schedules from awarding authorities. 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.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may file a complaint with the Fair Labor Division of the office of the Attorney General at (617) 727-3465.

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>	01/01/2025	\$39.95	\$15.57	\$20.17	\$0.00	\$75.69
	06/01/2025	\$40.95	\$15.57	\$20.17	\$0.00	\$76.69
	12/01/2025	\$40.95	\$15.57	\$21.78	\$0.00	\$78.30
	01/01/2026	\$40.95	\$16.17	\$21.78	\$0.00	\$78.90
	06/01/2026	\$41.95	\$16.17	\$21.78	\$0.00	\$79.90
	12/01/2026	\$41.95	\$16.17	\$23.52	\$0.00	\$81.64
	01/01/2027	\$41.95	\$16.77	\$23.52	\$0.00	\$82.24
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.02	\$15.57	\$20.17	\$0.00	\$75.76
	06/01/2025	\$41.02	\$15.57	\$20.17	\$0.00	\$76.76
	12/01/2025	\$41.02	\$15.57	\$21.78	\$0.00	\$78.37
	01/01/2026	\$41.02	\$16.17	\$21.78	\$0.00	\$78.97
	06/01/2026	\$42.02	\$16.17	\$21.78	\$0.00	\$79.97
	12/01/2026	\$42.02	\$16.17	\$23.52	\$0.00	\$81.71
	01/01/2027	\$42.02	\$16.77	\$23.52	\$0.00	\$82.31
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.14	\$15.57	\$20.17	\$0.00	\$75.88
	06/01/2025	\$41.14	\$15.57	\$20.17	\$0.00	\$76.88
	12/01/2025	\$41.14	\$15.57	\$21.78	\$0.00	\$78.49
	01/01/2026	\$41.14	\$16.17	\$21.78	\$0.00	\$79.09
	06/01/2026	\$42.14	\$16.17	\$21.78	\$0.00	\$80.09
	12/01/2026	\$42.14	\$16.17	\$23.52	\$0.00	\$81.83
	01/01/2027	\$42.14	\$16.77	\$23.52	\$0.00	\$82.43
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	01/01/2024	\$117.16	\$10.08	\$24.29	\$0.00	\$151.53
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.70	\$9.90	\$18.36	\$0.00	\$67.96
	06/01/2025	\$41.09	\$9.90	\$18.36	\$0.00	\$69.35
	12/01/2025	\$42.47	\$9.90	\$18.36	\$0.00	\$70.73
	06/01/2026	\$43.91	\$9.90	\$18.36	\$0.00	\$72.17
	12/01/2026	\$45.35	\$9.90	\$18.36	\$0.00	\$73.61
	06/01/2027	\$46.80	\$9.90	\$18.36	\$0.00	\$75.06
	12/01/2027	\$48.25	\$9.90	\$18.36	\$0.00	\$76.51
	06/01/2028	\$49.75	\$9.90	\$18.36	\$0.00	\$78.01
	12/01/2028	\$51.25	\$9.90	\$18.36	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.70	\$9.90	\$18.46	\$0.00	\$68.06
	06/01/2025	\$41.09	\$9.90	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.47	\$9.90	\$18.46	\$0.00	\$70.83
	06/01/2026	\$43.91	\$9.90	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.35	\$9.90	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	12/01/2024	\$42.80	\$14.50	\$11.05	\$0.00	\$68.35
	06/01/2025	\$43.80	\$14.50	\$11.05	\$0.00	\$69.35
	12/01/2025	\$44.80	\$14.50	\$11.05	\$0.00	\$70.35

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BLOCK PAVER, RAMMER / CURB SETTER	12/01/2024	\$39.70	\$9.90	\$18.36	\$0.00	\$67.96
<i>LABORERS - ZONE 2</i>	06/01/2025	\$41.09	\$9.90	\$18.36	\$0.00	\$69.35
	12/01/2025	\$42.47	\$9.90	\$18.36	\$0.00	\$70.73
	06/01/2026	\$43.91	\$9.90	\$18.36	\$0.00	\$72.17
	12/01/2026	\$45.35	\$9.90	\$18.36	\$0.00	\$73.61
	06/01/2027	\$46.80	\$9.90	\$18.36	\$0.00	\$75.06
	12/01/2027	\$48.25	\$9.90	\$18.36	\$0.00	\$76.51
	06/01/2028	\$49.75	\$9.90	\$18.36	\$0.00	\$78.01
	12/01/2028	\$51.25	\$9.90	\$18.36	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY)	12/01/2024	\$39.70	\$9.90	\$18.46	\$0.00	\$68.06
<i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	06/01/2025	\$41.09	\$9.90	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.47	\$9.90	\$18.46	\$0.00	\$70.83
	06/01/2026	\$43.91	\$9.90	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.35	\$9.90	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER	01/01/2024	\$48.12	\$7.07	\$20.60	\$0.00	\$75.79
<i>BOILERMAKERS LOCAL 29</i>						

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$31.28	\$7.07	\$13.22	\$0.00	\$51.57
2	65	\$31.28	\$7.07	\$13.22	\$0.00	\$51.57
3	70	\$33.68	\$7.07	\$14.23	\$0.00	\$54.98
4	75	\$36.09	\$7.07	\$15.24	\$0.00	\$58.40
5	80	\$38.50	\$7.07	\$16.25	\$0.00	\$61.82
6	85	\$40.90	\$7.07	\$17.28	\$0.00	\$65.25
7	90	\$43.31	\$7.07	\$18.28	\$0.00	\$68.66
8	95	\$45.71	\$7.07	\$19.32	\$0.00	\$72.10

Notes:

Apprentice to Journeyworker Ratio:1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	02/01/2025	\$63.66	\$11.49	\$22.90	\$0.00	\$98.05
<i>BRICKLAYERS LOCAL 3 (LOWELL)</i>	08/01/2025	\$65.81	\$11.49	\$22.90	\$0.00	\$100.20
	02/01/2026	\$67.16	\$11.49	\$22.90	\$0.00	\$101.55
	08/01/2026	\$69.36	\$11.49	\$22.90	\$0.00	\$103.75
	02/01/2027	\$70.76	\$11.49	\$22.90	\$0.00	\$105.15

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Lowell

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.83	\$11.49	\$22.90	\$0.00	\$66.22
2	60	\$38.20	\$11.49	\$22.90	\$0.00	\$72.59
3	70	\$44.56	\$11.49	\$22.90	\$0.00	\$78.95
4	80	\$50.93	\$11.49	\$22.90	\$0.00	\$85.32
5	90	\$57.29	\$11.49	\$22.90	\$0.00	\$91.68

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.91	\$11.49	\$22.90	\$0.00	\$67.30
2	60	\$39.49	\$11.49	\$22.90	\$0.00	\$73.88
3	70	\$46.07	\$11.49	\$22.90	\$0.00	\$80.46
4	80	\$52.65	\$11.49	\$22.90	\$0.00	\$87.04
5	90	\$59.23	\$11.49	\$22.90	\$0.00	\$93.62

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

CAISSON & UNDERPINNING BOTTOM MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$47.35	\$9.90	\$19.05	\$0.00	\$76.30
	06/01/2025	\$48.85	\$9.90	\$19.05	\$0.00	\$77.80
	12/01/2025	\$50.35	\$9.90	\$19.05	\$0.00	\$79.30
	06/01/2026	\$51.90	\$9.90	\$19.05	\$0.00	\$80.85
	12/01/2026	\$53.40	\$9.90	\$19.05	\$0.00	\$82.35

For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$46.20	\$9.90	\$19.05	\$0.00	\$75.15
	06/01/2025	\$47.70	\$9.90	\$19.05	\$0.00	\$76.65
	12/01/2025	\$49.20	\$9.90	\$19.05	\$0.00	\$78.15
	06/01/2026	\$50.75	\$9.90	\$19.05	\$0.00	\$79.70
	12/01/2026	\$52.25	\$9.90	\$19.05	\$0.00	\$81.20

For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$46.53	\$9.90	\$19.05	\$0.00	\$75.48
	06/01/2025	\$48.03	\$9.90	\$19.05	\$0.00	\$76.98
	12/01/2025	\$49.53	\$9.90	\$19.05	\$0.00	\$78.48
	06/01/2026	\$51.08	\$9.90	\$19.05	\$0.00	\$80.03
	12/01/2026	\$52.58	\$9.90	\$19.05	\$0.00	\$81.53

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARBIDE CORE DRILL OPERATOR	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
LABORERS - ZONE 2	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
CARPENTER	03/01/2025	\$49.62	\$9.83	\$19.97	\$0.00	\$79.42
CARPENTERS -ZONE 2 (Eastern Massachusetts)	09/01/2025	\$50.87	\$9.83	\$19.97	\$0.00	\$80.67
	03/01/2026	\$52.12	\$9.83	\$19.97	\$0.00	\$81.92
	09/01/2026	\$53.37	\$9.83	\$19.97	\$0.00	\$83.17
	03/01/2027	\$54.62	\$9.83	\$19.97	\$0.00	\$84.42

Apprentice - CARPENTER - Zone 2 Eastern MA

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$22.33	\$9.83	\$1.73	\$0.00	\$33.89
2	45	\$22.33	\$9.83	\$1.73	\$0.00	\$33.89
3	55	\$27.29	\$9.83	\$3.40	\$0.00	\$40.52
4	55	\$27.29	\$9.83	\$3.40	\$0.00	\$40.52
5	70	\$34.73	\$9.83	\$16.51	\$0.00	\$61.07
6	70	\$34.73	\$9.83	\$16.51	\$0.00	\$61.07
7	80	\$39.70	\$9.83	\$18.24	\$0.00	\$67.77
8	80	\$39.70	\$9.83	\$18.24	\$0.00	\$67.77

Effective Date - 09/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$22.89	\$9.83	\$1.73	\$0.00	\$34.45
2	45	\$22.89	\$9.83	\$1.73	\$0.00	\$34.45
3	55	\$27.98	\$9.83	\$3.40	\$0.00	\$41.21
4	55	\$27.98	\$9.83	\$3.40	\$0.00	\$41.21
5	70	\$35.61	\$9.83	\$16.51	\$0.00	\$61.95
6	70	\$35.61	\$9.83	\$16.51	\$0.00	\$61.95
7	80	\$40.70	\$9.83	\$18.24	\$0.00	\$68.77
8	80	\$40.70	\$9.83	\$18.24	\$0.00	\$68.77

Notes:

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME	10/01/2024	\$26.65	\$7.02	\$4.80	\$0.00	\$38.47
CARPENTERS-ZONE 3 (Wood Frame)	10/01/2025	\$27.75	\$7.02	\$4.80	\$0.00	\$39.57
	10/01/2026	\$28.85	\$7.02	\$4.80	\$0.00	\$40.67

Classification

	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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All Aspects of New Wood Frame Work

Apprentice - CARPENTER (Wood Frame) - Zone 3**Effective Date -** 10/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
2	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
3	65	\$17.32	\$7.02	\$1.00	\$0.00	\$25.34
4	70	\$18.66	\$7.02	\$1.00	\$0.00	\$26.68
5	75	\$19.99	\$7.02	\$4.80	\$0.00	\$31.81
6	80	\$21.32	\$7.02	\$4.80	\$0.00	\$33.14
7	85	\$22.65	\$7.02	\$4.80	\$0.00	\$34.47
8	90	\$23.99	\$7.02	\$4.80	\$0.00	\$35.81

Effective Date - 10/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.65	\$7.02	\$0.00	\$0.00	\$23.67
2	60	\$16.65	\$7.02	\$0.00	\$0.00	\$23.67
3	65	\$18.04	\$7.02	\$1.00	\$0.00	\$26.06
4	70	\$19.43	\$7.02	\$1.00	\$0.00	\$27.45
5	75	\$20.81	\$7.02	\$4.80	\$0.00	\$32.63
6	80	\$22.20	\$7.02	\$4.80	\$0.00	\$34.02
7	85	\$23.59	\$7.02	\$4.80	\$0.00	\$35.41
8	90	\$24.98	\$7.02	\$4.80	\$0.00	\$36.80

Notes:**Apprentice to Journeyworker Ratio:1:5**CEMENT MASONRY/PLASTERING
BRICKLAYERS LOCAL 3 (LOWELL)

07/01/2024 \$49.19 \$13.35 \$24.21 \$1.80 \$88.55

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - CEMENT MASONRY/PLASTERING - Lowell

Effective Date - 07/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.60	\$13.35	\$16.43	\$0.00	\$54.38
2	60	\$29.51	\$13.35	\$19.21	\$1.80	\$63.87
3	65	\$31.97	\$13.35	\$20.21	\$1.80	\$67.33
4	70	\$34.43	\$13.35	\$21.21	\$1.80	\$70.79
5	75	\$36.89	\$13.35	\$22.21	\$1.80	\$74.25
6	80	\$39.35	\$13.35	\$23.21	\$1.80	\$77.71
7	90	\$44.27	\$13.35	\$24.21	\$1.80	\$83.63

Notes:

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

Apprentice to Journeyworker Ratio:1:3

CHAIN SAW OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$58.18	\$15.55	\$16.50	\$0.00	\$90.23
	06/01/2025	\$59.51	\$15.55	\$16.50	\$0.00	\$91.56
	12/01/2025	\$60.98	\$15.55	\$16.50	\$0.00	\$93.03
	06/01/2026	\$62.31	\$15.55	\$16.50	\$0.00	\$94.36
	12/01/2026	\$63.79	\$15.55	\$16.50	\$0.00	\$95.84
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN LABORERS - ZONE 2	12/02/2024	\$46.25	\$9.90	\$18.90	\$0.00	\$75.05
	06/02/2025	\$47.75	\$9.90	\$18.90	\$0.00	\$76.55
	12/01/2025	\$49.25	\$9.90	\$18.90	\$0.00	\$78.05
	06/01/2026	\$50.80	\$9.90	\$18.90	\$0.00	\$79.60
	12/07/2026	\$52.30	\$9.90	\$18.90	\$0.00	\$81.10
	06/07/2027	\$53.90	\$9.90	\$18.90	\$0.00	\$82.70
	12/06/2027	\$55.50	\$9.90	\$18.90	\$0.00	\$84.30
	06/05/2028	\$57.18	\$9.90	\$18.90	\$0.00	\$85.98
	12/04/2028	\$58.85	\$9.90	\$18.90	\$0.00	\$87.65

For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 2	12/02/2024	\$47.25	\$9.90	\$18.90	\$0.00	\$76.05
	06/02/2025	\$48.75	\$9.90	\$18.90	\$0.00	\$77.55
	12/01/2025	\$50.25	\$9.90	\$18.90	\$0.00	\$79.05
	06/01/2026	\$51.80	\$9.90	\$18.90	\$0.00	\$80.60
	12/07/2026	\$53.30	\$9.90	\$18.90	\$0.00	\$82.10
	06/07/2027	\$54.90	\$9.90	\$18.90	\$0.00	\$83.70
	12/06/2027	\$56.50	\$9.90	\$18.90	\$0.00	\$85.30
	06/05/2028	\$58.18	\$9.90	\$18.90	\$0.00	\$86.98
	12/04/2028	\$59.85	\$9.90	\$18.90	\$0.00	\$88.65

For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS LABORERS - ZONE 2	12/02/2024	\$47.00	\$9.90	\$18.90	\$0.00	\$75.80
	06/02/2025	\$48.50	\$9.90	\$18.90	\$0.00	\$77.30
	12/01/2025	\$50.00	\$9.90	\$18.90	\$0.00	\$78.80
	06/01/2026	\$51.55	\$9.90	\$18.90	\$0.00	\$80.35
	12/07/2026	\$53.05	\$9.90	\$18.90	\$0.00	\$81.85
	06/07/2027	\$54.65	\$9.90	\$18.90	\$0.00	\$83.45
	12/06/2027	\$56.25	\$9.90	\$18.90	\$0.00	\$85.05
	06/05/2028	\$57.93	\$9.90	\$18.90	\$0.00	\$86.73
	12/04/2028	\$59.60	\$9.90	\$18.90	\$0.00	\$88.40

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 2</i>	12/02/2024	\$47.25	\$9.90	\$18.90	\$0.00	\$76.05
	06/02/2025	\$48.75	\$9.90	\$18.90	\$0.00	\$77.55
	12/01/2025	\$50.25	\$9.90	\$18.90	\$0.00	\$79.05
	06/01/2026	\$51.80	\$9.90	\$18.90	\$0.00	\$80.60
	12/07/2026	\$53.30	\$9.90	\$18.90	\$0.00	\$82.10
	06/07/2027	\$54.90	\$9.90	\$18.90	\$0.00	\$83.70
	12/06/2027	\$56.50	\$9.90	\$18.90	\$0.00	\$85.30
	06/05/2028	\$58.18	\$9.90	\$18.90	\$0.00	\$86.98
	12/04/2028	\$59.85	\$9.90	\$18.90	\$0.00	\$88.65
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	12/02/2024	\$47.00	\$9.90	\$18.90	\$0.00	\$75.80
	06/02/2025	\$48.50	\$9.90	\$18.90	\$0.00	\$77.30
	12/01/2025	\$50.00	\$9.90	\$18.90	\$0.00	\$78.80
	06/01/2026	\$51.55	\$9.90	\$18.90	\$0.00	\$80.35
	12/07/2026	\$53.05	\$9.90	\$18.90	\$0.00	\$81.85
	06/07/2027	\$54.65	\$9.90	\$18.90	\$0.00	\$83.45
	12/06/2027	\$56.25	\$9.90	\$18.90	\$0.00	\$85.05
	06/05/2028	\$57.93	\$9.90	\$18.90	\$0.00	\$86.73
	12/04/2028	\$59.60	\$9.90	\$18.90	\$0.00	\$88.40
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	12/02/2024	\$46.25	\$9.90	\$18.90	\$0.00	\$75.05
	06/02/2025	\$47.75	\$9.90	\$18.90	\$0.00	\$76.55
	12/01/2025	\$49.25	\$9.90	\$18.90	\$0.00	\$78.05
	06/01/2026	\$50.80	\$9.90	\$18.90	\$0.00	\$79.60
	12/07/2026	\$52.30	\$9.90	\$18.90	\$0.00	\$81.10
	06/07/2027	\$53.90	\$9.90	\$18.90	\$0.00	\$82.70
	12/06/2027	\$55.50	\$9.90	\$18.90	\$0.00	\$84.30
	06/05/2028	\$57.18	\$9.90	\$18.90	\$0.00	\$85.98
	12/04/2028	\$58.85	\$9.90	\$18.90	\$0.00	\$87.65
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2024	\$78.11	\$10.08	\$21.66	\$0.00	\$109.85
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Diver wage 70/80/90 2A \$69.83, 3A \$91.79,4A \$102.14 Total Rate						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2024	\$55.79	\$10.08	\$24.29	\$0.00	\$90.16
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Piledriver wage 70/80/90 2A \$54.20, 3A \$73.93,4A \$82.05 Total Rate						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2024	\$83.69	\$10.08	\$24.29	\$0.00	\$118.06
For apprentice rates see "Apprentice- PILE DRIVER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2024	\$117.16	\$10.08	\$24.29	\$0.00	\$151.53
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 <i>ELECTRICIANS LOCAL 96</i>						
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34

Apprentice - ELECTRICIAN - Local 96

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.82	\$13.99	\$0.56	\$0.00	\$33.37
2	45	\$21.17	\$13.99	\$0.64	\$0.00	\$35.80
3	48	\$22.58	\$13.99	\$15.79	\$0.00	\$52.36
4	55	\$25.88	\$13.99	\$16.26	\$0.00	\$56.13
5	65	\$30.58	\$13.99	\$16.91	\$0.00	\$61.48
6	80	\$37.64	\$13.99	\$17.90	\$0.00	\$69.53

Effective Date - 09/07/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.26	\$14.98	\$0.58	\$0.00	\$34.82
2	45	\$21.67	\$14.98	\$0.65	\$0.00	\$37.30
3	48	\$23.12	\$14.98	\$16.09	\$0.00	\$54.19
4	55	\$26.49	\$14.98	\$16.57	\$0.00	\$58.04
5	65	\$31.30	\$14.98	\$17.25	\$0.00	\$63.53
6	80	\$38.53	\$14.98	\$18.26	\$0.00	\$71.77

Notes:

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

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR <i>ELEVATOR CONSTRUCTORS LOCAL 41</i>	01/01/2025	\$62.83	\$16.28	\$21.36	\$0.00	\$100.47
	01/01/2026	\$63.68	\$16.38	\$21.76	\$0.00	\$101.82
	01/01/2027	\$64.53	\$16.48	\$22.16	\$0.00	\$103.17

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - ELEVATOR CONSTRUCTOR - Local 41

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.42	\$16.28	\$0.00	\$0.00	\$47.70
2	55	\$34.56	\$16.28	\$21.36	\$0.00	\$72.20
3	65	\$40.84	\$16.28	\$21.36	\$0.00	\$78.48
4	70	\$43.98	\$16.28	\$21.36	\$0.00	\$81.62
5	80	\$50.26	\$16.28	\$21.36	\$0.00	\$87.90

Effective Date - 01/01/2026

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.84	\$16.38	\$0.00	\$0.00	\$48.22
2	55	\$35.02	\$16.38	\$21.76	\$0.00	\$73.16
3	65	\$41.39	\$16.38	\$21.76	\$0.00	\$79.53
4	70	\$44.58	\$16.38	\$21.76	\$0.00	\$82.72
5	80	\$50.94	\$16.38	\$21.76	\$0.00	\$89.08

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>	01/01/2025	\$43.98	\$16.28	\$21.36	\$0.00	\$81.62
	01/01/2026	\$44.58	\$16.38	\$21.76	\$0.00	\$82.72
	01/01/2027	\$45.17	\$16.48	\$22.16	\$0.00	\$83.81

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21

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

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2025	\$53.22	\$15.30	\$16.40	\$0.00	\$84.92
	11/01/2025	\$54.51	\$15.30	\$16.40	\$0.00	\$86.21
	05/01/2026	\$55.95	\$15.30	\$16.40	\$0.00	\$87.65
	11/01/2026	\$57.24	\$15.30	\$16.40	\$0.00	\$88.94
	05/01/2027	\$58.67	\$15.30	\$16.40	\$0.00	\$90.37

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2025	\$54.82	\$15.30	\$16.40	\$0.00	\$86.52
	11/01/2025	\$56.12	\$15.30	\$16.40	\$0.00	\$87.82
	05/01/2026	\$57.57	\$15.30	\$16.40	\$0.00	\$89.27
	11/01/2026	\$58.87	\$15.30	\$16.40	\$0.00	\$90.57
	05/01/2027	\$60.32	\$15.30	\$16.40	\$0.00	\$92.02

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2025	\$26.22	\$15.30	\$16.40	\$0.00	\$57.92
	11/01/2025	\$26.98	\$15.30	\$16.40	\$0.00	\$58.68
	05/01/2026	\$27.83	\$15.30	\$16.40	\$0.00	\$59.53
	11/01/2026	\$28.59	\$15.30	\$16.40	\$0.00	\$60.29
	05/01/2027	\$29.44	\$15.30	\$16.40	\$0.00	\$61.14
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 96</i>	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINT/COMMISSIONING <i>ELECTRICIANS LOCAL 96</i>	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$45.96	\$15.55	\$16.50	\$0.00	\$78.01
	06/01/2025	\$47.02	\$15.55	\$16.50	\$0.00	\$79.07
	12/01/2025	\$48.19	\$15.55	\$16.50	\$0.00	\$80.24
	06/01/2026	\$49.25	\$15.55	\$16.50	\$0.00	\$81.30
	12/01/2026	\$50.43	\$15.55	\$16.50	\$0.00	\$82.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$27.01	\$9.90	\$18.46	\$0.00	\$55.37
	06/01/2025	\$28.09	\$9.90	\$18.46	\$0.00	\$56.45
	12/01/2025	\$28.09	\$9.90	\$18.46	\$0.00	\$56.45
	06/01/2026	\$29.21	\$9.90	\$18.46	\$0.00	\$57.57
	12/01/2026	\$29.21	\$9.90	\$18.46	\$0.00	\$57.57
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE I</i>	03/01/2025	\$57.73	\$8.83	\$20.27	\$0.00	\$86.83
	09/01/2025	\$59.23	\$8.83	\$20.27	\$0.00	\$88.33
	03/01/2026	\$60.73	\$8.83	\$20.27	\$0.00	\$89.83
	09/01/2026	\$62.23	\$8.83	\$20.27	\$0.00	\$91.33
	03/01/2027	\$63.73	\$8.83	\$20.27	\$0.00	\$92.83

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - FLOORCOVERER - Local 2168 Zone I

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$25.98	\$8.83	\$1.76	\$0.00	\$36.57
2	45	\$25.98	\$8.83	\$1.76	\$0.00	\$36.57
3	55	\$31.75	\$8.83	\$3.52	\$0.00	\$44.10
4	55	\$31.75	\$8.83	\$3.52	\$0.00	\$44.10
5	70	\$40.41	\$8.83	\$16.75	\$0.00	\$65.99
6	70	\$40.41	\$8.83	\$16.75	\$0.00	\$65.99
7	80	\$46.18	\$8.83	\$18.51	\$0.00	\$73.52
8	80	\$46.18	\$8.83	\$18.51	\$0.00	\$73.52

Effective Date - 09/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$26.65	\$8.83	\$1.76	\$0.00	\$37.24
2	45	\$26.65	\$8.83	\$1.76	\$0.00	\$37.24
3	55	\$32.58	\$8.83	\$3.52	\$0.00	\$44.93
4	55	\$32.58	\$8.83	\$3.52	\$0.00	\$44.93
5	70	\$41.46	\$8.83	\$16.75	\$0.00	\$67.04
6	70	\$41.46	\$8.83	\$16.75	\$0.00	\$67.04
7	80	\$47.38	\$8.83	\$18.51	\$0.00	\$74.72
8	80	\$47.38	\$8.83	\$18.51	\$0.00	\$74.72

Notes: Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - GLAZIER - Local 35 Zone 2

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.98	\$9.95	\$0.00	\$0.00	\$33.93
2	55	\$26.38	\$9.95	\$6.66	\$0.00	\$42.99
3	60	\$28.78	\$9.95	\$7.26	\$0.00	\$45.99
4	65	\$31.17	\$9.95	\$7.87	\$0.00	\$48.99
5	70	\$33.57	\$9.95	\$20.32	\$0.00	\$63.84
6	75	\$35.97	\$9.95	\$20.93	\$0.00	\$66.85
7	80	\$38.37	\$9.95	\$21.53	\$0.00	\$69.85
8	90	\$43.16	\$9.95	\$22.74	\$0.00	\$75.85

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

HOISTING ENGINEER/CRANES/GRADALLS OPERATING ENGINEERS LOCAL 4	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 12/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$31.37	\$0.00	\$0.00	\$0.00	\$31.37
2	60	\$34.22	\$15.55	\$16.50	\$0.00	\$66.27
3	65	\$37.07	\$15.55	\$16.50	\$0.00	\$69.12
4	70	\$39.92	\$15.55	\$16.50	\$0.00	\$71.97
5	75	\$42.77	\$15.55	\$16.50	\$0.00	\$74.82
6	80	\$45.62	\$15.55	\$16.50	\$0.00	\$77.67
7	85	\$48.48	\$15.55	\$16.50	\$0.00	\$80.53
8	90	\$51.33	\$15.55	\$16.50	\$0.00	\$83.38

Effective Date - 06/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$32.08	\$0.00	\$0.00	\$0.00	\$32.08
2	60	\$35.00	\$15.55	\$16.50	\$0.00	\$67.05
3	65	\$37.91	\$15.55	\$16.50	\$0.00	\$69.96
4	70	\$40.83	\$15.55	\$16.50	\$0.00	\$72.88
5	75	\$43.75	\$15.55	\$16.50	\$0.00	\$75.80
6	80	\$46.66	\$15.55	\$16.50	\$0.00	\$78.71
7	85	\$49.58	\$15.55	\$16.50	\$0.00	\$81.63
8	90	\$52.50	\$15.55	\$16.50	\$0.00	\$84.55

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2025	\$59.13	\$14.91	\$28.27	\$2.98	\$105.29
	08/01/2025	\$60.98	\$14.91	\$28.27	\$2.98	\$107.14
	02/01/2026	\$62.93	\$14.91	\$28.27	\$2.98	\$109.09
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 96</i>						
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>						
	02/01/2025	\$59.13	\$14.91	\$28.27	\$2.98	\$105.29
	08/01/2025	\$60.98	\$14.91	\$28.27	\$2.98	\$107.14
	02/01/2026	\$62.93	\$14.91	\$28.27	\$2.98	\$109.09
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING -WATER) <i>PIPEFITTERS LOCAL 537</i>						
	03/01/2025	\$68.88	\$12.70	\$21.80	\$0.00	\$103.38
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537</i>						
	03/01/2025	\$68.88	\$12.70	\$21.80	\$0.00	\$103.38
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.70	\$9.90	\$18.36	\$0.00	\$67.96
	06/01/2025	\$41.09	\$9.90	\$18.36	\$0.00	\$69.35
	12/01/2025	\$42.47	\$9.90	\$18.36	\$0.00	\$70.73
	06/01/2026	\$43.91	\$9.90	\$18.36	\$0.00	\$72.17
	12/01/2026	\$45.35	\$9.90	\$18.36	\$0.00	\$73.61
	06/01/2027	\$46.80	\$9.90	\$18.36	\$0.00	\$75.06
	12/01/2027	\$48.25	\$9.90	\$18.36	\$0.00	\$76.51
	06/01/2028	\$49.75	\$9.90	\$18.36	\$0.00	\$78.01
	12/01/2028	\$51.25	\$9.90	\$18.36	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.70	\$9.90	\$18.46	\$0.00	\$68.06
	06/01/2025	\$41.09	\$9.90	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.47	\$9.90	\$18.46	\$0.00	\$70.83
	06/01/2026	\$43.91	\$9.90	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.35	\$9.90	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2024	\$56.92	\$14.75	\$19.61	\$0.00	\$91.28
	09/01/2025	\$60.34	\$14.75	\$19.61	\$0.00	\$94.70
	09/01/2026	\$63.76	\$14.75	\$19.61	\$0.00	\$98.12

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

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.46	\$14.75	\$14.32	\$0.00	\$57.53
2	60	\$34.15	\$14.75	\$15.37	\$0.00	\$64.27
3	70	\$39.84	\$14.75	\$16.43	\$0.00	\$71.02
4	80	\$45.54	\$14.75	\$17.49	\$0.00	\$77.78

Effective Date - 09/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.17	\$14.75	\$14.32	\$0.00	\$59.24
2	60	\$36.20	\$14.75	\$15.37	\$0.00	\$66.32
3	70	\$42.24	\$14.75	\$16.43	\$0.00	\$73.42
4	80	\$48.27	\$14.75	\$17.49	\$0.00	\$80.51

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (WORCESTER AREA)</i>	03/16/2024	\$53.67	\$8.35	\$26.70	\$0.00	\$88.72
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - IRONWORKER - Local 7 Worcester

Effective Date - 03/16/2024

Step	percent	Apprentice	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60		\$32.20	\$8.35	\$26.70	\$0.00	\$67.25
2	70		\$37.57	\$8.35	\$26.70	\$0.00	\$72.62
3	75		\$40.25	\$8.35	\$26.70	\$0.00	\$75.30
4	80		\$42.94	\$8.35	\$26.70	\$0.00	\$77.99
5	85		\$45.62	\$8.35	\$26.70	\$0.00	\$80.67
6	90		\$48.30	\$8.35	\$26.70	\$0.00	\$83.35

Notes:

Apprentice to Journeyworker Ratio:1:4

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 2	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 2	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - LABORER - Zone 2

Effective Date - 12/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.37	\$9.90	\$18.36	\$0.00	\$51.63
2	70	\$27.27	\$9.90	\$18.36	\$0.00	\$55.53
3	80	\$31.16	\$9.90	\$18.36	\$0.00	\$59.42
4	90	\$35.06	\$9.90	\$18.36	\$0.00	\$63.32

Effective Date - 06/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.20	\$9.90	\$18.36	\$0.00	\$52.46
2	70	\$28.24	\$9.90	\$18.36	\$0.00	\$56.50
3	80	\$32.27	\$9.90	\$18.36	\$0.00	\$60.53
4	90	\$36.31	\$9.90	\$18.36	\$0.00	\$64.57

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER (HEAVY & HIGHWAY)	12/01/2024	\$38.95	\$9.90	\$18.46	\$0.00	\$67.31
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2025	\$40.34	\$9.90	\$18.46	\$0.00	\$68.70
	12/01/2025	\$41.72	\$9.90	\$18.46	\$0.00	\$70.08
	06/01/2026	\$43.16	\$9.90	\$18.46	\$0.00	\$71.52
	12/01/2026	\$44.60	\$9.90	\$18.46	\$0.00	\$72.96

Apprentice - LABORER (Heavy & Highway) - Zone 2

Effective Date - 12/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.37	\$9.90	\$18.46	\$0.00	\$51.73
2	70	\$27.27	\$9.90	\$18.46	\$0.00	\$55.63
3	80	\$31.16	\$9.90	\$18.46	\$0.00	\$59.52
4	90	\$35.06	\$9.90	\$18.46	\$0.00	\$63.42

Effective Date - 06/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.20	\$9.90	\$18.46	\$0.00	\$52.56
2	70	\$28.24	\$9.90	\$18.46	\$0.00	\$56.60
3	80	\$32.27	\$9.90	\$18.46	\$0.00	\$60.63
4	90	\$36.31	\$9.90	\$18.46	\$0.00	\$64.67

Notes:

Apprentice to Journeyworker Ratio:1:5

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: CARPENTER TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 2</i>	12/02/2024	\$39.04	\$9.90	\$18.42	\$0.00	\$67.36
	06/02/2025	\$40.43	\$9.90	\$18.42	\$0.00	\$68.75
	12/01/2025	\$41.81	\$9.90	\$18.42	\$0.00	\$70.13
	06/01/2026	\$43.25	\$9.90	\$18.42	\$0.00	\$71.57
	12/07/2026	\$44.69	\$9.90	\$18.42	\$0.00	\$73.01
	06/07/2027	\$46.14	\$9.90	\$18.42	\$0.00	\$74.46
	12/06/2027	\$47.59	\$9.90	\$18.42	\$0.00	\$75.91
	06/05/2028	\$49.09	\$9.90	\$18.42	\$0.00	\$77.41
	12/04/2028	\$50.59	\$9.90	\$18.42	\$0.00	\$78.91
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76
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"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	02/01/2025	\$50.36	\$11.49	\$21.62	\$0.00	\$83.47
	08/01/2025	\$52.08	\$11.49	\$21.62	\$0.00	\$85.19
	02/01/2026	\$53.16	\$11.49	\$21.62	\$0.00	\$86.27
	08/01/2026	\$54.92	\$11.49	\$21.62	\$0.00	\$88.03
	02/01/2027	\$56.04	\$11.49	\$21.62	\$0.00	\$89.15

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.18	\$11.49	\$21.62	\$0.00	\$58.29
2	60	\$30.22	\$11.49	\$21.62	\$0.00	\$63.33
3	70	\$35.25	\$11.49	\$21.62	\$0.00	\$68.36
4	80	\$40.29	\$11.49	\$21.62	\$0.00	\$73.40
5	90	\$45.32	\$11.49	\$21.62	\$0.00	\$78.43

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.04	\$11.49	\$21.62	\$0.00	\$59.15
2	60	\$31.25	\$11.49	\$21.62	\$0.00	\$64.36
3	70	\$36.46	\$11.49	\$21.62	\$0.00	\$69.57
4	80	\$41.66	\$11.49	\$21.62	\$0.00	\$74.77
5	90	\$46.87	\$11.49	\$21.62	\$0.00	\$79.98

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS,TILELAYERS & TERRAZZO MECH BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2025	\$65.82	\$11.49	\$23.56	\$0.00	\$100.87
	08/01/2025	\$67.97	\$11.49	\$23.56	\$0.00	\$103.02
	02/01/2026	\$69.32	\$11.49	\$23.56	\$0.00	\$104.37
	08/01/2026	\$71.52	\$11.49	\$23.56	\$0.00	\$106.57
	02/01/2027	\$72.92	\$11.49	\$23.56	\$0.00	\$107.97

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.91	\$11.49	\$23.56	\$0.00	\$67.96
2	60	\$39.49	\$11.49	\$23.56	\$0.00	\$74.54
3	70	\$46.07	\$11.49	\$23.56	\$0.00	\$81.12
4	80	\$52.66	\$11.49	\$23.56	\$0.00	\$87.71
5	90	\$59.24	\$11.49	\$23.56	\$0.00	\$94.29

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$33.99	\$11.49	\$23.56	\$0.00	\$69.04
2	60	\$40.78	\$11.49	\$23.56	\$0.00	\$75.83
3	70	\$47.58	\$11.49	\$23.56	\$0.00	\$82.63
4	80	\$54.38	\$11.49	\$23.56	\$0.00	\$89.43
5	90	\$61.17	\$11.49	\$23.56	\$0.00	\$96.22

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 2) <i>MILLWRIGHTS LOCAL 1121 - Zone 2</i>	01/06/2025	\$45.09	\$10.08	\$21.47	\$0.00	\$76.64
	01/05/2026	\$47.42	\$10.08	\$21.47	\$0.00	\$78.97

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - MILLWRIGHT - Local 1121 Zone 2

Effective Date - 01/06/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$24.80	\$10.08	\$5.50	\$0.00	\$40.38
2	65	\$29.31	\$10.08	\$6.50	\$0.00	\$45.89
3	75	\$33.82	\$10.08	\$18.97	\$0.00	\$62.87
4	85	\$38.33	\$10.08	\$19.97	\$0.00	\$68.38

Effective Date - 01/05/2026

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$26.08	\$10.08	\$5.50	\$0.00	\$41.66
2	65	\$30.82	\$10.08	\$6.50	\$0.00	\$47.40
3	75	\$35.57	\$10.08	\$18.97	\$0.00	\$64.62
4	85	\$40.31	\$10.08	\$19.97	\$0.00	\$70.36

Notes: Step 1&2 Appr. indentured after 1/6/2020 receive no pension, but do receive annuity. (Step 1 \$5.72, Step 2 \$6.66)
Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:4

MORTAR MIXER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES,GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$25.37	\$15.30	\$16.40	\$0.00	\$57.07
	06/01/2025	\$25.97	\$15.30	\$16.40	\$0.00	\$57.67
	12/01/2025	\$26.63	\$15.30	\$16.40	\$0.00	\$58.33
	06/01/2026	\$27.22	\$15.30	\$16.40	\$0.00	\$58.92
	12/01/2026	\$27.89	\$15.30	\$16.40	\$0.00	\$59.59

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$31.08	\$15.30	\$16.40	\$0.00	\$62.78
	06/01/2025	\$31.80	\$15.30	\$16.40	\$0.00	\$63.50
	12/01/2025	\$32.60	\$15.30	\$16.40	\$0.00	\$64.30
	06/01/2026	\$33.32	\$15.30	\$16.40	\$0.00	\$65.02
	12/01/2026	\$34.12	\$15.30	\$16.40	\$0.00	\$65.82

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36
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Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2025	\$49.36	\$9.95	\$23.95	\$0.00	\$83.26
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. <i>PAINTERS LOCAL 35 - ZONE 2</i>						

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

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.68	\$9.95	\$0.00	\$0.00	\$34.63
2	55	\$27.15	\$9.95	\$6.66	\$0.00	\$43.76
3	60	\$29.62	\$9.95	\$7.26	\$0.00	\$46.83
4	65	\$32.08	\$9.95	\$7.87	\$0.00	\$49.90
5	70	\$34.55	\$9.95	\$20.32	\$0.00	\$64.82
6	75	\$37.02	\$9.95	\$20.93	\$0.00	\$67.90
7	80	\$39.49	\$9.95	\$21.53	\$0.00	\$70.97
8	90	\$44.42	\$9.95	\$22.74	\$0.00	\$77.11

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PAINTER (SPRAY OR SANDBLAST, REPAINT) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$47.42	\$9.95	\$23.95	\$0.00	\$81.32

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

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.71	\$9.95	\$0.00	\$0.00	\$33.66
2	55	\$26.08	\$9.95	\$6.66	\$0.00	\$42.69
3	60	\$28.45	\$9.95	\$7.26	\$0.00	\$45.66
4	65	\$30.82	\$9.95	\$7.87	\$0.00	\$48.64
5	70	\$33.19	\$9.95	\$20.32	\$0.00	\$63.46
6	75	\$35.57	\$9.95	\$20.93	\$0.00	\$66.45
7	80	\$37.94	\$9.95	\$21.53	\$0.00	\$69.42
8	90	\$42.68	\$9.95	\$22.74	\$0.00	\$75.37

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, NEW) *	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. <i>PAINTERS LOCAL 35 - ZONE 2</i>						

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.98	\$9.95	\$0.00	\$0.00	\$33.93
2	55	\$26.38	\$9.95	\$6.66	\$0.00	\$42.99
3	60	\$28.78	\$9.95	\$7.26	\$0.00	\$45.99
4	65	\$31.17	\$9.95	\$7.87	\$0.00	\$48.99
5	70	\$33.57	\$9.95	\$20.32	\$0.00	\$63.84
6	75	\$35.97	\$9.95	\$20.93	\$0.00	\$66.85
7	80	\$38.37	\$9.95	\$21.53	\$0.00	\$69.85
8	90	\$43.16	\$9.95	\$22.74	\$0.00	\$75.85

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$46.02	\$9.95	\$23.95	\$0.00	\$79.92
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

Effective Date - 01/01/2025

Step	percent	Apprentice	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50		\$23.01	\$9.95	\$0.00	\$0.00	\$32.96
2	55		\$25.31	\$9.95	\$6.66	\$0.00	\$41.92
3	60		\$27.61	\$9.95	\$7.26	\$0.00	\$44.82
4	65		\$29.91	\$9.95	\$7.87	\$0.00	\$47.73
5	70		\$32.21	\$9.95	\$20.32	\$0.00	\$62.48
6	75		\$34.52	\$9.95	\$20.93	\$0.00	\$65.40
7	80		\$36.82	\$9.95	\$21.53	\$0.00	\$68.30
8	90		\$41.42	\$9.95	\$22.74	\$0.00	\$74.11

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2024	\$38.95	\$9.90	\$18.46	\$0.00	\$67.31
	06/01/2025	\$40.34	\$9.90	\$18.46	\$0.00	\$68.70
	12/01/2025	\$41.72	\$9.90	\$18.46	\$0.00	\$70.08
	06/01/2026	\$43.16	\$9.90	\$18.46	\$0.00	\$71.52
	12/01/2026	\$44.60	\$9.90	\$18.46	\$0.00	\$72.96
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
PANEL & PICKUP TRUCKS DRIVER TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	01/01/2025	\$39.78	\$15.57	\$20.17	\$0.00	\$75.52
	06/01/2025	\$40.78	\$15.57	\$20.17	\$0.00	\$76.52
	12/01/2025	\$40.78	\$15.57	\$21.78	\$0.00	\$78.13
	01/01/2026	\$40.78	\$16.17	\$21.78	\$0.00	\$78.73
	06/01/2026	\$41.78	\$16.17	\$21.78	\$0.00	\$79.73
	12/01/2026	\$41.78	\$16.17	\$23.52	\$0.00	\$81.47
	01/01/2027	\$41.78	\$16.77	\$23.52	\$0.00	\$82.07
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) PILE DRIVER LOCAL 56 (ZONE 1)	08/01/2024	\$55.79	\$10.08	\$24.29	\$0.00	\$90.16
For apprentice rates see "Apprentice- PILE DRIVER"						
PILE DRIVER PILE DRIVER LOCAL 56 (ZONE 1)	08/01/2024	\$55.79	\$10.08	\$24.29	\$0.00	\$90.16

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - PILE DRIVER - Local 56 Zone 1

Effective Date - 08/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$25.11	\$10.08	\$2.53	\$0.00	\$37.72
2	55	\$30.68	\$10.08	\$5.07	\$0.00	\$45.83
3	70	\$39.05	\$10.08	\$19.22	\$0.00	\$68.35
4	80	\$44.63	\$10.08	\$21.76	\$0.00	\$76.47

Notes:

% Indentured BEFORE 8/1/20; 50/60/70/75/80/80/90/90

Apprentice to Journeyworker Ratio: 1.5

PIPEFITTER & STEAMFITTER
PIPEFITTERS LOCAL 537

03/01/2025 \$68.88 \$12.70 \$21.80 \$0.00 \$103.38

Apprentice - PIPEFITTER - Local 537

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$27.55	\$12.70	\$9.05	\$0.00	\$49.30
2	45	\$31.00	\$12.70	\$21.80	\$0.00	\$65.50
3	60	\$41.33	\$12.70	\$21.80	\$0.00	\$75.83
4	70	\$48.22	\$12.70	\$21.80	\$0.00	\$82.72
5	80	\$55.10	\$12.70	\$21.80	\$0.00	\$89.60

Notes:

** 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.

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

Apprentice to Journeyworker Ratio: **

PIPELAYER LABORERS - ZONE 2	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PLUMBERS & GASFITTERS <i>PLUMBERS & GASFITTERS LOCAL 12</i>	03/02/2025	\$69.84	\$14.32	\$20.31	\$0.00	\$104.47

Apprentice - PLUMBER/GASFITTER - Local 12

Effective Date - 03/02/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$24.44	\$14.32	\$7.41	\$0.00	\$46.17
2	40	\$27.94	\$14.32	\$8.42	\$0.00	\$50.68
3	55	\$38.41	\$14.32	\$11.47	\$0.00	\$64.20
4	65	\$45.40	\$14.32	\$13.50	\$0.00	\$73.22
5	75	\$52.38	\$14.32	\$15.53	\$0.00	\$82.23

Notes:

** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr

Step4 with lic\$76.49 tot.rate, Step5 with lic. \$85.32 tot. rate

Apprentice to Journeyworker Ratio:**

PNEUMATIC CONTROLS (TEMP.) <i>PIPEFITTERS LOCAL 537</i>	03/01/2025	\$68.88	\$12.70	\$21.80	\$0.00	\$103.38
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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.70	\$9.90	\$17.54	\$0.00	\$67.14
	06/01/2025	\$41.09	\$9.90	\$17.54	\$0.00	\$68.53
	12/01/2025	\$42.47	\$9.90	\$17.54	\$0.00	\$69.91
	06/01/2026	\$43.91	\$9.90	\$17.54	\$0.00	\$71.35
	12/01/2026	\$45.35	\$9.90	\$17.54	\$0.00	\$72.79
	06/01/2027	\$46.80	\$9.90	\$17.54	\$0.00	\$74.24
	12/01/2027	\$48.25	\$9.90	\$17.54	\$0.00	\$75.69
	06/01/2028	\$49.75	\$9.90	\$17.54	\$0.00	\$77.19
	12/01/2028	\$51.25	\$9.90	\$17.54	\$0.00	\$78.69

For apprentice rates see "Apprentice- LABORER"

PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21

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

POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.95	\$9.90	\$18.36	\$0.00	\$68.21
	06/01/2025	\$41.34	\$9.90	\$18.36	\$0.00	\$69.60
	12/01/2025	\$42.72	\$9.90	\$18.36	\$0.00	\$70.98
	06/01/2026	\$44.16	\$9.90	\$18.36	\$0.00	\$72.42
	12/01/2026	\$45.60	\$9.90	\$18.36	\$0.00	\$73.86
	06/01/2027	\$47.05	\$9.90	\$18.36	\$0.00	\$75.31
	12/01/2027	\$48.50	\$9.90	\$18.36	\$0.00	\$76.76
	06/01/2028	\$50.00	\$9.90	\$18.36	\$0.00	\$78.26
	12/01/2028	\$51.50	\$9.90	\$18.36	\$0.00	\$79.76

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.95	\$9.65	\$18.46	\$0.00	\$68.06
	06/01/2025	\$41.34	\$9.65	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.72	\$9.65	\$18.46	\$0.00	\$70.83
	06/01/2026	\$44.16	\$9.65	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.60	\$9.65	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 170 - Dauphinais (Bellingham)</i>	01/01/2025	\$27.60	\$11.26	\$6.15	\$0.00	\$45.01
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Inc.Roofers Waterproofng &Roofers Damproofg) <i>ROOFERS LOCAL 33</i>	02/01/2025	\$52.03	\$13.28	\$21.70	\$0.00	\$87.01
	08/01/2025	\$53.53	\$13.28	\$21.70	\$0.00	\$88.51
	02/01/2026	\$54.78	\$13.28	\$21.70	\$0.00	\$89.76

Apprentice - ROOFER - Local 33

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.02	\$13.28	\$15.55	\$0.00	\$54.85
2	60	\$31.22	\$13.28	\$21.70	\$0.00	\$66.20
3	65	\$33.82	\$13.28	\$21.70	\$0.00	\$68.80
4	75	\$39.02	\$13.28	\$21.70	\$0.00	\$74.00
5	85	\$44.23	\$13.28	\$21.70	\$0.00	\$79.21

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.77	\$13.28	\$15.55	\$0.00	\$55.60
2	60	\$32.12	\$13.28	\$21.70	\$0.00	\$67.10
3	65	\$34.79	\$13.28	\$21.70	\$0.00	\$69.77
4	75	\$40.15	\$13.28	\$21.70	\$0.00	\$75.13
5	85	\$45.50	\$13.28	\$21.70	\$0.00	\$80.48

Notes: ** 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1

Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.

(Hot Pitch Mechanics' receive \$1.00 hr. above ROOFER)

Apprentice to Journeyworker Ratio:**

ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 33</i>	02/01/2025	\$52.28	\$13.28	\$21.70	\$0.00	\$87.26
	08/01/2025	\$53.78	\$13.28	\$21.70	\$0.00	\$88.76
	02/01/2026	\$55.03	\$13.28	\$21.70	\$0.00	\$90.01

For apprentice rates see "Apprentice- ROOFER"

SHEETMETAL WORKER <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2025	\$59.13	\$14.91	\$28.27	\$2.98	\$105.29
	08/01/2025	\$60.98	\$14.91	\$28.27	\$2.98	\$107.14
	02/01/2026	\$62.93	\$14.91	\$28.27	\$2.98	\$109.09

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - SHEET METAL WORKER - Local 17-A

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$24.83	\$14.91	\$6.13	\$0.00	\$45.87
2	42	\$24.83	\$14.91	\$6.13	\$0.00	\$45.87
3	47	\$27.79	\$14.91	\$12.26	\$1.62	\$56.58
4	47	\$27.79	\$14.91	\$12.26	\$1.62	\$56.58
5	52	\$30.75	\$14.91	\$13.24	\$1.74	\$60.64
6	52	\$30.75	\$14.91	\$13.49	\$1.75	\$60.90
7	60	\$35.48	\$14.91	\$14.90	\$1.93	\$67.22
8	65	\$38.43	\$14.91	\$15.88	\$2.04	\$71.26
9	75	\$44.35	\$14.91	\$17.84	\$2.28	\$79.38
10	85	\$50.26	\$14.91	\$19.30	\$2.49	\$86.96

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$25.61	\$14.91	\$6.13	\$0.00	\$46.65
2	42	\$25.61	\$14.91	\$6.13	\$0.00	\$46.65
3	47	\$28.66	\$14.91	\$12.26	\$1.62	\$57.45
4	47	\$28.66	\$14.91	\$12.26	\$1.62	\$57.45
5	52	\$31.71	\$14.91	\$13.24	\$1.74	\$61.60
6	52	\$31.71	\$14.91	\$13.49	\$1.75	\$61.86
7	60	\$36.59	\$14.91	\$14.90	\$1.93	\$68.33
8	65	\$39.64	\$14.91	\$15.88	\$2.04	\$72.47
9	75	\$45.74	\$14.91	\$17.84	\$2.28	\$80.77
10	85	\$51.83	\$14.91	\$19.30	\$2.49	\$88.53

Notes:

Steps are 6 mos.

Apprentice to Journeyworker Ratio:1:4

SPECIALIZED EARTH MOVING EQUIP < 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
	01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.53	\$15.57	\$20.17	\$0.00	\$76.27
	06/01/2025	\$41.53	\$15.57	\$20.17	\$0.00	\$77.27
	12/01/2025	\$41.53	\$15.57	\$21.78	\$0.00	\$78.88
	01/01/2026	\$41.53	\$16.17	\$21.78	\$0.00	\$79.48
	06/01/2026	\$42.53	\$16.17	\$21.78	\$0.00	\$80.48
	12/01/2026	\$42.53	\$16.17	\$23.52	\$0.00	\$82.22
	01/01/2027	\$42.53	\$16.77	\$23.52	\$0.00	\$82.82
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1</i>	03/01/2025	\$72.14	\$11.51	\$23.80	\$0.00	\$107.45

Apprentice - SPRINKLER FITTER - Local 550 (Section A) Zone 1

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$25.25	\$11.51	\$13.07	\$0.00	\$49.83
2	40	\$28.86	\$11.51	\$13.90	\$0.00	\$54.27
3	45	\$32.46	\$11.51	\$14.73	\$0.00	\$58.70
4	50	\$36.07	\$11.51	\$15.55	\$0.00	\$63.13
5	55	\$39.68	\$11.51	\$16.37	\$0.00	\$67.56
6	60	\$43.28	\$11.51	\$17.20	\$0.00	\$71.99
7	65	\$46.89	\$11.51	\$18.03	\$0.00	\$76.43
8	70	\$50.50	\$11.51	\$18.85	\$0.00	\$80.86
9	75	\$54.11	\$11.51	\$19.67	\$0.00	\$85.29
10	80	\$57.71	\$11.51	\$20.50	\$0.00	\$89.72

Notes: Apprentice entered prior 9/30/10:

40/45/50/55/60/65/70/75/80/85

Steps are 850 hours

Apprentice to Journeyworker Ratio:1:3

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	02/01/2025	\$64.74	\$11.49	\$23.59	\$0.00	\$99.82
	08/01/2025	\$66.89	\$11.49	\$23.59	\$0.00	\$101.97
	02/01/2026	\$68.24	\$11.49	\$23.59	\$0.00	\$103.32
	08/01/2026	\$70.44	\$11.49	\$23.59	\$0.00	\$105.52
	02/01/2027	\$71.84	\$11.49	\$23.59	\$0.00	\$106.92

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.37	\$11.49	\$23.59	\$0.00	\$67.45
2	60	\$38.84	\$11.49	\$23.59	\$0.00	\$73.92
3	70	\$45.32	\$11.49	\$23.59	\$0.00	\$80.40
4	80	\$51.79	\$11.49	\$23.59	\$0.00	\$86.87
5	90	\$58.27	\$11.49	\$23.59	\$0.00	\$93.35

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$33.45	\$11.49	\$23.59	\$0.00	\$68.53
2	60	\$40.13	\$11.49	\$23.59	\$0.00	\$75.21
3	70	\$46.82	\$11.49	\$23.59	\$0.00	\$81.90
4	80	\$53.51	\$11.49	\$23.59	\$0.00	\$88.59
5	90	\$60.20	\$11.49	\$23.59	\$0.00	\$95.28

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$50.20	\$9.90	\$19.05	\$0.00	\$79.15
	06/01/2025	\$51.70	\$9.90	\$19.05	\$0.00	\$80.65
	12/01/2025	\$53.20	\$9.90	\$19.05	\$0.00	\$82.15
	06/01/2026	\$54.75	\$9.90	\$19.05	\$0.00	\$83.70
	12/01/2026	\$56.25	\$9.90	\$19.05	\$0.00	\$85.20

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$46.32	\$9.90	\$19.05	\$0.00	\$75.27
	06/01/2025	\$47.82	\$9.90	\$19.05	\$0.00	\$76.77
	12/01/2025	\$49.32	\$9.90	\$19.05	\$0.00	\$78.27
	06/01/2026	\$50.87	\$9.90	\$19.05	\$0.00	\$79.82
	12/01/2026	\$52.37	\$9.90	\$19.05	\$0.00	\$81.32

For apprentice rates see "Apprentice- LABORER"

TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$46.20	\$9.90	\$19.05	\$0.00	\$75.15
	06/01/2025	\$47.70	\$9.90	\$19.05	\$0.00	\$76.65
	12/01/2025	\$49.20	\$9.90	\$19.05	\$0.00	\$78.15
	06/01/2026	\$50.75	\$9.90	\$19.05	\$0.00	\$79.70
	12/01/2026	\$52.25	\$9.90	\$19.05	\$0.00	\$81.20

For apprentice rates see "Apprentice- LABORER"

TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.82	\$15.57	\$20.17	\$0.00	\$76.56
	06/01/2025	\$41.82	\$15.57	\$20.17	\$0.00	\$77.56
	12/01/2025	\$41.82	\$15.57	\$21.78	\$0.00	\$79.17
	01/01/2026	\$41.82	\$16.17	\$21.78	\$0.00	\$79.77
	06/01/2026	\$42.82	\$16.17	\$21.78	\$0.00	\$80.77
	12/01/2026	\$42.82	\$16.17	\$23.52	\$0.00	\$82.51
	01/01/2027	\$42.82	\$16.77	\$23.52	\$0.00	\$83.11
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2024	\$58.43	\$9.90	\$19.50	\$0.00	\$87.83
	06/01/2025	\$59.93	\$9.90	\$19.50	\$0.00	\$89.33
	12/01/2025	\$61.43	\$9.90	\$19.50	\$0.00	\$90.83
	06/01/2026	\$62.98	\$9.90	\$19.50	\$0.00	\$92.38
	12/01/2026	\$64.48	\$9.90	\$19.50	\$0.00	\$93.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2024	\$60.43	\$9.90	\$19.50	\$0.00	\$89.83
	06/01/2025	\$61.93	\$9.90	\$19.50	\$0.00	\$91.33
	12/01/2025	\$63.43	\$9.90	\$19.50	\$0.00	\$92.83
	06/01/2026	\$64.98	\$9.90	\$19.50	\$0.00	\$94.38
	12/01/2026	\$66.48	\$9.90	\$19.50	\$0.00	\$95.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2024	\$50.50	\$9.90	\$19.50	\$0.00	\$79.90
	06/01/2025	\$52.00	\$9.90	\$19.50	\$0.00	\$81.40
	12/01/2025	\$53.50	\$9.90	\$19.50	\$0.00	\$82.90
	06/01/2026	\$55.05	\$9.90	\$19.50	\$0.00	\$84.45
	12/01/2026	\$56.55	\$9.90	\$19.50	\$0.00	\$85.95
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2024	\$52.50	\$9.90	\$19.50	\$0.00	\$81.90
	06/01/2025	\$54.00	\$9.90	\$19.50	\$0.00	\$83.40
	12/01/2025	\$55.50	\$9.90	\$19.50	\$0.00	\$84.90
	06/01/2026	\$57.05	\$9.90	\$19.50	\$0.00	\$86.45
	12/01/2026	\$58.55	\$9.90	\$19.50	\$0.00	\$87.95
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
	01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53
VOICE-DATA-VIDEO TECHNICIAN <i>ELECTRICIANS LOCAL 96</i>	09/01/2024	\$35.29	\$13.99	\$17.57	\$0.00	\$66.85
	09/07/2025	\$36.12	\$14.98	\$17.91	\$0.00	\$69.01
	09/06/2026	\$37.04	\$15.96	\$18.27	\$0.00	\$71.27

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - VOICE-DATA-VIDEO TECHNICIAN - Local 96

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.65	\$13.99	\$4.41	\$0.00	\$36.05
2	55	\$19.41	\$13.99	\$4.46	\$0.00	\$37.86
3	60	\$21.17	\$13.99	\$17.15	\$0.00	\$52.31
4	65	\$22.94	\$13.99	\$17.20	\$0.00	\$54.13
5	70	\$24.70	\$13.99	\$17.25	\$0.00	\$55.94
6	75	\$26.47	\$13.99	\$17.30	\$0.00	\$57.76
7	80	\$28.23	\$13.99	\$17.36	\$0.00	\$59.58
8	85	\$30.00	\$13.99	\$17.41	\$0.00	\$61.40

Effective Date - 09/07/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.06	\$14.98	\$4.51	\$0.00	\$37.55
2	55	\$19.87	\$14.98	\$4.57	\$0.00	\$39.42
3	60	\$21.67	\$14.98	\$17.48	\$0.00	\$54.13
4	65	\$23.48	\$14.98	\$17.53	\$0.00	\$55.99
5	70	\$25.28	\$14.98	\$17.59	\$0.00	\$57.85
6	75	\$27.09	\$14.98	\$17.64	\$0.00	\$59.71
7	80	\$28.90	\$14.98	\$17.70	\$0.00	\$61.58
8	85	\$30.70	\$14.98	\$17.75	\$0.00	\$63.43

Notes:

Apprentice to Journeyworker Ratio:1:1

WAGON DRILL OPERATOR LABORERS - ZONE 2	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
	12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51

For apprentice rates see "Apprentice- LABORER"

WAGON DRILL OPERATOR (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS & GASFITTERS LOCAL 12</i>	03/02/2025	\$69.84	\$14.32	\$20.31	\$0.00	\$104.47
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						

Additional Apprentice Information:

All apprentices must be registered with the Division of Apprenticeship Training (DAS) in accordance with M.G.L. c. 23, §§ 11E-11L. Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the hourly prevailing wage rate established by the Commissioner under the provisions of M.G.L. c. 149, §§ 26-27D. Apprentice ratios are established by DAS pursuant to M.G.L. c. 23, §§ 11E-11L. Ratios are expressed as the allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified. The ratios listed herein have been taken from relevant private collective bargaining agreements (CBAs) and are provided for illustrative purposes only. They have not been independently verified as being accurate or continuing to be accurate. Parties having questions regarding what ratio to use should contact DAS.