

PROJECT MANUAL

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF FISH AND GAME
DIVISION OF FISHERIES AND WILDLIFE
WAYNE F. MACCALLUM
DIRECTOR



SUNDERLAND STATE FISH HATCHERY OFFICE BUILDING
FOUNDATION WALL REPAIR PROJECT NO. DFW_2015_009

PROJECT NO: DFW_2015_009

LOCATION: 559 AMHERST RD (RTE 116), SUNDERLAND, MASSACHUSETTS
01375

AWARDING AUTHORITY:

DIVISION OF FISHERIES AND WILDLIFE
251 CAUSEWAY STREET, 4TH FLOOR, SUITE 400
BOSTON, MA 02114
Phone: (617) 626-1590
FAX: (617) 626-1517

DATE: January 14, 2015

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PUBLIC NOTIFICATION

The Commonwealth of Massachusetts: Notice to Contractors

The *Commonwealth of Massachusetts*, Department of Fish and Game, **DIVISION OF FISHERIES AND WILDLIFE** (the Awarding Authority), invites sealed bids from contractors for the **SUNDERLAND STATE FISH HATCHERY OFFICE BUILDING FOUNDATION WALL REPAIR PROJECT NO. DFW_2015_009** in accordance with the documents prepared by the *Commonwealth of Massachusetts*, Division of Fisheries and Wildlife (Owner).

The Project consists of: **Complete and functional removal/construction of reinforced CMU foundation walls, pressure treated wooden sills, windows/doors, interior slabs-on-grade, exterior asphalt pavements and concrete sidewalks/pads, excavation/backfill/compaction, stone retaining wall, traffic maintenance, sedimentation controls, clean-up, other ceiling/wall finish removals, selective wall demolition etc. in accordance with prepared Specifications. Contractor may not begin construction until April 27, 2015. All work must be completed on or before June 20, 2015.**

Bids are subject to provisions of M.G.L. Chapter 30, Section 39M and Chapter 149, Sections 44A to 44J, inclusive. In accordance with the 2004 Massachusetts Construction Reform Law, filed sub-bids and DCAM certification is not required for this project. This contract is subject to all State Laws and Regulations concerning Minority Business Enterprises including Executive Order 237. The right is reserved to waive any informality in or reject any or all proposals. Minimum wage rates for this project have been predetermined by M.G.L. under Chapter 149, Section 26 to 27D, inclusive. **Filed Sub-Bids are not required for this project.** The estimated project value is (\$75,000.00).

There will be a mandatory pre-bid meeting for all interested contractors on January 21, 2015 at 10 a.m. at Sunderland State Fish Hatchery, 559 Amherst Road (Route 116), Sunderland, MA 01375. Bidders who do not attend the pre-bid meeting will not be eligible. Project documents will be available starting January 14th by contacting Lori Cookman (lori.cookman@state.ma.us) at the Division of Fisheries and Wildlife, Field Headquarters, 1 Rabbit Hill Road, Westborough, MA 01581 or the Division's website www.mass.gov/dfw/contracts . There are no fees for project documents.

Sealed general bids on the forms furnished by the Division in the bid package will be received at the **Division of Fisheries and Wildlife, Field Headquarters, 1 Rabbit Hill Road, Westborough, MA 01581** until **11:00 a.m., Wednesday, February 4th, 2015** and publicly opened, forthwith. Mailed bids should be sent to the Division of Fisheries and Wildlife and received no later than the date and time specified above.

By: Wayne F. MacCallum, Director, *Commonwealth of Massachusetts*, Division of Fisheries and Wildlife

SECTION 00200

INSTRUCTIONS TO BIDDERS

ARTICLE 1 - BIDDER'S REPRESENTATION

- 1.1** Each General Bidder or Sub-bidder (hereinafter called the "**Bidder**") by making a bid or sub-bid (hereinafter called "**bid**") represents that
 1. The Bidder has read and understands the Contract Documents and the bid is made in accordance therewith.
 2. The Bidder has visited the site and is familiar with the local conditions under which the Work has to be performed.
- 1.2** Failure to so examine the Contract Documents and site will not relieve any Bidder from any obligation under the bid as submitted.

ARTICLE 2 - GENERAL BIDDER'S AND FILED SUB-BIDDER'S CERTIFICATION

- 2.1** DCAM certification is not required for projects estimated to cost less than \$100,000
- 2.2** There are no filed sub-bids for this project.
- 2.3** **Be advised that Massachusetts law requires all employees who work on Massachusetts public works construction sites must have no less than 10 hours of OSHA-approved safety and health training. See Chapter 306 of the Acts of 2004, which became effective July 1, 2006.**
 1. This requirement applies to any contract awarded on or after July 1, 2006.
 2. This law directs the Massachusetts Attorney General to restrain the award of construction contracts to any contractor who is in violation to this requirement and to restrain the performance of these contracts by non-complying contractors.
 3. The Contractor and all subcontractors on this project will be required to provide certification of this compliance with this requirement in accordance with the provisions of Section 01100 of these Contract Documents. Non-compliance with this new Massachusetts Law will disqualify you from bidding on public contracts.

ARTICLE 3 - MBE AND WBE PARTICIPATION

- 3.1 Refer to the Advertisement for applicability of Article 3.

ARTICLE 4 - REQUESTS FOR INTERPRETATION

- 4.1** Bidders shall promptly notify the Engineer of any ambiguity, inconsistency, or error which they may discover upon examination of the Contract Documents, the site, and local conditions.
- 4.2** Bidders requiring clarification or interpretation of the Contract Documents shall make a written request to the Engineer. The Engineer will answer such requests if received seven (7) calendar days before the date for receipt of the bids
- 4.3** Interpretation, correction, or change in the Contract Documents will be made by written Addendum which will become part of the Contract Documents. Neither the Department, Awarding Authority nor the Engineer will be held accountable for any oral interpretations, corrections, or changes.
- 4.4** Addenda will be mailed by the Project Manager by U.S Postal Service, certificate of mailing, to every individual or firm on record as having taken a set of Contract Documents.
- 4.5** Copies of addenda will be made available for inspection at the locations listed in the Advertisement where Contract Documents are on file.

ARTICLE 5 - PREPARATION AND SUBMISSION OF BIDS

5.1 Forms and Bid Preparation

Bids shall be submitted on the "**Form for General Bid**" or the "**Form for Sub-Bid**", as appropriate, furnished at no cost by the Awarding Authority.

- 5.1.1 All entries on the bid form shall be made by typewriter or in ink.
- 5.1.2 Sums shall be expressed in both words and figures in the space indicated on the bid form. Where there is a discrepancy between the bid sum expressed in words and the bid sum expressed in figures, the words shall control.

5.2 Bid Deposits shall be:

- 5.2.1 at least five percent (5%) of the greatest possible bid amount, considering all alternates;
- 5.2.2 made payable to the Commonwealth of Massachusetts, **DIVISION OF FISHERIES AND WILDLIFE;**
- 5.2.3 and conditioned upon faithful performance by the principal of the agreements contained in the bid.

5.3 Delivery of Filed Sub-Bids – None Required

5.4 Delivery of General Bids

Three (3) copies of the General Bids, including the bid deposit, shall be enclosed in a sealed envelope with the following plainly marked on the outside:

Sealed Bid For:

**“Division of Fisheries & Wildlife
DFW-2015-009
Sunderland State Fish Hatchery
Office Building Foundation Wall Repair Project,
Sunderland, MA.”
Bidder's Name, Business Address, and Phone Number**

- 5.4.1 Date and time for receipt of bids is set forth in the Advertisement.
- 5.4.2 Timely delivery of a bid to the location designated in the Advertisement shall be the full responsibility of the Bidder.

5.5 Sub-Trade Solicitations – None Required

ARTICLE 6 - ALTERNATES

- 6.1 Each General Bidder shall acknowledge Alternates on the Form for General Bid by entering the dollar amount of addition or subtraction necessitated by each Alternate.
- 6.2 In the event an Alternate does not involve a change in the amount of the base bid, the Bidder shall so indicate by writing **"No Change"**, or **"N/C"** or **"0"** in the space provided for that Alternate.
- 6.3 Sub-bidders shall enter on the Form for Sub-bid the amount of addition or subtraction necessitated by each Alternate which pertains to the work of that trade. If an Alternate does not involve a change in the bid amount so indicate by writing **"No Change"**, **"N/C"** or **"0"**.

If the alternate does not affect your category of work so indicate by writing **"N/A"**.
- 6.4 General Bidders shall enter on the Form for General Bid a single amount for each Alternate which shall consist of the Sub-bidders' amounts and the amount for work performed by the General Contractor.
- 6.5 The low Bidder will be determined on the basis of the sum of the base bid and the accepted alternates.

ARTICLE 7 - WITHDRAWAL OF BIDS

7.1 Before Opening of Bids

- 7.1.1 Any bid may be withdrawn prior to the time designated for receipt of bids upon written request. Withdrawal of bids must be confirmed over the Bidder's signature by written notice post-marked or sent by facsimile on or before the date and time set for receipt of bids.
- 7.1.2 Withdrawn bids may be resubmitted up to the time designated for the receipt of bids.

7.2 After Opening of Bids

Bidders may withdraw a bid, without penalty, any time up to the time of Award as defined in paragraph 8.1, and upon demonstrating, to the satisfaction of the Awarding Authority, that a bona fide clerical error was made during the preparation of the bid. Failure to conclusively demonstrate a bona fide clerical error may result in forfeiture of the bid deposit.

- 7.3** In the event of a general bid withdrawal after opening of bids, the Awarding Authority shall consider the bid from next lowest eligible and responsible bidder.

ARTICLE 8 - CONTRACT AWARD

- 8.1** Award means both the determination and selection of the lowest, responsible and eligible bidder, by the Awarding Authority.
- 8.2** The Awarding Authority will award the contract to the lowest responsible and eligible bidder within thirty days, Saturdays, Sundays, and legal holidays excluded after the opening of bids in accordance with M.G.L c.149 §44A.
- 8.3** The Contract will be awarded to the lowest responsible and eligible Bidder, except in the event of substitution as provided under M.G.L. c.149 §§44E and 44F, in which cases the procedure as required by said sections shall govern the award of the Contract.
- 8.4** The award of this Contract is subject to the approval of the Director of the Division of Fisheries and Wildlife (DFW). Contracts without DFW approval shall not be considered valid.
- 8.5** The Awarding Authority reserves the right to waive any informalities in or to reject any or all Bids if it be in the public interest to do so.
- 8.6** As used herein, the term "lowest responsible and eligible bidder" shall mean the General Bidder whose bid is the lowest of those Bidders demonstrably possessing the skill, ability, and integrity necessary for the faithful performance of the work, and who meets the requirements for Bidders set forth in M.G.L. c.149 §44A-J and is not debarred from bidding under M.G.L. c.149 §44C; and who shall certify that they are able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work.

ARTICLE 9 - FORMS REQUIRED FOR CONTRACT APPROVAL

- 9.1** Upon Award, the General Bidder shall complete the following forms to ensure prompt contract validation. These forms will be provided to the selected General Bidder by DFW. Submit (3) originals of each.
- 9.2** Owner/Contractor Agreement and Form of Corporate Vote.
- 9.3** Form of Contractor's Equal Employment Certification in accordance with Article 14 of the General Conditions.
- 9.4** Form of Sub-Contractor's Equal Employment Certification in accordance with Article 14 of the General Conditions.
- 9.5** Form of Performance Bond and Form of Payment Bond must be submitted by the General Contractor on the DFG's form, in accordance with Article 18 of the General Conditions. The dates on the bonds must coincide with the contract date, and a current Power-of-Attorney must be attached to each bond.
- 9.6** Performance and Payment Bonds must also be submitted for all filed subcontractors, if required by the General Bidder on its Form for General Bid, in the total amount of the subcontract payable to the General Contractor.
- 9.7** Insurance Certificates for the General Contractor and all filed subcontractors are required and must be submitted in accordance with Article 16 of the General Conditions.
- 9.8** General Contractors must indicate on special perils insurance or installation floater if stored materials are covered.

ARTICLE 10 - CONTRACT VALIDATION

- 10.1** The Owner-Contractor Agreement shall not be valid until signed by the Director of the Division of Fisheries and Wildlife or his designee.
- 10.2** The Notice to Proceed for construction shall not be issued until the Owner/Contractor Agreement has been validated by the Director of DFW or his designee.
- 10.3** Incomplete or unacceptable submissions of forms required by paragraphs 9.2 - 9.7 will delay the validation of the Owner/Contractor Agreement by Division of Fisheries and Wildlife.

END OF SECTION
Section 00400
BID PROPOSAL FORM

**DFW_2015_009 Sunderland State Fish Hatchery Office Building
Foundation Repair Project**

Project Location: Massachusetts Division of Fisheries and Wildlife
 Sunderland State Fish Hatchery
 559 Amherst Road (Route 116), Sunderland, MA

By signing below, the bidder certifies that he/she is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work and that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee.

The undersigned further certifies under the 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 subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

In addition, the bidder certifies that he/she has carefully examined the location of the proposed work, the proposed form of contract, the standard specifications and plans therein referred to and the Special Provisions hereto annexed; and he proposes and agrees, if this proposal is accepted, that he will contract with the Party of the First Part, in the form of the contract referred to herein and to be annexed hereto, to provide all necessary machinery, tools, apparatus and other means of construction and to do all the work and furnish all the materials specified in the contract, in the manner and time therein prescribed, and according to the requirements of the Chief Fiscal Officer as therein set forth, and that he will take in payment therefore the following unit prices, to wit:

1 Job RFR ID# DFW-2015-009

Base Bid (refer to Project Manual General Requirements and Technical Specifications below):

- **Furnish all labor, materials, equipment and appurtenances necessary for the complete and functional selective demolition and re-construction/replacement of reinforced CMU foundation walls, pressure treated wooden sills, one exterior window and one exterior door, interior slab-on-grade, exterior asphalt pavements and concrete sidewalks/pads, excavation/backfill/compaction, stone retaining wall and stairs, traffic maintenance, sedimentation controls, clean-up, other ceiling/wall finish removals within the main basement room**
- **Backfill, compaction and installation of soil/subbase materials behind new foundation/retaining walls and below all pavements/sidewalks/pads/slabs as required, installation of reinforced concrete slabs-on-grade or asphalt pavement within removed areas, and restriping of parking space lines as required**
- **Contractor may not begin construction until April 27, 2015; project must be completed on or before June 20, 2015**

Total Base Bid Offer: \$ _____

Base Bid Offer Written in Words

For Alternate Add #1: For providing and complete demolition down to building framing of basement freezer rooms (indicated on plans) directly adjacent to main basement room, including ceiling/wall finishes, etc. Bid price shall include proper disposal of all materials that result from the demolition.

Add \$ _____

Alternate #1 Written in Words

For Alternate Add #2: For providing and complete installation of one additional window, as specified on plans, in the main basement room.

Add \$ _____

Alternate #2 Written in Words

NOTE: BIDDER MUST SUBMIT A BID DEPOSIT IN THE AMOUNT OF 5% OF THE TOTAL BID PRICE (base + alt. #1+ alt.#2) PAYABLE TO THE DIVISION OF FISHERIES AND WILDLIFE, IN THE FORM OF A BID BOND, CASH, CERTIFIED CHECK, OR TREASURER'S OR CASHIER'S CHECK ISSUED BY A RESPONSIBLE BANK OR TRUST COMPANY WITH THIS BID PROPOSAL FORM

The above offer is to include and cover the furnishing of all materials, except as herein otherwise specified, the performing of all the labor, requisite or proper, and the providing of all necessary machinery, tools, apparatus and other means of construction, and the doing of all the above mentioned work in the manner set forth, described and shown in the specifications for the work and in the form of contract, and the completion thereof by

_____ (enter date work to be completed by).

Full name and address of individual or concern submitting this bid:

Signed by _____ Title _____

Notice: Bid should be signed in ink by a person having proper legal authority, and the person's title should be given, such as "owner" in the case of an individual, "partner" in the case of a general partnership, "president," "treasurer" or other authorizing officer in the case of a corporation.

- If the bidder is an individual or individuals doing business as a firm give the full name and address of each individual:

Bidder's Information

Name (printed)		Date	
Company		Phone	
Street Address		Email	
City, State, Zip Code			

- If the bidder is a corporation, give the State in which incorporated. If bid is submitted by joint ventures, this should be stated here: _____ and if any of the joint ventures is a corporation, a copy of the vote of the corporation authorizing the joint venture should be attached hereto.

DFW_2015_009: List of values for Sunderland State Fish Hatchery Office Building Foundation Repair Project. Bidders must complete and submit this list of values for a complete bid.

Construction Line Item	Lump Sum Cost(\$)
Interior demolition/removal – Main Basement Room	
Equipment relocation (as required)	
Exterior excavation and removal, exterior CMU wall demolition, asphalt sawcutting, excavation and removal, sidewalk/pad/stair removal	
Interior slab sawcutting, excavation and removal, shoring and bracing	
New CMU masonry wall, reinforcing, and grout, along with associated concrete footing and epoxy dowels	
New door, new window, steel lintels	
New slab-on-grade construction, new interior slab-on-grade backfill	
New exterior foundation backfill, dry stone retaining wall and backfill, concrete retaining wall cap	
New retaining wall railing	
Asphalt pavement subbase, binder & top course, tack coat, striping	
Erosion control barriers	
Sidewalk/pad subbase, concrete/pad sidewalk	
New wood PT sill plates, masonry sill plate anchors, sill seal	
Damp proofing	
Alternate 1: Remaining interior demolition/removals	
Alternate 2: New additional window	

1.0 GENERAL PROVISIONS

1.1 Scope of the Work. The Work comprises the completed project described in the Contract Documents and includes all labor, professional services, transportation, tools, materials, supplies, equipment, permits, approvals, documents, calculations, submittals, and certificates necessary to develop, perform, construct and complete the project in accordance with all applicable laws, ordinances, and regulations, and in accordance with the Contract Documents.

1.2 Interpretation. The Plans and Specifications and other Contract Documents are to be considered together and are intended to be mutually complementary, so that any work shown on the Plans though not specified in the Specifications, and any work specified in the Specifications though not shown on the Plans, is part of the Work to be performed by the Contractor. Capitalized terms not otherwise defined herein shall have the meanings assigned to them in the Owner-Contractor Agreement.

1.3 Administrator. The term "Administrator" means the person appointed by the Awarding Authority to administer this Contract. The Contractor shall address mail to the Administrator c/o the Awarding Authority.

1.4 Written Authorization. Actions taken, and approvals and decisions made by the Awarding Authority under this Contract require the prior approval and signature of the Administrator. These include, but are not limited to, the following: changes in the Contract Price, time for completion, or any other provision of this Contract; written orders, notices, and approvals given by the Awarding Authority pursuant to the Contract Documents or pursuant to any laws applicable to this Contract, including approval of "or equal" submissions; issuance of stop work orders; approval of Contractor's applications for payment; and termination of the Contract. Work undertaken by the Contractor not authorized by the Administrator's signature prior to the start of such work shall be considered unauthorized work and shall not entitle the Contractor to any extra payment. The Contractor shall perform, at its own expense, corrective measures required by the Awarding Authority due to any failure to obtain the prior approval of the Administrator for any item of work.

1.3 Contractor's General Duties. The Contractor shall perform the Work in a competent manner in accordance with the Contract Documents and all applicable laws. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures, and coordination of all portions of the Work under this Contract. The Contractor shall provide and perform for the Contract Price all of the duties and obligations set forth in the Contract Documents. Except as otherwise specified in this Contract, it is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable Laws. However, if the Contractor observes that portions of the Contract Documents are at variance with legal requirements, the Contractor shall promptly notify the Awarding Authority of that fact in writing. If the Contractor performs Work knowing it to be contrary to legal requirements, the Contractor shall be liable for all damages caused thereby, including the cost of correcting the Work.

1.4 Sales Tax Exemption and Other Taxes. To the extent that materials and supplies are used or incorporated in the performance of this Contract, the Contractor is considered an exempt purchaser under the Massachusetts Sales Act, Chapter 14 of the Acts of 1966. The Contractor shall pay all taxes and tariffs of any sort related to the Work, subject to the applicable exemptions.

1.5 Permits, Fees and Notices. The Contractor shall secure and pay for all permits and governmental fees, licenses, and inspections necessary for proper execution and

completion of the Work. The Contractor shall coordinate all efforts required to obtain these permits unless otherwise directed in writing by the Awarding Authority. The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, codes, and lawful orders of public authorities bearing on the performance of the Work.

1.6 Safety Requirements. The Contractor shall comply with all Federal, State, and local safety laws and regulations applicable to the Work.

1.7 Minimum Wage Rates. The Contractor shall comply with M.G.L. c. 149, §§26- 27H. The wage schedule found in Exhibit A to the Instructions to Bidders lists the minimum wage rates that must be paid to all workers employed in the Work throughout the term of this Contract, subject to the exceptions provided in M.G.L. c.149, §§ 26-27H.. The Awarding Authority is not responsible for any errors, omissions, or misprints in the said schedule. The Contractor shall not have any claim for extra compensation from the Awarding Authority arising from the fact that the actual wages paid to workers employed in the Work exceed the rates listed on the schedule or as otherwise provided by law. The Contractor shall cause a copy of the schedule to be posted in a conspicuous place at the Site during the term of the Contract. If reserve police officers are employed by the Contractor, they shall be paid the prevailing wage of regular police officers. (See M.G.L. c.149, §34B).

1.8 Corporate Disclosures. The Contractor, if a foreign corporation, shall comply with M.G.L. c. 181, s.3 and s. 5, and M.G.L. c. 30, s.39L.

1.9 Safety Requirements; OSHA Training[M.G.L. c. 30, s. 39S]. The Contractor shall comply and shall cause all subcontractors and persons employed on the Work to comply with all applicable safety requirements. By executing this contract the Contractor hereby certifies that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that 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. Any employee found on a worksite subject to this section without documentation of successful completion of 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 shall be subject to immediate removal.

1.10 Payroll Records and Statement of Compliance. The Contractor shall comply and shall cause its subcontractors to comply with Massachusetts General Law c. 149, s. 27B, which requires that a true and accurate record be kept of all persons employed on the a project for which the prevailing wage rates have been provided. The Contractor and all Subcontractors shall keep these records and preserve them for a period of six years from the date of completion of the Contract. Such records shall be open to inspection by any authorized representative of the Awarding Authority or the Owner at any reasonable time, and as often as may be necessary. The Contractor shall, and shall cause its subcontractors to, submit weekly copies of their weekly payroll records to the Awarding Authority. In addition, the Contractor and each Subcontractor shall furnish to the Executive Department of Labor within fifteen days after completion of its portion of the Work a signed statement in the form required by the Awarding Authority.

1.11 Workforce Qualifications. The Contractor shall: (i) employ competent workers; (ii) enforce strict discipline and good order among the Contractor's

employees and other persons carrying out the Work; (iii) not permit employment of unfit persons or persons not skilled in tasks assigned to them. Whenever the Administrator shall notify the Contractor in writing that any worker is, in the Administrator's opinion, incompetent, unfaithful, disorderly, or otherwise unsatisfactory, such employee shall be discharged from the Work and shall not again be employed on the Work except with the consent of the Administrator.

1.12 Affirmative Action, Non-Discrimination in Hiring and Employment.

Pursuant to Executive Order #478, by signing this Contract the Contractor hereby certifies under the pains and penalties of perjury that the Contractor currently complies with and will continue to comply with all federal and state laws, rules and regulations promoting fair employment practices or prohibiting employment discrimination and unfair labor practices and shall not discriminate in the hiring of any applicant for employment nor shall any qualified employee be demoted, discharged or otherwise subject to discrimination in the tenure, position, promotional opportunities, wages, benefits or terms and conditions of their employment because of race, color, national origin, ancestry, age, sex, religion, disability, handicap, sexual orientation or for exercising any rights afforded by law.

1.13 Veterans Preference. In the employment of mechanics and apprentices, teamsters, chauffeurs, and laborers in the performance of Work in the Commonwealth, preference shall first be given to citizens of the Commonwealth who have been residents of the Commonwealth for at least six months at the commencement of their employment and who are veterans as defined M.G.L. c.4, s.7 (34), and who are qualified to perform the work to which the employment relates and, within such preference, preference shall be given to service-disabled veterans; and secondly, to citizens of the Commonwealth generally who have been residents of the Commonwealth for at least six months at the commencement of their employment, and if they cannot be obtained in sufficient numbers, then to citizens of the United States.

1.14 Employment Eligibility Verification Requirements [8 U.S.C., ss. 1324a, 1324b; M.G.L. c. 149, s. 19C; Executive Order No. 481].

The Contractor hereby certifies under pains and penalties of perjury as a condition of receiving this Contract, that it shall not knowingly use undocumented workers in connection with the performance of the Work and that, pursuant to the requirements of federal law, the Contractor shall verify the immigration status of all workers employed in connection with the Work without engaging in unlawful discrimination, and that Contractor shall not knowingly or recklessly alter, falsify, or knowingly or recklessly accept altered or falsified documents of any worker. The Contractor shall cause all subcontractors to comply with this provision. The Contractor shall comply with Federal Department of Homeland Security Requirements in hiring any and all "employees" to be employed on the Work who are required to be listed in the certified payroll reports for the Work. Without limitation, such requirements shall include the good faith completion of the Federal Department of Homeland Security I-9 process by the Contractor for each of its employees. The Contractor shall execute a Certificate of Compliance with Employment Eligibility Verification Requirements (I-9 Certificate) simultaneously with the execution of this Contract. The contractor shall require each of its subcontractors and sub subcontractors to execute and provide to the Contractor an I-9 Certificate with the execution of each subcontract, and the Contractor shall immediately provide a copy to the Awarding Authority. The Contractor shall certify in each certified payroll report submitted to the Awarding Authority that the Form I-9 process was faithfully completed for all employees listed on the payroll report. Violation of this Section shall constitute a material breach of this Contract, subjecting the Contractor to sanctions including but

not limited to monetary penalties, withholding of payments, contract suspension, or termination.

1.15 Weekly or Biweekly wage payments [M.G.L. c. 149, s. 148] The Contractor shall comply with, and shall cause its Subcontractors to comply with M.G.L. c. 149, s. 148 which requires the weekly or biweekly payment of employees within six days of the end of the pay period during which wages were earned if employed for five or six days of a calendar week, and within other periods of time under certain circumstances as set forth therein.

1.16 Anti-Boycott Covenant [Executive Order #130]. The Contractor warrants that during the time this Contract is in effect, neither it or any affiliated company, as hereafter defined, participates in or cooperates with an international boycott, as defined in Section 999(b) (3) and (4) of the Internal Revenue Code of 1954, as amended, or engages in conduct declared to be unlawful by M.G.L. c. 151E, s. 2. If there shall be a breach in the warranty, representation or agreement contained in this paragraph, then without limiting such other rights as it may have the Awarding Authority shall be entitled to rescind this contract. As used herein, an affiliated company shall be any business entity of which at least 51% of the ownership interests are directly or indirectly owned by the Contractor or by a person or persons or business entity or entities directly or indirectly owning at least 51% of the Ownership interests of the Contractor; or which directly or indirectly owns at least 51% of the Ownership interests of the Contractor.

1.17 Labor Harmony [M.G.L. c. 30, s. 39S]. By executing this contract the Contractor hereby certifies that (1) that Contractor is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work. The Contractor shall procure materials from such sources and shall manage its own forces and the forces of its Subcontractors and any sub-subcontractors in such a manner as will result in harmonious labor relations on the site. The Contractor shall cause persons to be employed in the Work who will work in harmony with others so employed. Should the Work be stopped or materially delayed in the Awarding Authority's reasonable judgment due to a labor dispute, the Awarding Authority shall have the right to require the Contractor to employ substitutes acceptable to the Awarding Authority.

1.18 Risk of Loss. The Contractor shall bear the risk of loss with respect to any of its or its agents', employees' or subcontractors' vehicles, equipment or tools brought onto or left at the worksite and for any materials stored at the worksite.

1.19 Northern Ireland Certification [M.G.L. c. 7, s. 22C]. The Contractor certifies that it does not employ ten or more employees in an office or other facility in Northern Ireland and if the Contractor employs ten or more employees in an office or other facility located in Northern Ireland the Contractor certifies that it does not discriminate in employment, compensation, or the terms, conditions and privileges of employment on account of religious or political belief; and it promotes religious tolerance within the work place, and the eradication of any manifestations of religious and other illegal discrimination; and the Contractor is not engaged in the manufacture, distribution or sale of firearms, munitions, including rubber or plastic bullets, tear gas, armored vehicles or military aircraft for use or deployment in any activity in Northern Ireland.

1.20 Energy Efficiency. The Contractor commits to meet the minimum energy performance standards required pursuant to Executive Order # 484. If the Contract is for a project over 20,000 square feet, it must meet the Mass. LEED Plus building standard including: 1) certification by the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) program; 2) energy performance 20%

better than the Massachusetts Energy Code; 3) independent 3rd party commissioning; 4) reduction of outdoor water consumption by 50% and indoor water consumption by 20% relative to standard baseline projections; and 5) conformance with at least 1 of 4 identified smart growth criteria.

If the Contract is for a project under 20,000 square feet, it must meet the minimum energy performance standards established by the Commonwealth of Massachusetts Sustainable Design Roundtable.

2.0 MATERIALS AND EQUIPMENT WARRANTY

Materials and equipment to be installed as part of the Work (both or either of which are hereinafter referred to as "materials") shall be new, unused, of recent manufacture, assembled, and used in accordance with the best construction practices. The Contractor shall inform itself as to, and shall comply with, the provisions of M.G.L. c. 7, s. 23A, as amended, and shall abide by the same and all applicable rules, regulations and orders made thereunder in relation to the purchase of supplies and materials in the execution of the Work, including the provisions of M.G.L. c.7, s. 22, paragraph 17 which provides that there be *"a preference in the purchase of supplies and materials, other considerations being equal, in favor, first, of supplies and materials manufactured and sold within the Commonwealth, and, second, of supplies and materials manufactured and sold elsewhere within the United States."*

3.0 PROSECUTION OF THE WORK -- LIQUIDATED DAMAGES

3.1. Beginning, Progress Schedule. The Contract time shall commence upon the date specified in the Notice to Proceed executed by the Administrator and delivered to the Contractor after the execution of this Contract. The Contractor shall begin Work at the Site within ten days of said date unless otherwise ordered in writing by the Awarding Authority. Prior to commencing the Work, the Contractor shall meet with representatives of the Awarding Authority to discuss the quality assurance program, safety program, labor provisions, progress schedule, schedule of values, and other Contract procedures. Upon Approval by the Administrator, the progress schedule shall constitute the progress schedule for the Work. Upon approval by the Administrator, the schedule of values shall be the basis for payment for the Work. The Contractor shall at the end of each month, or more often if required, furnish to the Awarding Authority a schedule meeting the requirements of the Specifications showing the actual progress of the parts of the Work in comparison with the approved progress schedule.

3.2 Time for Completion of Work. Time is of the essence of this Contract. The Work shall be completed within the time specified in Clause 2 of the Owner - Contractor Agreement subject only to extensions specifically permitted in accordance with the terms of this Contract.

3.3 Definition of "Substantial Completion." For the purposes of this Contract the term "Substantial Completion" shall occur when (1) the Contractor fully completes the Work or substantially completes the Work so that the value of the Work remaining to be done is, in the estimate of the Awarding Authority, less than one percent of the original Contract price, or (2) the Contractor substantially completes the work and the Awarding Authority takes possession for occupancy, whichever occurs first. For the purposes of the preceding sentences the term "substantially completes" means that the work required by the Contract has been completed except for minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the Work.

3.4 Failure to Complete Work on Time - Liquidated Damages.

The Awarding Authority has determined that its damages as a result of Contractor's failure to complete the Work to Substantial Completion within the Contract time will be difficult or impracticable to ascertain. Accordingly, the Contractor shall pay to the Awarding Authority the sum designated as liquidated damages in the Contract for each and every calendar day that the Contractor is in default in completing the Work to Substantial Completion. Such moneys shall be paid as liquidated damages, and not as a penalty, to cover losses and expenses to the Awarding Authority resulting solely from the fact that the Work is not completed on time. Liquidated damages or a portion thereof may be waived by the Awarding Authority if the Contractor submits evidence satisfactory to the Awarding Authority that the delay was caused solely by conditions beyond the control of the Contractor and that the Awarding Authority has not suffered any damages as a result of said delay.

3.5 Collection of Liquidated Damages. The Awarding Authority may recover liquidated damages by deducting the amount thereof from any moneys due or that might become due the Contractor, and if such moneys shall be insufficient to cover the liquidated damages, then the Contractor or the Surety shall pay to the Awarding Authority the amount due.

3.6 Awarding Authority's Approvals and Interpretations. Decisions by the Awarding Authority regarding interpretation of the specifications, approval of equipment, material or any other approval, or progress of the Work, shall be made promptly and, in any event, no later than thirty days after the Contractor's written submission for decision; but if such decision requires extended investigation and study, the Awarding Authority shall, within thirty days after the receipt of the submission, give the Contractor written notice of the reasons why the decision cannot be made within the thirty day period and the date by which the decision will be made.

3.7 Extension for Delays Caused by Awarding Authority. The only circumstances under which the Contract Price shall be increased due to delays caused by the Awarding Authority are those specified in M.G.L. c. 30, §390 appearing in Appendix A to these General Conditions of the Contract. In all other cases the Contractor shall be entitled neither to increase the Contract Price nor to receive damages on account of any hindrances or delays, avoidable or unavoidable, but if the delay is caused by the Awarding Authority, the Contractor shall be entitled to an extension of time to the extent provided in M.G.L. c. 30, §390. The Contractor must submit any claim under this paragraph to the Awarding Authority in writing as soon as practicable after the end of the Awarding Authority's suspension, delay, interruption or failure to act and, in any event, not later than the date of final payment under this Contract. Except for costs due to a suspension order, the Awarding Authority shall not approve any costs in the claim incurred more than 20 days before the Contractor notified the Awarding Authority in writing of the act or failure to act or the Awarding Authority that gave rise to the claim.

3.8 Awarding Authority's Right to Reject Defective Materials and Work. Except as otherwise provided herein, the Awarding Authority's inspection of the Work shall not relieve the Contractor of any of its responsibilities hereunder, and defective work shall be corrected. The Awarding Authority may reject unsuitable work, notwithstanding that such work and materials have been previously accepted for payment. If any part of the Work shall be found defective at any time before the final acceptance of the whole Work, the Contractor shall promptly correct such defect in a manner satisfactory to the Awarding Authority. If any material brought upon the site for use in the Work shall be rejected by the Awarding Authority as not in conformity

with the Contract Documents, the Contractor shall promptly remove such materials from the site.

3.9 Substantial Completion of the Work; Final Completion; Awarding Authority's Remedies. When the Work has reached the point of Substantial Completion as shown on Approved payment request, the Contractor shall assist the Awarding Authority in the development of a punch list identifying those items of unfinished or unacceptable Work that remain to be performed or corrected under the Contract. The Contractor shall complete the punch list items to final completion within 30 days after the Awarding Authority's approval of the punch list. At any time after the value of the Work remaining to be done is, in the estimation of the Awarding Authority, less than 1 per cent of the adjusted Contract price, or the Awarding Authority has determined that the Contractor has substantially completed the work and the Awarding Authority has taken possession for occupancy, the Awarding Authority may send to the Contractor by certified mail, return receipt requested, a complete and final list of all incomplete and unsatisfactory work items, including, for each item on the list, a good faith estimate of the fair and reasonable cost of completing such item. The Contractor shall then complete all such work items within 30 days of receipt of such list or before the Contract completion date, whichever is later. If the Contractor fails to complete all incomplete and unsatisfactory work items within 45 days after receipt of such items furnished by the Awarding Authority or before the Contract completion date, whichever is later, subsequent to an additional 14 days' written notice to the Contractor by certified mail, return receipt requested, the Awarding Authority may terminate this Contract and complete the incomplete and unsatisfactory work items and charge the cost of same to the Contractor and such termination shall be without prejudice to any other rights or remedies the Awarding Authority may have under this Contract.

4.0 CHANGES IN THE WORK

4.1 Changes within the Scope of the Work. A change order may be issued by the Awarding Authority for changes in the Work within the scope of the Contract, including but not limited to, changes in: (1) the Plans and Specifications; (2) the method or manner of performance of the Work; (3) the Awarding Authority-furnished facilities, equipment, materials, services, or Site; or (4) the schedule for performance of the Work. The Contractor shall immediately perform any change order work that is ordered in writing by the Awarding Authority.

4.2. Request for Equitable Adjustment due to Change Order. Whenever a change order is issued by the Awarding Authority that will cause a change in the Contractor's cost or time for performance, the Contractor or the Awarding Authority may request an equitable adjustment in the Contract Price or the Contract time. A request for such an adjustment shall be in writing and shall be submitted by the party making such claim to the other party.

4.3. Latent Conditions. If, during the progress of the Work, the Contractor or the Awarding Authority discovers that the actual subsurface or latent physical conditions encountered at the Site differ substantially or materially from those indicated in the Contract Documents, then either the Contractor or the Awarding Authority may request an equitable adjustment in the Contract Price in accordance with M.G.L. c.30, §39N appearing in Appendix A attached to these General Conditions of the Contract. Likewise if the latent or subsurface physical condition causes a change in the time for performing the Work, either the Contractor or the Awarding Authority may request an equitable adjustment of the time for the performance of the Work.

4.4 Computation of Equitable Adjustments. Equitable adjustments in the Contract Price shall be determined according to one of the following methods, or a combination thereof, as determined by the Awarding Authority: (1) fixed price basis, provided that the fixed price shall be inclusive of items (a) through (e) below and shall be computed in accordance with those provisions; (2) estimated lump sum basis to be adjusted in accordance with Contract unit prices or other agreed upon unit prices provided that the unit prices shall be inclusive of all costs related to such equitable adjustment; (3) time and materials basis to be subsequently adjusted on the basis of actual costs (but subject to a predetermined "not to exceed limit") calculated as follows: (a) the direct cost (or credit) for labor at the minimum wage rates established for this Contract pursuant to M.G.L. c. 149, s 26-27H, and the direct cost for material and use of equipment; (b) plus (or minus) the cost of workmen's compensation insurance, liability Insurance, Federal Social Security and Massachusetts Unemployment Compensation, or as an alternative the Contractor may elect to use a flat 30% of the total labor rate computed in accordance with subparagraph (a) above; (c) plus an allowance equal to 20% of the amount of (a) above for overhead, superintendence and profit (said 20% allowance shall be paid to the Contractor and the Contractor and said subcontractors shall agree upon the distribution of this amount as a matter of contract between them)., (d) plus (or minus) the actual direct additional premium costs and expenses incurred as a result of collective bargaining agreements or other agreements between organized labor and employers, and plus (or minus) (e) the actual direct premium cost of payment and performance bonds required of Contractor and filed Subcontractors for this Contract. If the net change is an addition to the Contract Price, it shall include the Contractor's overhead, superintendence and profit. On any change that involves a net credit, no allowance for overhead, superintendence and profits shall be included. For any change that does not include labor performed or materials installed in the project, there will be no markup for the Contractor's overhead, superintendence, and profit, even though there may be a net increase in the Contract Price. Charges for small tools known as "tools of the trade" are not to be computed in the amount of any change in the Contract Price.

4.4 Appeal Procedure. If the Contractor disputes a change, an equitable adjustment, or a Contract interpretation by the Awarding Authority, the Contractor shall follow the procedures set forth in M.G.L. c. 30, §39Q appearing in Appendix A to these General Conditions of the Contract.

5.0 PAYMENT PROVISIONS

5.1 Applications for Periodic Payments. Once each month, on a date established at the beginning of the Work, the Contractor shall deliver to the Awarding Authority an itemized Application for Payment, supported by such data substantiating the Contractor's right to payment as the Awarding Authority may require. The application shall reflect a minimum of 5% retainage and shall be subject to, and processed in accordance with, the provisions of M.G.L. c. 30, §39K appearing in Appendix A to these General Conditions. The Contractor may include in a periodic estimate the value of materials or equipment delivered at the Site (or at some location agreed to in writing) only upon delivery to the Awarding Authority of: (1) an acceptable transfer of title on the form provided by the Awarding Authority; (2) written certification by the Contractor (or applicable subcontractor) on the form provided by the Awarding Authority that the Contractor (or the Subcontractor which executed the transfer of title) is the lawful owner and that the materials or equipment are free

from all encumbrances, accompanied by receipted invoices or other acceptable proof of prior payment for such materials; (3) a stored materials insurance binder that covers the materials for which payment is requested, that names the Owner as an insured party should the stored materials be subjected to any casualty, loss, or theft prior to their inclusion in the Work. The material(s) or equipment must, in the judgment of the Designer (1) meet the requirements of the Contract, including prior shop drawing, product data, and sample approval, (2) be ready for use, and (3) be properly stored by the Contractor and be adequately protected until incorporated into the Work. See also Article V.5.C of these General Conditions of the Contract concerning the cost of inspections.

5.2 Deductions by the Awarding Authority. The Awarding Authority may deduct from any application for a periodic payment submitted by the Contractor a retention based upon the value of its claims against the Contractor plus a retention of 5% of the approved amount of the Application for Payment and any other amounts authorized by M.G.L. c. 30, §39K.

5.3 Final Payment. Final Payment under this Contract shall be processed in accordance with the procedures set forth in M.G.L. c. 30, §39K. The acceptance by the Contractor of the last payment due under this Contract or the Contractor's execution of the Final Certificate of Completion, shall operate as a release to the Awarding Authority from all claims and liability related to this Contract.

6.0 WARRANTIES AND GUARANTEE

6.1 Warranty. The Contractor warrants to the Awarding Authority that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective.

6.2 General Guaranty. If at any time during the period of one (1) year from the date of its substantial completion, as shown on an approved payment request, the Work or any part of the Work shall in the reasonable determination of the Awarding Authority require replacing or repairing due to the fact that it is broken, defective, or otherwise does not conform to the Contract Documents, the Awarding Authority will notify the Contractor to make the required repairs or replacement. If the Contractor shall neglect to commence such repairs or replacements to the satisfaction of the Awarding Authority within ten (10) days from the date of giving or mailing such notice, then the Awarding Authority may employ other persons to make said repairs or replacements. The Contractor agrees, upon demand, to pay to the Awarding Authority all amounts which the Awarding Authority expends for such repairs or replacements. For items of work completed after substantial completion, the one-year guarantee shall commence at the time the Awarding Authority approves of the completion of such items. This one-year guarantee shall not limit any express guaranty or warranty required to be assigned to the Awarding Authority pursuant to the terms of the Plans and Specifications.

7.0 INSURANCE REQUIREMENTS

7.1 Insurance Generally.

A. The Contractor shall purchase and maintain insurance of the type and limits listed in this Article with respect to the operations as well as the completed operations of this Contract. This insurance shall be provided at the Contractor's expense and shall be in

full force and effect for the full term of the Contract or for such longer period as this Article requires.

B. All policies shall be written on an occurrence basis and be issued by companies lawfully authorized to write that type of insurance under the laws of the Commonwealth with a financial strength rating of "A-" or better as assigned by AM Best Company, or an equivalent rating assigned by a similar rating agency acceptable to the Awarding Authority, or otherwise acceptable to the Awarding Authority.

C. Contractor shall submit three originals of each certificate of insurance, acceptable to the Awarding Authority, simultaneously with the execution of this Contract. Certificates shall show each type of insurance, insurance company, policy number, amount of insurance, deductibles and/or self-insured retentions, and policy effective and expiration dates. Certificates shall show the Awarding Authority and the Owner and anyone else the Awarding Authority requests as an additional insured as to all policies of liability insurance. Certificates shall specifically note the following:

- that the General Liability policy includes contractual liability
- that the General Liability policy includes the Owner and Awarding Authority as additional insureds for ongoing operations (CG 20 10) and for completed operations (CG 37 10) or equivalent endorsements.
- that the automobile liability, umbrella liability and pollution liability policies include the Owner and Awarding Authority as additional insureds
- that the General Liability policy includes endorsement CG 24 04 or equivalent, a Waiver of Subrogation in favor of the Owner and Awarding Authority
- that the Builders' Risk or Installation Floater is on an all risk basis including earthquake and flood, and includes the Owner and Awarding Authority, contractor, subcontractors and suppliers of any tier as named insureds or loss payees as their interests may appear.
- that none of the coverages shall be cancelled, terminated, or materially modified unless and until 30 days prior notice is given in writing to the Awarding Authority.

Contractor shall submit updated certificates prior to the expiration of any of the policies referenced in the certificates so that the Awarding Authority shall at all times possess certificates indicating current coverage.

D. The Contractor shall file one certified complete copy of all policies and endorsements with the Awarding Authority within sixty days after Contract award. If the Awarding Authority or the Owner is damaged by the Contractor's failure to maintain such insurance and to comply with the terms of this Article, then the Contractor shall be responsible for all costs and damages to the Owner attributable thereto.

E. Termination, cancellation, or material modification of any insurance required by this Contract, whether by the insurer or the insured, shall not be valid unless written notice thereof is given to the Awarding Authority at least thirty days prior to the effective date thereof, which shall be expressed in said notice.

F. The Contractor is responsible for the payment of any and all deductibles under all of the insurance required below. Neither the Owner nor the Awarding Authority shall in any instance be responsible for the payment of deductibles, self-insured retentions, or any portion thereof.

7.2 Contractor's Commercial General Liability.

A. The Contractor shall purchase and maintain general liability coverage on the ISO form CG 00 01 or equivalent, including products and completed operations, on an occurrence basis. The form must be amended to state that the aggregate limit applies

on a per location/project basis. The policy shall provide the following minimum coverage to protect the Contractor from claims with respect to the operations performed by Contractor and any employee, subcontractor, or supplier, or by anyone for whose acts they may be liable unless a higher coverage is specified in Exhibit A to the Owner - Contractor Agreement, in which case the Contractor shall provide the additional coverage:

Bodily Injury &	\$1,000,000 each occurrence
Property Damage	\$2,000,000 general aggregate, per project
Products & Completed Operations	\$1,000,000 annual aggregate
Personal & Advertising Injury	\$1,000,000 each occurrence
Medical Expenses	\$10,000

B. This policy shall include coverage relating to explosion, collapse, and underground property damage.

C. This policy shall include contractual liability coverage.

D. The completed operations coverage shall be maintained for a period of three (3) years after Substantial Completion and acceptance by the Awarding Authority. The Contractor shall provide renewal certificates of insurance to the Awarding Authority as evidence that this coverage is being maintained.

E. If the Work includes work to be performed within 50 feet of a railroad, any exclusion for liability assumed under contract for work within 50 feet of a railroad shall be deleted.

F. This policy shall include the Owner and Awarding Authority and anyone else requested by the Awarding Authority as additional insureds via endorsements CG 20 10 for ongoing operations and CG 20 37 for completed operations. This policy shall be primary and non-contributory with respect to any other insurance available to additional insureds.

G. The policy shall include endorsement CG 24 04, a Waiver of Subrogation in favor of the Awarding Authority and Owner.

7.3 Automobile Liability.

A. The Contractor shall purchase and maintain the following minimum coverage with respect to the operations of any owned, non-owned, and hired vehicles including trailers used in the performance of the work, unless a higher coverage is specified in Exhibit A to the Owner - Contractor Agreement, in which case the Contractor shall provide the additional coverage:

Bodily Injury & Property Damage	\$1,000,000 combined single limit
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B. The policy shall include a CA 99 48 Broadened Pollution Endorsement. If specified in Exhibit A. to the Owner – Contractor Agreement, the Contractor, if hauling contaminants and/or pollutants, must adhere to Sections 29 and 30 of the Motor Carrier Act of 1980, which shall include coverage Form MCS-90.

C. The policy shall name the Owner and Awarding Authority as Additional Insureds.

D. The policy shall contain a Waiver of Subrogation in favor of the Awarding Authority and Owner.

7.4 Worker's Compensation.

A. The Contractor shall provide the following coverage in accordance with M.G.L. c.149 §34A and c.152 as amended, unless a higher coverage is specified in Exhibit A to the Owner - Contractor Agreement, in which case the Contractor shall provide the higher coverage:

Worker's Compensation	Statutory limits
Employer's Liability	\$ 500,000 each accident

\$ 500,000 disease per employee
\$ 500,000 disease policy aggregate

B. If specified in Exhibit A to the Owner - Contractor Agreement the policy must be endorsed to cover United States Longshoremen & Harborworkers Act (USLHW), Maritime Liability for \$1,000,000/\$1,000,000, or Federal Employer's Liability Act liability.

C. The policy shall contain a Waiver of Subrogation in favor of the Owner and the Awarding Authority.

7.5 Contractor's Pollution Liability.

If required by Exhibit A to the Owner - Contractor Agreement, the Contractor shall purchase and maintain coverage for bodily injury and property damage resulting from liability arising out of pollution related exposures such as asbestos abatement, lead paint abatement, tank removal, removal of contaminated soil, etc. The insurance policy shall cover the liability of the Contractor during the process of removal, storage, transport and disposal of hazardous waste and contaminated soil and/or asbestos abatement. The policy shall include coverage for on-Site and off-Site bodily injury and loss of, damage to, or loss of use of property, directly or indirectly arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gas, waste materials or other irritants, contaminants or pollutants into or upon the land, the atmosphere or any water course or body of water, whether it be gradual or sudden and accidental. The policy shall also include defense and clean-up costs. The Awarding Authority and the Owner shall be named as an additional insured and coverage must be on an occurrence basis. The amount of coverage shall be \$1,000,000 per occurrence and \$3,000,000 in the aggregate unless a higher amount is specified in Exhibit A to the Owner - Contractor Agreement, in which case the Contractor shall provide the additional coverage.

7.6 Builder's Risk/ Installation Floater/Stored Materials (If required by Exhibit A to the Owner – Contractor Agreement)

A. The Contractor shall purchase and maintain coverage against loss or damage on all Work included in this Contract in an amount equal to the Contract Price. Such coverage shall be written on an all risks basis or equivalent form and shall include, without limitation, insurance against perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, terrorism ("certified" and "non-certified"), collapse, earthquake, flood (if the project is not in an "A" or a "V" flood Zone), windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss. This policy and/or installation floater shall include transportation and Stored Materials coverage in an amount equal to the value of the stored materials as required in **C.** below.

B. When Work will be completed on existing buildings owned by the Owner, the Contractor shall provide an installation floater, in the full amount of the Contract Price. Such coverage shall be written on an all risks basis or equivalent form and shall include, without limitation, insurance against perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood (if the project is not in an "A" or a "V" flood Zone), windstorm, falsework, testing and startup, temporary

buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss. This policy and/or installation floater shall include transportation and Stored Materials coverage in an amount equal to the value of the stored materials as required in C. below.

C. The Contractor shall maintain insurance on delivered and/or stored material designated to be incorporated in the Work against fire, theft or other hazards. Any loss or damage of whatever nature to such material while stored at an off Site location shall be forthwith replaced by the Contractor at no expense to the Awarding Authority.

D. The policy or policies shall specifically state that they are for the benefit of and payable to the Awarding Authority, Owner, the Contractor, and all persons furnishing labor or labor and materials for the Contract Work, as their interests may appear. The policy or policies shall list the Awarding Authority, Owner, the Contractor, and Subcontractors of any tier as named insureds.

E. Coverage shall include any costs for work performed by the Designer or any consultant as the result of a loss experienced during the term of this Contract.

F. Coverage shall include permission for temporary occupancy and a Waiver of Subrogation in favor of the Owner and Awarding Authority.

G. Coverage shall be maintained until final acceptance by the Awarding Authority of the Contract and final payment has been made.

H. A loss under the property insurance shall be adjusted by the Contractor as fiduciary and made payable to the Contractor as fiduciary for the insureds. The Contractor shall pay the subcontractors their just shares of insurance proceeds received by the Contractor and shall require subcontractors to make payments to their sub-subcontractors in similar manner.

7.7 Umbrella Coverage.

The Contractor shall provide Umbrella Coverage in form at least as broad as primary coverages required by Sections 2, 3 and 5 of this Article in the following amount unless a higher amount is specified in Exhibit A to the Owner - Contractor Agreement, in which case the Contractor shall provide the higher amount:

Limit of liability: \$1,000,000 per occurrence

7.8 Additional types of Insurance.

The Contractor shall provide such other types of insurance as may be required by Exhibit A to the Owner - Contractor Agreement.

8.0 INDEMNIFICATION

The Contractor shall indemnify, defend (with counsel subject to the supervision of the Attorney General of the Commonwealth of Massachusetts as required by M.G.L. c. 12, §3) and hold harmless the Awarding Authority and the Commonwealth and their officers, agents, divisions, agencies, employees, representatives, successors and assigns from and against all claims, damages, losses and expenses, including but not limited to court costs and attorneys' fees, arising out of or resulting from the performance of the Work, including but not limited to those arising or resulting from: labor performed or furnished and/or materials used or employed in the performance of the Work; violations by Contractor, any Subcontractor, or by any person directly or indirectly employed or used by any of them in the performance of the Work or anyone

for whose acts any of them may be liable (Contractor, subcontractor and all such persons herein collectively called "Contractor's Personnel") of any Laws; violations of any provision of this Contract by any of Contractor's Personnel; injuries to any persons or damage to any property in connection with the Work; any act, omission, or neglect of Contractor's Personnel. The Contractor shall be obligated as provided above, regardless of whether or not such claims, damages, losses and/or expenses, are caused in whole or in part by the actions or inactions of a party indemnified hereunder. In any and all claims by Contractor's Personnel against parties indemnified hereunder, the Contractor's indemnification obligation set forth above shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Article 8.

9.0 BONDS

The Contractor shall provide the Awarding Authority with a Performance Bond and a Payment or Labor and Materials Bond in the form provided by the Awarding Authority, executed by a surety company licensed by the Commonwealth of Massachusetts' Division of Insurance and whose name appears on United States Treasury Department Circular 570. Both the Performance Bond and the Payment Bonds shall be in an amount equal to the Contract Sum unless, with respect to the Payment Bond or Labor and Materials Bond a lesser amount of no less than one half the contract price is expressly specified in the Advertisement or Instructions to Bidders, or with respect to the Performance Bond no such bond is required as expressly set forth in the Advertisement or Instructions to Bidders.

10.0 TERMINATION

10.1 Termination for Cause.

The Awarding Authority may terminate this Contract for cause if it determines that any of the following circumstances have occurred:

- the Contractor is adjudged bankrupt or has made a general assignment for the benefit of its creditors;
- a receiver has been appointed of the Contractor's property;
- all or a part of the Work has been abandoned;
- the Contractor has sublet or assigned all or any portion of the Work, the Contract, or claims thereunder, without the prior written consent of the Awarding Authority, except as provided in the Contract Documents;
- the Awarding Authority has determined that the rate of progress required on the project is not being met;
- the Contractor has substantially violated any provisions of this Contract.

The Awarding Authority may complete the Work or any part thereof, and charge its expense of so completing the work or part thereof, to the Contractor. The Awarding Authority may take possession of and use any materials, machinery, implements and tools found upon the site of said Work. The Awarding Authority shall not be liable for any depreciation, loss or damage to said materials, machinery, implements or tools during said use and the Contractor shall be solely responsible for their removal from the Project site after the Awarding Authority has no further use for them.

10.2 Termination for Convenience.

(a) In the event that this Contract is terminated by the Awarding Authority prior to the completion of construction and termination is not based on a reason listed in Paragraph 10.1, the Contractor shall be compensated for its costs incurred, including reasonable costs of de-mobilization, calculated on a percent completion basis covering the period of time between the last Approved application for payment and the date of termination.

(b) Payment by the Awarding Authority pursuant to Subparagraph 10.2(a) shall be deemed to fully compensate the Contractor for all claims and expenses directly or indirectly attributable to the termination, including any claims for lost profits.

11. NON-APPROPRIATION

The Commonwealth certifies that at the time of the execution of this Contract, sufficient appropriations exist and shall be encumbered to fund the Contract Price. Payments are subject to appropriation and shall be made only for work performed in accordance with the terms of this Contract. The Contractor shall not be obligated to perform, and may not perform, work outside the duration and scope of this Contract without an appropriate amendment to this Contract, and a sufficient appropriation(s) to support such additional work. The Commonwealth may immediately terminate or suspend this Contract in the event that the appropriation(s) funding this Contract is eliminated or reduced to an amount which will be insufficient to support anticipated future obligations under this Contract.

12. RECORDS AND LAWS

The Contractor shall make, and keep for at least six years after final payment, books, records, and accounts, which in reasonable detail accurately and fairly reflect the transactions and dispositions of the Contractor. [M.G.L. c. 30, §39R(b)(1)-(2)]. Until the expiration of six years after final payment, the Office of the Inspector General, and the Commissioner of DCAM shall have the right to examine any books, documents, papers or records of the Contractor or of its subcontractors that directly pertain to, and involve transactions relating to, the Contractor or its subcontractors. [M.G.L. c. 30, §39R(b)(1)-(2)]. If this is a materials contract with a contract price of over \$100,000 the contractor shall also comply with M.G.L. c. 30, §39R(c). Furthermore, pursuant to Executive Order #195, the Governor or his designee, the secretary of administration and finance, and the state auditor or his designee shall have the right at reasonable times and upon reasonable notice to examine the books, records and other compilations of data or the Contractor which pertain to the performance and requirements of this Contract.

13. CHOICE OF LAW

This Contract shall be construed under and governed by the laws of the Commonwealth of Massachusetts. The Contractor, and the agents thereof, agree to bring any federal or state legal proceedings arising under this Contract, in which either the Commonwealth or the Awarding Authority is a party, in a court of competent jurisdiction within the Commonwealth of Massachusetts. This section shall not be construed to limit any rights a party may have to intervene in any action, in any court or wherever, pending, in which the other is a party.

14. STATUTORY PROVISIONS INCORPORATED BY REFERENCE

The statutory provisions appearing in Appendix A attached hereto are incorporated into this Contract by reference.

APPENDIX A

Statutory Provisions Incorporated by Reference

Chapter 30: Section 39N. Construction contracts; equitable adjustment in contract price for differing subsurface or latent physical conditions.

Section 39N. Every contract subject to section forty-four A of chapter one hundred and forty-nine or subject to section thirty-nine M of chapter thirty shall contain the following paragraph in its entirety and an awarding authority may adopt reasonable rules or regulations in conformity with that paragraph concerning the filing, investigation and settlement of such claims:

If, during the progress of the work, the contractor or the awarding authority discovers that the actual subsurface or latent physical conditions encountered at the site differ substantially or materially from those shown on the plans or indicated in the contract documents either the contractor or the contracting authority may request an equitable adjustment in the contract price of the contract applying to work affected by the differing site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a contractor, or upon its own initiative, the contracting authority shall make an investigation of such physical conditions, and, if they differ substantially or materially from those shown on the plans or indicated in the contract documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and contract documents and are of such a nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the contracting authority shall make an equitable adjustment in the contract price and the contract shall be modified in writing accordingly.

Chapter 30: Section 39O. Contracts for construction and materials; suspension, delay or interruption due to order of awarding authority; adjustment in contract price; required provisions.

Section 39O. Every contract subject to the provisions of section thirty-nine M of this chapter or subject to section forty-four A of chapter one hundred forty-nine shall contain the following provisions (a) and (b) in their entirety and, in the event a suspension, delay, interruption or failure to act of the awarding authority increases the cost of performance to any subcontractor, that subcontractor shall have the same rights against the general contractor for payment for an increase in the cost of his performance as provisions (a) and (b) give the general contractor against the awarding authority, but nothing in provisions (a) and (b) shall in any way change, modify or alter any other rights which the general contractor or the subcontractor may have against each other.

(a) The awarding authority may order the general contractor in writing to suspend, delay, or interrupt all or any part of the work for such period of time as it may determine to be appropriate for the convenience of the awarding authority; provided however, that if there is a suspension, delay or interruption for fifteen days or more or due to a failure of the awarding authority to act within the time specified in this contract, the awarding authority shall make an adjustment in the contract price for any increase in the cost of performance of this contract but shall not include any profit to the general contractor on such increase; and provided further, that the awarding authority shall not make any adjustment in the contract price under this provision for any suspension, delay, interruption or failure to act to the extent that such is due to any cause for which this contract provides for an equitable adjustment of the contract price under any other contract provisions.

(b) The general contractor must submit the amount of a claim under provision (a) to the awarding authority in writing as soon as practicable after the end of the suspension, delay, interruption or failure to act and, in any event, not later than the date of final payment under this contract and, except for costs due to a suspension order, the awarding authority shall not approve any costs in the claim incurred more than twenty days before the general contractor notified the awarding authority in writing of the act or failure to act involved in the claim.

Chapter 30: Section 39P. Contracts for construction and materials; decisions of awarding authority on interpretation of specifications, etc. required promptly upon submission; time limit; notice.

Section 39P. Every contract subject to section thirty-nine M of this chapter or section forty-four A of chapter one hundred forty-nine which requires the awarding authority, any official, its architect or engineer to make a decision on interpretation of the specifications, approval of equipment, material or any other approval, or progress of the work, shall require that the decision be made promptly and, in any event, no later than thirty days after the written submission for decision; but if such decision requires extended investigation and study, the awarding authority, the official, architect or engineer shall, within thirty days after the receipt of the submission, give the party making the submission written notice of the reasons why the decision cannot be made within the thirty day period and the date by which the decision will be made.

Chapter 30: Section 39Q. Contracts for capital facility construction, etc.; contents; annual claims report.

Section 39Q. (1) Every contract awarded by any state agency as defined by section thirty-nine A of chapter seven for the construction, reconstruction, alteration, remodeling, repair or demolition of any capital facility as defined by the aforesaid section thirty-nine A shall contain the following subparagraphs (a) through (d) in their entirety:

(a) Disputes regarding changes in and interpretations of the terms or scope of the contract and denials of or failures to act upon claims for payment for extra work or materials shall be resolved according to the following procedures, which shall constitute the exclusive method for resolving such disputes. Written notice of the matter in dispute shall be submitted promptly by the claimant to the chief executive official of the state agency which awarded the contract or his designee. No person or business entity having a contract with a state agency shall delay, suspend, or curtail performance under that contract as a result of any dispute subject to this section. Any disputed order, decision or action by the agency or its authorized representative shall be fully performed or complied with pending resolution of the dispute.

(b) Within thirty days of submission of the dispute to the chief executive official of the state agency or his designee, he shall issue a written decision stating the reasons therefor, and shall notify the parties of their right of appeal under this section. If the official or his designee is unable to issue a decision within thirty days, he shall notify the parties to the dispute in writing of the reasons why a decision cannot be issued within thirty days and of the date by which the decision shall issue. Failure to issue a decision within the thirty-day period or within the additional time period specified in such written notice shall be deemed to constitute a denial of the claim and shall authorize resort to the appeal procedure described below. The decision of the chief executive official or his designee shall be final and conclusive unless an appeal is taken as provided below.

(c) Within twenty-one calendar days of the receipt of a written decision or of the failure to issue a decision as stated in the preceding subparagraph, any aggrieved party may file a notice of claim for an adjudicatory hearing with the division of hearing officers or the aggrieved party may file an action directly in a court of competent jurisdiction and shall serve copies thereof upon all other parties in the form and manner prescribed by the rules governing the conduct of adjudicatory proceedings of the division of hearing officers. In the event an aggrieved party exercises his option to file an action directly in court as provided in the previous sentence, the twenty-one day period shall not apply to such filing and the period of filing such action shall be the same period otherwise applicable for filing a civil action in superior court. The appeal shall be referred to a hearing officer experienced in construction law and shall be prosecuted in accordance with the formal rules of procedure for the conduct of adjudicatory hearings of the division of hearing officers, except as provided below. The hearing officer shall issue a final decision as expeditiously as possible, but in no event more than one hundred and twenty calendar days after conclusion of the adjudicatory hearing, unless the decision is delayed by a request for extension of time for filing post-hearing briefs or other submissions assented to by all parties. Whenever, because an extension of time has been granted, the hearing officer is unable to issue a decision within one hundred and twenty days, he shall notify all parties of the reasons for the delay and the date when the decision will issue. Failure to issue a decision within the one hundred and twenty-day period or within the additional period specified in such written notice shall give the petitioner the right to pursue any legal remedies available to him without further delay.

(d) When the amount in dispute is less than ten thousand dollars, a contractor who is party to the dispute may elect to submit the appeal to a hearing officer experienced in construction law for expedited hearing in accordance with the informal rules of practice and procedure of the division of hearing officers. An expedited hearing under this subparagraph shall be available at the sole option of the contractor. The hearing officer shall issue a decision no later than sixty days following the conclusion of any hearing conducted pursuant to this subparagraph. The hearing officer's decision shall be final and conclusive, and shall not be set aside except in cases of fraud.

(2) The commissioner of administration shall require the division of hearings officers to prepare annually a report concerning the construction contract claims submitted to the division during the preceding twelve months, in such form as the commissioner shall prescribe. The report shall contain, at a minimum, the following information: the number of claims submitted; the names of all parties to each such claim; a brief description of the claim; the date of submission and of disposition of the claim; its disposition, whether by settlement, withdrawal, default or written decision; and the number of claims currently pending. The original of the report shall be submitted to the commissioner of administration by January fifteenth, and a copy shall be filed with the state librarian and shall be a public document.

Chapter 30: Section 39R. Definitions; contract provisions; management and financial statements; enforcement.

Section 39R. (a) The words defined herein shall have the meaning stated below whenever they appear in this section:

(1) "Contractor" means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded a contract pursuant to sections thirty-eight A to thirty-eight O, inclusive, of chapter seven and any contract awarded or executed pursuant to section eleven C of chapter twenty-five A, section thirty-

nine M of chapter thirty, or sections forty-four A to forty-four H, inclusive, of chapter one hundred and forty-nine, which is for an amount or estimated amount greater than one hundred thousand dollars.

(2) "Contract" means any contract awarded or executed pursuant to sections thirty-eight A %p1/2%p to thirty-eight O, inclusive, of chapter seven and any contract awarded or executed pursuant to section eleven C of chapter twenty-five A, section thirty-nine M of chapter thirty, or sections forty-four A through forty-four H, inclusive, of chapter one hundred and forty-nine, which is for amount or estimated amount greater than one hundred thousand dollars.

(3) "Records" means books of original entry, accounts, checks, bank statements and all other banking documents, correspondence, memoranda, invoices, computer printouts, tapes, discs, papers and other documents or transcribed information of any type, whether expressed in ordinary or machine language.

(4) "Independent Certified Public Accountant" means a person duly registered in good standing and entitled to practice as a certified public accountant under the laws of the place of his residence or principal office and who is in fact independent. In determining whether an accountant is independent with respect to a particular person, appropriate consideration should be given to all relationships between the accountant and that person or any affiliate thereof. Determination of an accountant's independence shall not be confined to the relationships existing in connection with the filing of reports with the awarding authority.

(5) "Audit", when used in regard to financial statements, means an examination of records by an independent certified public accountant in accordance with generally accepted accounting principles and auditing standards for the purpose of expressing a *certified* opinion thereon, or, in the alternative, a qualified opinion or a declination to express an opinion for stated reasons.

(6) "Accountant's Report", when used in regard to financial statements, means a document in which an independent certified public accountant indicates the scope of the audit which he has made and sets forth his opinion regarding the financial statements taken as a whole with a listing of noted exceptions and qualifications, or an assertion to the effect that an overall opinion cannot be expressed. When an overall opinion cannot be expressed the reason therefor shall be stated. An accountant's report shall include as a part thereof a signed statement by the responsible corporate officer attesting that management has fully disclosed all material facts to the independent certified public accountant, and that the audited financial statement is a true and complete statement of the financial condition of the contractor.

(7) "Management", when used herein, means the chief executive officers, partners, principals or other person or persons primarily responsible for the financial and operational policies and practices of the contractor.

(8) Accounting terms, unless otherwise defined herein, shall have a meaning in accordance with generally accepted accounting principles and auditing standards.

(b) Subsection (a)(2) hereof notwithstanding, every agreement or contract awarded or executed pursuant to sections thirty-eight A %p1/2%p to thirty-eight O, inclusive, of chapter seven, or eleven C of chapter twenty-five A, and pursuant to section thirty-nine M of chapter thirty or to section forty-four A through H, inclusive, of chapter one hundred and forty-nine, shall provide that:

(1) The contractor shall make, and keep for at least six years after final payment, books, records, and accounts which in reasonable detail accurately and fairly reflect the transactions and dispositions of the contractor, and

(2) until the expiration of six years after final payment, the office of inspector general, and the commissioner of capital asset management and maintenance shall have the right to examine any books, documents, papers or records of the contractor or of his subcontractors that directly pertain to, and involve transactions relating to, the contractor or his subcontractors, and

(3) if the agreement is a contract as defined herein, the contractor shall describe any change in the method of maintaining records or recording transactions which materially affect any statements filed with the awarding authority, including in his description the date of the change and reasons therefor, and shall accompany said description with a letter from the contractor's independent certified public accountant approving or otherwise commenting on the changes, and

(4) if the agreement is a contract as defined herein, the contractor has filed a statement of management on internal accounting controls as set forth in paragraph (c) below prior to the execution of the contract, and

(5) if the agreement is a contract as defined herein, the contractor has filed prior to the execution of the contracts and will continue to file annually, an audited financial statement for the most recent completed fiscal year as set forth in paragraph (d) below.

(c) Every contractor awarded a contract shall file with the awarding authority a statement of management as to whether the system of internal accounting controls of the contractor and its subsidiaries reasonably assures that:

(1) transactions are executed in accordance with management's general and specific authorization;

(2) transactions are recorded as necessary

i. to permit preparation of financial statements in conformity with generally accepted accounting principles, and

ii. to maintain accountability for assets;

(3) access to assets is permitted only in accordance with management's general or specific authorization; and

(4) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action was taken with respect to any difference.

Every contractor awarded a contract shall also file with the awarding authority a statement prepared and signed by an independent certified public accountant, stating that he has examined the statement of management on internal accounting controls, and expressing an opinion as to

(1) whether the representations of management in response to this paragraph and paragraph (b) above are consistent with the result of management's evaluation of the system of internal accounting controls; and
(2) whether such representations of management are, in addition, reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the applicant's financial statements.

(d) Every contractor awarded a contract by the commonwealth or by any political subdivision thereof shall annually file with the commissioner of capital asset management and maintenance during the term of the contract a financial statement prepared by an independent certified public accountant on the basis of an audit by such accountant. The final statement filed shall include the date of final payment. All statements shall be accompanied by an accountant's report. Such statements shall be made available to the awarding authority upon request.

(e) The office of inspector general, the commissioner of capital asset management and maintenance and any other awarding authority shall enforce the provisions of this section. The commissioner of capital asset management and maintenance may after providing an opportunity for the inspector general and other interested parties to comment, promulgate pursuant to the provisions of chapter thirty A such rules, regulations and guidelines as are necessary to effectuate the purposes of this section. Such rules, regulations and guidelines may be applicable to all awarding authorities. A contractor's failure to satisfy any of the requirements of this section may be grounds for debarment pursuant to section forty-four C of chapter one hundred and forty-nine.

(f) Records and statements required to be made, kept or filed under the provisions of this section shall not be public records as defined in section seven of chapter four and shall not be open to public inspection; provided, however, that such records and statements shall be made available pursuant to the provisions of clause (2) of paragraph

SECTION 00700
GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION
c.149 \$25,000-100,000

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GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

ARTICLE 1 GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Owner-Contractor Agreement, Advertisement, Instructions to Bidders, Bidding Documents, Contract Forms, Conditions of the Contract, Specifications, Drawings, Massachusetts Highway Department publication known as the Standard Specifications For Highways and Bridges, 1988 Edition, as revised, Massachusetts Department of Community Housing and Development publication known as the Construction Handbook, all addenda issued prior to execution of the Contract, and other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Engineer.

1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification.

1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project

1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards, and workmanship for the Work, and performance of related services.

1.1.7 THE STANDARD SPECIFICATIONS & CONSTRUCTION HANDBOOK

a. The Standard Specifications For Highways and Bridges, 1988 Edition, as revised, published by the Massachusetts Department of Public Works (currently Massachusetts Highway Department). It outlines the procedures that the Contractor, Owner, Engineer, and Department shall follow during the construction of the Work. The most current amended version of the 1988 Edition, at the time of bid opening, of The Standard Specifications is incorporated by reference into the Contract Documents. Relevant sections of The Standard Specifications shall apply to non-building related construction Work.

b. The Construction Handbook is published by the Department of Housing and Community Development and available free of charge, from DHCD. It outlines the procedures that the Contractor, Owner, Architect, and Department shall follow during the construction of the Work. The most recent version, at the time of bid opening, of the Construction Handbook is incorporated by reference into the Contract Documents. Relevant Sections of the Construction Handbook shall apply to building related construction Work.

1.2 EXECUTION, CORRELATION, AND INTENT

1.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

1.2.2 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results. In case of inconsistent requirements in the Contract

Documents, the requirement for the greater quantity or higher quality shall take precedence and shall be the Contract requirement.

1.2.3. Unless otherwise stated in the Contract Documents, words which have well known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.2.-I. Where reference is made to standards or trade association publications, it shall be considered to refer to the latest edition and revision thereof, if any, in effect on the date the Contract Documents were advertised for bid.

1.3 USE OF DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS

The Drawings, Specifications and other documents prepared by the Engineer, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor, or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, the Engineer, and the Department.

ARTICLE 2 OWNER

2.1 DEFINITION

The term "Owner", sometimes also referred to as the "Awarding Authority" or "Authority", means the Commonwealth of Massachusetts, Department of Fish & Game, Division of Fisheries and Wildlife (DFW) identified in the Agreement, organized and existing under the provisions of M.G.L. c. 131.

2.2 INFORMATION AND SERVICES TO BE PROVIDED BY THE OWNER

2.2.1 The Owner will furnish to the Contractor, free of charge, a reasonable number of copies of the Contract Documents for the execution of the Work, including a set for record purposes. In addition, the Owner, through the Engineer, will furnish to the Contractor a reproducible transparency and one black line print of detail and clarification drawings issued after the Contract has been awarded. The Contractor shall provide and distribute such number of prints of these transparencies as required for the Contractor's and Subcontractors' use.

2.2.2 The Owner shall furnish available surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site.

2.3 OWNER'S RIGHT TO STOP THE WORK

2.3.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents or persistently fails to carry out the Work in accordance with the Contract Documents, the Owner by written order signed personally or by its authorized agent, may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

2.3.2 Stop work orders require the Administrator's prior approval. (See Subparagraph 3.1.2)

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Engineer at the Owner's direction to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies, hire one or more contractors to correct such deficiencies.

2.4.2 In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Engineer's additional services and expenses made necessary by such default, neglect, or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 DEPARTMENT

3.1 DEFINITIONS

3.1.1 The term "Department" means the Massachusetts Department of Fish and Game (DFG), 251 Causeway Street, 4th Floor, Boston, MA 02114.

3.1.2 The term "Administrator" means the person appointed by the Department to administer the terms of the Contract for Financial Assistance, who is also empowered to take certain actions under this Agreement. Contractor should address mail to the Administrator c/o the Engineer.

3.1.3 The term "Director" shall be defined as the Director of the Massachusetts DFG – Division of Fisheries and Wildlife (DFW) or his designee.

3.1.4 The term "Engineer" shall be Defined as the Chief Engineer of the Department or his designee.

3.1.5 The term "Engineer's Assistant" means the person designated by the Engineer to assist the Engineer and Administrator. The duties, responsibilities and limitations of the Engineer's Assistant's authority are described in the Standard Specifications.

3.2 PROJECT FUNDING

The Work under this Contract is funded by General Bond Funds of the Commonwealth of Massachusetts through the Owner.

3.3 DEPARTMENT'S RESPONSIBILITIES

3.3.1 The Contractor is advised that various actions taken or decisions made by the Owner and/or the Engineer under this Contract, require the prior approval and counter-signature of the Director. Those actions or decisions include, but are not limited to, the following:

- .1 Approval, substitutions, and final selection of Sub-Contractors
- .2 Change Orders and Construction Change Directives, whether or not they affect a change in the Contract Sum or in the Contract Time.
- .3 Written orders, notices, and approvals given by the Owner pursuant to the Contract Documents or pursuant to any Laws applicable to this Contract, including approval of the Contractor's payment requests .4
- Approval of "or equal" submissions and substitutions pursuant to Subparagraph 4.6.3.
- .5 Stop Work order.
- .6 Certificate of Substantial Completion.
- .7 Final payment.
- .8 Termination of Contract.

3.3.2 In any instance where the Contractor requires clarification as to whose approval is required, the Engineer shall provide such clarification.

3.3.3 Work undertaken by the Contractor or a Subcontractor at the Owner's or other person's order without the Director's countersignature prior to the start of such work shall be considered unauthorized work and shall not be considered cause for extra payment. The Contractor or Subcontractor shall be responsible for performing, at their own expense, corrective measures required by the Architect due to any failure to obtain the prior approval of the Administrator pursuant to Subparagraph 3.3.1.

3.3.4 The Department and its authorized representatives and agents shall at all times have access to, and be permitted to observe and review all Work, materials, payrolls, records of personnel, conditions of employment, invoices of materials, and other relevant data and records maintained by the Contractor on the Project.

ARTICLE 4 CONTRACTOR

4.1 DEFINITION

The Contractor, sometimes referred to as the General Contractor, is the person or entity identified as such throughout the Contract Documents as if singular in number. The term Contractor means the Contractor or its authorized representative.

4.2 REVIEW OF CONTRACT DOCUMENTS & FIELD CONDITIONS BY CONTRACTOR

4.2.1 The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner pursuant to Subparagraph 2.2.2 and shall at once report to the Engineer errors, inconsistencies, or omissions discovered. The Contractor shall not be liable to the Owner or Engineer for damage resulting from errors, inconsistencies, or omissions in the Contract Documents unless the Contractor recognized such error, inconsistency, or omission and knowingly failed to notify the Engineer. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Engineer the Contractor shall assume responsibility for such performance and shall bear the attributable costs for correction.

4.2.2 The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies, or omissions discovered shall be reported to the Engineer at once.

4.2.3 The Contractor shall perform the Work in accordance with the Contract Documents and submittals approved pursuant to Paragraph 4.7.

4.3 SUPERVISION AND CONSTRUCTION PROCEDURES, COORDINATION, AND CUTTING AND PATCHING

4.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures, and for coordinating all portions of the Work under the Contract.

4.3.2 The Contractor shall be responsible for the proper tilting of all Work and the coordination of the operations of all trades. Subcontractors, or materialmen engaged upon the Work.

4.3.3 All necessary cutting, coring, drilling, grouting, and patching required to fit together the several parts of the Work shall be done by the Contractor, except as may be specifically noted otherwise under any particular filed sub-bid section of the Specifications.

4.3.4 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors, and their agents and employees, and other persons performing portions of the Work.

4.3.5 The Contractor shall be responsible for inspection of portions of Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.

4.3.6 The Contractor shall do engineering required for establishing grades, lines, levels, dimensions, layouts, and reference points for the trades; shall be responsible for maintaining bench marks and other survey marks; and shall replace any bench marks or survey marks which have been disturbed or destroyed.

4.3.7 Unless otherwise required by the Contract Documents, or directed in writing by the Engineer. Work shall be done during regular working hours. However, if the Contractor desires to carry on the Work outside of regular working hours or on Saturdays, Sundays, or Massachusetts holidays it shall allow ample time to enable satisfactory arrangements to be made for inspecting Work in progress and shall bear the costs of such inspection. The Owner shall bill the Contractor directly for such costs.

4.3.8 Work done outside of regular working hours without the consent or knowledge of the Engineer shall be subject to additional inspection and testing as directed by the Engineer. The cost of this inspection and testing shall be paid by the Contractor whether the Work is found to be acceptable or not.

4.4 SUPERINTENDENT

4.4.1 The Contractor shall employ a Superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The Superintendent shall represent the Contractor, and communications given to the Superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case. The Superintendent shall attend each job meeting.

4.4.2 The Superintendent shall be a competent and responsible employee, satisfactory to the Owner, who is regularly employed by the Contractor and is designated by the Contractor as its representative to be in full time attendance at the Project site throughout the construction of the Work. The Superintendent shall be responsible for coordinating all the Work of the Contractor and the Subcontractors. The Superintendent shall be licensed consistent with the Massachusetts Building Code. The Superintendent's resume shall be submitted to the Owner prior to commencement of construction and must demonstrate to the Owner's reasonable satisfaction that the Superintendent has performed similar duties on previous construction projects similar to the Project.

4.5 LABOR

The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them, and whenever the Owner shall notify the Contractor, in writing, that any worker is, in its opinion, incompetent unfaithful, disorderly, or otherwise unsatisfactory, such employee shall be discharged from the Work and shall not again be employed on the Project except with the consent of the Owner.

4.6 MATERIALS AND EQUIPMENT

4.6.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

4.6.2 Materials and Equipment to be installed as part of the Contract (both or either of which are hereinafter referred to as "Materials") shall be new, unused, of recent manufacture, assembled, and used in accordance with the best construction practices.

4.6.3 "OR EQUAL" SUBMISSIONS/SUBSTITUTIONS

4.6.3.1 Except where a product has been specified as a proprietary material, the words "or equal" are understood to follow the name of any maker, vendor, or product specified to be used in the Contract Documents. To determine if the materials or articles proposed by the Contractor are equal to those specified, the Engineer shall determine whether the materials or articles proposed are at least equal in quality, durability, appearance, strength and design to the material or articles named or described, and will perform at least equally the functions imposed by the design. See M.G.L. c.30 §39M.

4.6.3.2 The Contractor shall be responsible for providing the Engineer with any information and test results the Engineer reasonably requires to determine if a material is equal to a material named or described in the Contract Documents.

4.6.3.3 Whenever the Contractor submits a material for approval as a substitute for a material named or described in the Contract Documents, such submission shall be made at least sixty (60) days prior to the date the materials will be used on the Project. In no event shall the Contractor maintain a claim for delays based upon the Engineer's review of such substituted materials if the Contractor has failed to comply with the sixty (60) days submission requirement.

4.7 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

4.7.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate a portion of the Work.

4.7.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor or its Subcontractors and suppliers to illustrate materials or equipment for some portion of the Work.

4.7.3 Samples are physical examples which illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.

4.7.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. The purpose of their submission is to demonstrate for those portions of the Work for which submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Engineer is subject to the limitations of Subparagraph 4.7.9.

4.7.5 The Contractor shall review, approve, and submit to the Engineer, Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals made by the Contractor which are not required by the Contract Documents may be returned without action. The Contractor's attention is directed to the provisions of Subparagraph 4.6.3 entitled "Or Equal" Submissions/Substitutions and Section 01300 of the Specifications.

4.7.6 The Contractor shall prepare and keep current for the Engineer's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule submitted pursuant to Paragraph 9.4, and allows the Engineer reasonable time to review submittals.

4.7.7 The Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Engineer. Such Work shall be in accordance with approved submittals.

4.7.8 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements, and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

4.7.9 The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Engineer's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Engineer in writing of such deviation at the time of submittal and the Department has given explicit written

approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by the Engineer's actions.

4.7.10 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Engineer on previous submittals.

4.7.11 Informational submittals upon which the Engineer is not expected to take responsive action may be so identified in the Contact Documents.

4.7.12 When professional certification of performance criteria of materials, systems or equipment is required by the Contact Documents, the Engineer shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

4.8 SAMPLES AND TESTS

4.8.1 Materials to be used in the Work may be tested or inspected after reasonable notice by the Engineer and may be rejected if they fail the specified tests. Except as otherwise provided in the Contract, all testing of material specifically requested by the Engineer will be paid for by the Owner, except that the cost of testing of materials that fail the testing criteria shall be borne by the Contractor. If the Contractor requests permission to use a material that was not specified in the Contract Documents and the Engineer requires testing of such material before approving its use, the Contractor shall pay for such testing.

4.8.2 The source of material proposed by the Contractor shall be designated in time to permit all required testing and inspection before the material is needed for incorporation into the Work. The Contractor shall have no claim for delays due to testing if it fails to designate the proposed source or to order the material in time to provide for adequate testing and inspection. Necessary arrangements shall be made to permit the Engineer to make factory, shop, or other inspection of materials or equipment ordered for the Work, in process of manufacture or fabrication, or in storage elsewhere than the site of the Work.

4.8.3 The Contractor shall furnish the Engineer with samples of the materials it proposes to use in the execution of the work in sufficient time to afford the Engineer the opportunity to adequately review and, if necessary, arrange for testing of such materials.

4.9 DELIVERY AND STORAGE OF MATERIALS

4.9.1 Materials and equipment shall be progressively delivered to the site so that there will be neither delay in the progress of the Work nor an undue accumulation of materials that are not to be used within a reasonable time.

4.9.2 Materials stored off-site shall be stored at the expense of the Contractor in a manner that preserves their quality and fitness for the Work. Material shall be placed on wooden platforms or other hard clean surfaces and not on the ground and shall be properly protected.

4.9.3 If the Contractor requests the Engineer's inspection of materials stored off-site, the Contractor shall assume the Engineer's reasonable costs for travel, room, and meals associated with such inspection.

4.9.4 Materials stored either at the site or at some other location agreed upon in writing shall be located so as to facilitate prompt inspection and may again be inspected prior to their use in the work.

4.9.5 The Contractor shall take charge of and be liable for any loss of or injury to the materials delivered at or in the vicinity of the place where the Work is being done and shall notify the Engineer as soon as any such materials are so delivered and allow them to be examined by the Engineer.

4.9.6 Payment for stored materials shall be made in accordance with Paragraph 10.4.

4.10 WARRANTY

The Contractor warrants to the Owner and Engineer that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

4.11 REJECTION OF DEFECTIVE MATERIALS

The Engineer may reject materials if the Engineer reasonably determines that such materials do not conform to the Contract Documents. No rejected materials, the defects of which have been subsequently corrected, shall be used in the Work except with the written permission of the Engineer. No extra time shall be allowed for completion of the Work due to the rejection of non-conforming materials.

4.12 REJECTION OF DEFECTIVE WORK

The Engineer's inspection of the Work shall not relieve the Contractor of any of its responsibilities to fulfill the Contract obligations, and defective work shall be corrected. Unsuitable work may be rejected by the Engineer, notwithstanding that such work and materials have been previously overlooked or misjudged by the Engineer and accepted for payment. If the Work or any part thereof shall be found defective at any time before the final acceptance of the whole Work, the Contractor shall forthwith correct such defect in a manner satisfactory to the Engineer, and if any material brought upon the site for use in the Work, or selected for the same, shall be rejected by the Engineer as unsuitable or not in conformity with the Contract requirements, the Contractor shall forthwith remove such materials from the vicinity of the Work.

4.13 MATERIALS ATTACHED OR AFFIXED TO THE WORK

Nothing in this Contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the Work or the soil but all such materials shall upon being so attached or affixed, become the property of the Owner

4.14 SALES TAX EXEMPTION AND OTHER TAXES

4.14.1 To the extent that materials and supplies are used or incorporated in the performance of this Contract, the Contractor is considered an exempt purchaser under the Massachusetts Sales Act, Chapter 14 of the Acts of 1966.

4.14.2 The Contractor shall be responsible for paying all other taxes and tariffs of any sort, related to the work.

4.15 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the use and information of the Owner, one record copy of the Drawings, Specifications, Addenda, Change Orders, and other Contract Modifications, in good order and marked currently to record changes and selections made during construction, and in addition approved Shop Drawings, Product Data Samples, updated construction schedule, and similar required submittals. These shall be available to the Engineer and shall be delivered to the Engineer for submittal to the Owner upon completion of the Work.

4.16 PERMITS, FEES, AND NOTICES

4.16.1 The Contractor shall secure and pay for any and all permits, licenses, and fees required for the proper execution of the Work. The Contractor shall coordinate all efforts required to obtain these permits.

4.16.2 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the Work.

4.16.3 It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Engineer and Owner in writing, and necessary changes shall be accomplished by appropriate Modification.

4.16.4 If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Engineer and Owner, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs.

4.17 DEBRIS, CHEMICAL WASTE

4.17.1 The Contractor shall not permit the accumulation of debris, both exterior and interior, and the work area shall at all times be kept satisfactorily clean.

4.17.2 The Contractor shall remove debris from the site of the work and legally dispose of it at any private or public dump that the Contractor may choose. The Contractor shall make all arrangements and obtain any approvals necessary for said disposal from the owners or officials in charge of such dumps and shall bear all cost, including fees resulting from such disposal. Garbage shall be removed daily.

4.17.3 No open fire shall be permitted on site.

4.17.4 Chemical Waste: Chemical waste shall be stored in corrosion resistant containers, removed from the Project site, and disposed of not less frequently than monthly unless directed otherwise. Disposal of chemical waste shall be in accordance with requirements of the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP). Fueling and lubricating of vehicles and equipment shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants to be discarded or burned shall be disposed of in accordance with approved procedures meeting all applicable Federal, State and local regulations. In the event of an oil or hazardous materials spill large enough to violate Federal, State, or applicable local regulations, the Engineer shall be notified immediately. The Contractor shall be responsible for immediately cleaning up any oil or hazardous waste spills resulting from its operations. Any costs incurred in cleaning up any such spills shall be borne by the Contractor.

4.18 SITE AND WEATHER PROTECTION

4.18.1 The Contractor shall take precaution during the execution of work involving demolition not to disturb or damage any existing structures, landscaping, walks, roads, or other items scheduled to remain. The Contractor shall restore any damaged items to original condition and as directed by the Engineer. The Contractor shall provide and erect acceptable barricades, fences, signs, and other traffic devices to protect the work from traffic and the public as reasonably necessary and as required by the Massachusetts Building Code.

4.18.2 The Contractor shall install weather protection and provide adequate heat in the protected area from November 1 to March 31 as required by M.G.L. c. 149 §44G.

4.19 ARCHAEOLOGICAL AND HISTORICAL RESOURCES

All items having any apparent historical or archaeological interest which are discovered in the course of any construction activities shall be carefully preserved and reported immediately to the Engineer for determination of appropriate actions to be taken.

4.20 SAFETY REQUIREMENTS

4.20.1 The Contractor must comply with all Federal, State, and Local safety laws and regulations of the applicable to work performed under this Contract.

4.20.2 If the Contractor uses or stores toxic or hazardous substances it is subject to M.G.L. c. 111F §2, the "Right to Know" law and regulations promulgated by the Department of Public Health, 105 CMR 670, the Department of Environmental Protection, 310 CMR 33, and the Department of Labor and Workforce Development, 441 CMR 21; and must post a Workplace Notice obtainable from the Department of Labor and Workforce Development.

4.20.3 The Contractor must comply with Dig-Safe Laws. Dig-Safe is the Utility Underground Plant Damage Prevention System, 331 Montvale Ave., Woburn, MA 01801, 1.888.3447233. The Contractor must notify Dig-Safe of contemplated excavation, demolition, or explosive work in public or private ways, and in any utility company right of way or easement, by certified mail, with a copy to Department of Environmental Protection (DEP). This notice must be given at least 72 hours prior to the work, but not more than sixty days before the work is to be done. Such notice shall state the name of the street or the route number of the way and an accurate description of the location and nature of the proposed work. Dig-Safe is required to respond to the notice within 72 hours of receipt by designating the location of pipes, mains, wires or conduits at the site. The Contractor shall not commence work until Dig-Safe has responded. The work shall be performed in such manner and with reasonable precautions taken to avoid damage to utilities under the surface at the work location. The Contractor shall provide the Superintendent with current Dig-Safe regulations, and a copy of M.G.L. c.82 §40. Any costs related to the services performed by Dig-Safe shall be borne by the Contractor.

4.20.4 This project is subject to compliance with Public Law 92-596 "Occupational Safety and Health Act of 1970" (OSHA), with respect to all rules and regulations pertaining to construction, U.S. Code Title 29, sections 651 et seq. including Volume 36, numbers 75 and 105, of the Federal Register as amended, and as published by the U.S. Department of Labor.

4.20.5 If this Project requires the containment or removal of asbestos or material containing asbestos, lead or waste containing lead based paint, the Contractor shall ensure that the person or company performing the asbestos or lead related services is licensed pursuant to applicable State laws and regulations.

4.21 ACCESS TO WORK

The Contractor shall provide the Owner and Engineer access to the Work at all times and shall cooperate with the Owner whenever the Owner invites visitors to the site.

ARTICLE 5 ADMINISTRATION OF THE CONTRACT

5.1 ENGINEER

The Engineer is the person or entity licensed to practice engineering and who is responsible for performing the duties assigned to the Engineer by the Contract Documents.

5.2 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall communicate through the Project Manager. Communications by and with the Engineer's consultants shall be through the Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

5.3 ENGINEER'S ADMINISTRATION OF THE CONTRACT

5.3.1 The Project Manager, in consultation with the engineer, will provide administration of the Contract as described in the Contract Documents, and will be the Owner's representative (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the guaranty period described in Article 11. The Engineer will advise and consult with the Owner.

5.3.2 The Engineer will regularly visit the site, conduct job meetings, and keep the Owner informed of the progress and quality of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work. The Engineer's minutes of meetings shall be the official minutes kept on the Project.

5.3.3 Based on the Engineer's observations and evaluations of the Contractor's Applications for Payment, the Engineer will review and certify the amounts due the Contractor and will submit to the Owner and the Department for their consideration Certificates for Payment in such amounts as the Engineer determines appropriate.

5.3.4 The Engineer shall reject Work which does not conform to the Contract Documents. Whenever the Engineer considers it necessary or advisable to achieve the intent of the Contract Documents, the Engineer will have authority to require additional inspection or testing of the Work in accordance with Paragraph 4.8.

5.3.5 The Engineer will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking such submittals for conformance with the information given and the design concept expressed in the Contract Documents. This review shall be in accordance with the provisions of Subparagraph 4.6.3 and the procedures described in Section 01300 of the Specifications, and shall not relieve the Contractor from compliance with the requirements of the Contract Documents.

5.3.6 The Project Manager will prepare Change Orders and Construction Change Directives, and may authorize Minor Changes in the Work as provided in Paragraph 8.1.

5.3.7 The Engineer will conduct inspections to determine the date or dates of Substantial Completion and the date of final Completion, will receive and forward to the Owner for the Owner's review and records written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

5.3.8 If the Owner, Engineer, and Department agree, the Owner may provide one or more project representatives to assist in carrying out the Engineer's responsibilities at the site. The duties, responsibilities, and limitations of authority of such project representatives shall be as described in the Standard Specifications and explained at the pre-construction conference.

5.3.9 The Engineer will interpret and decide matters concerning performance under and requirements of the Contract Documents on written request of either the Owner or Contractor. The Engineer's written response to such requests will be made within the thirty day time limit prescribed in Paragraph 8.6.3.

5.3.10 The Engineer's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

5.4 PROCEDURES AND PRACTICES

The Department's procedures, forms, and practices which must be employed on the Project are described in the Standard Specifications and will be explained at the pre-construction conference.

5.5 PRECONSTRUCTION CONFERENCE

Prior to commencement of the Work, the Contractor shall meet in conference with representatives of the Owner, Department, and Engineer to discuss and develop mutual understandings relative to administration of the quality assurance program, safety program, labor provisions, the schedule of work, and other Contract procedures.

ARTICLE 6 SUBCONTRACTORS

6.1 DEFINITION

6.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the work at the site.

6.1.2 The Contractor shall require each Subcontractor to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor assumes toward the Owner and the Engineer.

6.1.3 Subcontracts between the Contractor and a filed sub-bidder shall be in the form required by M.G.L c. 149 §44F.

6.2 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Paragraph 19.1 and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor in writing; and

.2 assignment is subject to the prior rights of the surety obligated under bond relating to the Contract.

ARTICLE 7
CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

7.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such claim as provided elsewhere in the Contract Documents.

7.1.2 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing and coordinating their construction schedules with one another when directed to do so.

7.2 MUTUAL RESPONSIBILITY

7.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

7.2.2 If part of the Contractor's Work depends on proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Engineer apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor to so report shall constitute an acknowledgment that the Owner's or separate contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

7.2.3 The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors.

ARTICLE 8
CHANGES IN THE WORK

8.1 CHANGES-DEFINITIONS

8.1.1 All changes in the work, including any increase, decrease, or other equitable adjustment in the Contract Sum or in the time for performing the Contract shall be authorized in the form of one, or a combination of, the following written instruments: Change Order, Construction Change Directive, or a Minor Change in the Work. The term "equitable adjustment" as used in this paragraph shall include all adjustments to the Contract Sum or time to which the Contractor is entitled pursuant to M.G.L. c.30 §§39N and 39O and such equitable adjustment shall be made in accordance with the provisions of this Article.

8.1.2 A Minor Change is a written order binding on the Owner and Contractor issued by the Engineer, with the concurrence of the Construction Advisor, not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. The Contractor shall carry out such written orders promptly.

8.1.3 A Change Order is a written instrument prepared by the Engineer and signed by the Owner, Department, Contractor, and Engineer, stating their agreement regarding a change in the work, including a change in the Contract Sum or Contract Time.

8.1.4 A Construction Change Directive is a written order prepared by the Engineer and signed by the Owner, Engineer, and Department, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum, or Contract Time, or both. The Owner may, by Construction Change Directive, and without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

8.1.5 A Change Order shall be based upon agreement among the Owner, Contractor, Engineer, and Department; a Construction Change Directive requires agreement by the Owner, Engineer, and the Department, and may or may not be agreed to by the Contractor; an order for a Minor Change in the Work may be issued by the Engineer with the concurrence of the Construction Advisor.

8.1.6 Change Orders and Construction Change Directives must be counter-signed by the Director in accordance with Subparagraph 3.3.1, to be effective.

8.2 REQUEST FOR A CHANGE IN THE WORK

A change order request shall be in writing and may originate with the Owner, the Department, the Engineer, or the Contractor. If such a request would cause a change in the Contract Sum, the Contractor shall promptly submit to the Engineer its cost and pricing data for such proposed change. Such data shall be accurate, current and complete at the time of submission and shall be computed in accordance with Subparagraph 8.3.1.

8.3 METHOD FOR DETERMINING AMOUNT OF CHANGE

8.3.1 Changes in the Contract Sum shall be calculated in accordance with one or a combination of the following methods, as determined by the Engineer:

- .1 Lump sum basis, provided the lump sum amount shall include the estimated cost of the change, broken down by Items a through i in the following Subparagraph .3.
- .2 Unit price basis, to be adjusted in accordance with contract unit prices, or other agreed upon unit prices provided that the unit prices shall be inclusive of all costs related to such equitable adjustment.
- .3 Time and materials basis, on a not-to-exceed predetermined upset amount determined by the Engineer to be subsequently adjusted on the basis of the Contractor's actual costs based on the following Items a. through i.:
 - a. Cost of labor at the rates found elsewhere in this document, including foremen;
 - b. Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
 - c. Rental cost of machinery and equipment exclusive of hand tools, whether rented from the Contractor or others.
 - d. A percentage of the net increase or decrease of Item a. to cover Worker's Compensation, F.I.C.A ., and unemployment contributions.
 - e. The percentage for Worker's Compensation in Item d. above shall not exceed the standard manual rate for the involved trade, as set by the Worker's Compensation Rating and Inspection Bureau of Massachusetts. This rate shall not include any surcharges such as experience modifications and all risk factor adjustment programs, etc.
 - f. For work performed by the Contractor's own forces, there shall be added an amount of 15% of items a - d for overhead, superintendence, and profit.
 - g. For work performed by any Subcontractor, there shall be added an amount of 15% of the Subcontractor's costs for Items a - d for the Subcontractor's overhead, superintendence and profit. The Contractor shall be entitled to an additional 10% mark-up on the total amount of the Subcontractor's price as compensation for assuming full responsibility and supervision for the Subcontractor's work.
 - h. Actual increases in the premium costs for performance and payment bonds required of the Contractor and filed Subcontractors, provided there will be an appropriate credit for reduced premiums for a credit change order.
 - i. On any change in the Contract Sum that involves a credit the amount of the credit will not include an overhead and profit factor, however, the credit will include an amount for item d. which shall not be less than 25% of item a.

8.3.2 The method provided in Subparagraph 8.3.1, for compensating the Contractor and Subcontractors for changes in the Work, shall be considered to adequately compensate the Contractor and Subcontractors for any and all costs directly, indirectly, or consequentially related to, or caused by, such change in the work.

84 WORK PERFORMED UNDER PROTEST

The Contractor shall perform all work as directed by the Engineer, and if the Engineer determines that certain work for which the Contractor has requested a change order does not represent a change in the Contract, or if the Contractor and the Engineer cannot agree to the amount of compensation for a change order, the Contractor shall perform said work under protest and must follow the notice requirements and maintain the records required by Subparagraph 8.13.

8.5 STATUTORY CHANGE ORDER PROVISIONS

The Contractor's attention is directed to the Massachusetts General Laws Chapter 30, §§ 39I, 39J, 39N, 39O and 39P, the provisions of which apply to this Contract.

8.6 DIFFERING SITE CONDITIONS, M.G.L. c.30§39N

8.6.1 If, during the progress of the Work, the Contractor or the Owner discovers that the actual subsurface or latent physical conditions encountered at the site differ substantially or materially from those shown on the plans or indicated in the Contract Documents, either the Contractor or the Owner may request an appropriate time extension and an equitable adjustment in the Contract Sum applying to work affected by the differing site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered

8.6.2 Upon receipt of such a claim from a Contractor, or upon its own initiative, the Owner shall make an investigation of such physical conditions, and, if they differ substantially or materially from those shown on the plans or indicated in the Contract Documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and Contract Documents and are of such nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the Owner shall upon submission by the Contractor of a properly submitted Change Order request, make an equitable adjustment in the Contract Sum and the Contract shall be modified in writing accordingly.

8.6.3 TIMELY DECISION BY OWNER. M.G.L. c.30 §39P

Whenever this Contract requires the Owner or its Engineer to make a decision during construction of the Project, on interpretation of the specifications, approval of equipment, material or any other approval, or progress of the work, that decision shall be made promptly and, in any event, no later than thirty days after receipt of a written submission for such decision by the Contractor; but if such decision requires extended investigation and study, the Owner or the Engineer shall, within thirty days after the receipt of the submission, give the Contractor written notice of the reasons why the decision cannot be made within the thirty day period and the date by which the decision will be made.

8.7 CLAIMS

8.7.1 If the Contractor has any claim or dispute of any nature arising under this Contract, including a claim based on the Owner's failure or refusal to approve a change order request of the Contractor, in full or in part, the Contractor shall submit such claim or dispute to the Engineer, in the form of a change order request, for initial review and consideration, subject to further appeal to the Administrator. If the Contractor is not satisfied with the Engineer's decision or, if the Engineer fails to render a decision within thirty days after receiving written notice of such claim or dispute from the Contractor, the Contractor may file a written request for a decision with the Department pursuant to Subparagraph 8.7.2.

8.7.2 Appeal of an Engineer's decision under Subparagraph 8.7.1 must be made directly to the Administrator by certified mail, copy to the Engineer and Owner, within twenty-one (21) calendar days after the date on which the party making the appeal receives the Engineer's written decision or within twenty-one (21) days after the thirty (30) day non-decision period noted in 8.7.1. Failure to appeal within this period will result in the Engineer's decision becoming final and binding upon the Owner and the Contractor.

8.7.3 Pending resolution of the claim or dispute, the Contractor must proceed with the disputed Work, as directed by the Engineer. The Contractor must give written notice to the Department and the Engineer stating that it is proceeding with the disputed work under protest. Accurate records of the nature and extent of the disputed Work and of the time spent and equipment used on the disputed Work shall be maintained by the superintendent and verified daily by the Project Representative, or the Owner's designee. Failure of the Contractor to maintain such records shall cause the Contractor to forfeit its claim to additional compensation for such disputed work.

8.7.4 Meetings or administrative conferences held by the Department to review the basis of the claim or dispute are conducted in accordance with the procedure described in the Standard Specifications. Such conferences are not subject to the State Administrative Procedures Act.

8.7.5 At the conclusion of these proceedings, the Department shall issue a decision which shall be final under the Contract. The matter may then be appealed to a court of competent jurisdiction.

8.7.6 Requests for administrative conferences by subcontractors must be made by the Contractor, subcontractors cannot make such requests directly.

ARTICLE 9 TIME, SCHEDULES, AND COMPLETION

9.1 DEFINITIONS

9.1.1 Unless otherwise provided, Contract Time is the period of time, as extended by approved Change Order, allotted in the Contract Documents for Substantial Completion of the Work.

9.1.2 The date of commencement of the Work is the date established in the Notice to Proceed from the Owner. The commencement date shall not be postponed by the failure to act by the Contractor or by persons or entities for whom the Contractor is responsible.

9.1.3 The date of Substantial Completion is the date certified by the Engineer in accordance with Subparagraph 9.6.7.

9.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

9.2 PROGRESS AND COMPLETION

9.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Contract the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

9.12 The Contractor shall proceed expeditiously with adequate forces and shall achieve Completion within the Contract Time.

9.3 DELAYS AND EXTENSIONS OF TIME

9.3.1 The Contractor shall be entitled to an extension of time for completion of the Work because of;

- .1 acts of God;
- .2 labor disputes;
- .3 abnormal weather conditions; or
- .4 acts of neglect of the Owner, Engineer, or Department as described in Subparagraph 8.6.3.

9.3.1.5 Except in unusual circumstances, delays caused by suppliers, Subcontractors and sub-subcontractors shall be considered to be within the control of the Contractor.

9.3.1.6 Should the Contractor require additional time to complete the Work, the Contractor shall document the reasons therefore and request an extension of time at the time the alleged delay occurs, as provided in this Article and Article 8.

9.3.1.7 Failure to notify the Engineer of any delay as provided in this Article shall preclude the Contractor from subsequently claiming any damages due to said delay.

9.3.1.8 Requests for extensions of time shall be submitted as a change order request to the Engineer under Article 8 for the Owner's consideration.

9.3.2 CONTRACTOR'S LIABILITY FOR DELAYS

The Contractor shall be liable for, and shall pay, to the Owner, all of the Owner's Project related costs incurred after the time stipulated for Substantial Completion, as extended by Change Order. Such costs shall include: fees paid to the Engineer as extra services for inspection services and administration of the Contract, at the rate stipulated in the Contract for Engineering Services between the Owner and the Engineer; the costs of the Project Representative at the current salary rate; lost rental income based on the average rent collected by the Owner, and/or increased rental subsidies and any other direct expenses. The Owner may retain from moneys otherwise due the Contractor whatever sums accrue to the Owner pursuant to this provision. The Contractor shall not be liable for costs for delay in performance for any period for which an extension of the Contract Time has been granted pursuant to the provisions of Subparagraph 9.3.

9.3.3 OWNER DELAYS

9.3.3.1 The Owner may delay the commencement of the Work, or any part thereof, due to unforeseen circumstances or conditions which have a bearing on the Work required under this Contract or for any other reason if it is deemed to be in the best interest of the Owner to do so. Except as expressly provided in the following Subparagraphs 9.3.3.2, 9.3.3.3, and 9.3.3.4, the Contractor shall have no claim for additional compensation on account of such delay, but shall be entitled to an extension of Contract Time as determined reasonable by the Engineer

9.3.3.2 The Contractor and the Owner agree that the following Subparagraphs provide the Contractor with the right to request additional compensation for Owner caused delays only in the following two circumstances:

- .1 When the Owner provides the Contractor with a written order to suspend or delay the Work, or a portion thereof, for a period of fifteen days or more.

- .2 When the Owner or its Engineer fails to make a decision within the thirty day period described in Subparagraph 8.6.3 and such failure delays the Work, or a portion thereof, for fifteen days or more.

9.3.3.3 The Owner may, for its convenience, order the Contractor in writing to suspend, delay, or interrupt all or any part of the Work for such period of time as it may determine appropriate, provided however, that if there is a suspension, delay, or interruption for fifteen days or more, or there is a failure of the Owner to act within the time specified in this Contract, the Owner shall make an adjustment in the Contract Sum for any increase in the cost of performance of this Contract, but shall not include any profit to the Contractor on account of such increase; and provided further, that the Owner shall not make any adjustment in the Contract Sum under this provision for any suspension, delay, interruption, or failure to act to the extent that such is due to any cause for which this Contract provides for an equitable adjustment of the Contract Sum under any other Contract provisions. M.G.L. c.30 §39O (a).

9.3.3.4 The Contractor must submit the amount of a claim under Subparagraph 9.3.3.3 to the Owner in writing as soon as practicable after the end of the suspension, delay, interruption, or failure to act and, in any event, not later than the date of final payment under this Contract and except for costs due to a suspension order, the Owner shall not approve any costs in the claim incurred more than twenty days before the Contractor notified the Owner in writing of the act or failure to act involved in the claim. M.G.L. c.30 §39O (b).

9.3.3.5 The Owner and the Contractor agree that the preceding Subparagraph 9.3.3.4 places a burden on the Contractor to inform the Owner, whenever the Contractor considers that an action or inaction of the Owner or its Engineer could result or has resulted in a delay in the Project, thereby providing the Owner with the opportunity to take action to avoid or lessen the time extensions or damages that might be associated with such action or inaction.

9.3.3.6 The Contractor must file any claim for additional compensation made pursuant to Subparagraph 9.3.3.4 as a Change Order request. The amount of any such claim shall be calculated only in accordance with the provisions of Subparagraph 8.3.1.3 items a through i, and shall be subject to the provisions of Subparagraph 8.3.2.

9.4 CONSTRUCTION AND PAYMENT SCHEDULES

9.4.1 Prior to commencement of the Work the Contractor shall submit to the Engineer a construction schedule in bar graph form, satisfactory to the Engineer showing in detail the proposed progress for the construction of the various parts of the Work, the proposed times for receiving materials required, and the interrelationship between the various construction operations and the percentage of completion and the dollar value of the completed work on the first day of each month for each section of the specifications and the entire Work. Submission of said schedule shall be a condition precedent to approval of the Contractor's first application for payment.

9.4.2 At the end of each month, or more often if required, the Contractor shall furnish the Engineer an updated schedule showing actual progress of the various parts of the Work in comparison with the originally proposed progress and payment schedules. If the Engineer raises any objections to progress or payment schedules submitted by the Contractor, the Contractor shall immediately address and resolve such objections to the reasonable satisfaction of the Engineer.

9.4.3 If the Contractor submits a construction schedule that anticipates Substantial Completion before the date established in the Owner's Notice to Proceed, the Contractor shall have no claim for additional compensation on account of any delays that prevent Substantial Completion before the date set in said Owner's Notice to Proceed.

9.5 USE AND OCCUPANCY

9.5.1 Prior to the date of Substantial Completion of the entire Project stipulated in the Notice to Proceed, the Owner shall have the right, from time to time, to occupy and use any portion of the Project as the Work in connection therewith is substantially completed, provided such use and occupancy does not unduly interfere with the Contractor's operations.

9.5.2 The Engineer will, prior to any such use and occupancy, give written notice to the Contractor, indicating the areas intended to be occupied and used, and the intended commencement date of such use and occupancy. Occupancy and use shall not commence prior to a time mutually agreed to by the Owner and the Contractor.

9.5.3 Upon receipt of such notice of intent, the Contractor shall promptly secure and submit to the Engineer endorsement from the insurance carrier permitting use and occupancy of the Work, or any designated portion thereof, by the Owner prior to Substantial Completion of the entire Project. The Contractor shall be permitted to cancel its special perils insurance for that portion of the Project used and/or occupied by the Owner.

9.5.4 Partial or entire use and occupancy by the Owner shall not constitute an acceptance of Work not completed in accordance with the Contract Documents nor relieve the Contractor from the obligation of performing any Work required by the Contract but not completed at the time of use and occupancy. Before such use and occupancy, the Engineer will give the Contractor a list of items to be completed prior to Final Completion occurring in the areas to be occupied.

9.5.5 The Contractor shall be relieved of all maintenance costs of the portion of the Project occupied under the provisions of this Article.

9.5.6 The Contractor shall not be responsible for wear and tear or damage resulting solely from such use and occupancy.

9.5.7 The Contract Sum will be adjusted by mutually acceptable arrangements between the Owner and the Contractor with respect to heat, electricity, and water furnished by the Contractor to the portion of the Work so occupied.

9.5.8 When any portion of the building is in condition to receive fittings, appliances, furniture, or other property to be furnished and installed by the Owner under separate contracts, the Contractor shall allow the Owner to bring such items into the building and shall provide all reasonable facilities and protection therefore.

9.6 SUBSTANTIAL COMPLETION

9.6.1 Substantial Completion is the stage in the progress of the Work when, in the opinion of the Engineer, the Work is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

9.6.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Engineer a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

9.6.3 Upon receipt of the Contractor's list of items to be completed or corrected, the Engineer will promptly make a thorough inspection and prepare a "punch list", setting forth in accurate detail any items on the Contractor's list and additional items that are not acceptable or are incomplete.

9.6.4 If, after receipt of the Contractor's list, the Engineer determines that the Work is not substantially complete, the Engineer shall inform the Contractor of those items that must be completed before the Engineer will prepare a punch list. Upon completion of those items, the Contractor shall again request the Engineer to prepare the punch list.

9.6.5 When the punch list has been prepared, the Contractor will arrange a meeting with the Engineer and Subcontractors to identify and explain all punch list items and address questions on the work which must be done before final acceptance.

9.6.6 The Engineer may revise the punch list, from time to time, to ensure that all items of the Work are properly completed.

9.6.7 The Engineer will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate within the provisions of Subparagraph 9.7.2.

9.6.8 Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate and shall be subject to the approval of the Department.

9.7 FINAL COMPLETION

9.7.1 After the Engineer has certified that the Work is substantially complete, the Contractor shall immediately proceed to complete all the remaining items of Work as determined by the Engineer, including items authorized by Change Orders, Construction Change Directives, or items disputed by the Contractor.

9.7.2 The Contractor shall complete all the remaining items of Work described in Subparagraph 9.7.1, as soon as possible, and in any event within one hundred and twenty days after Substantial Completion, unless the Engineer determines that a shorter time period for completion is appropriate, in which event the Contractor must complete the Contract work within such period. The Engineer may extend such one hundred and twenty day period if the Engineer determines that such extension is justified.

9.7.3 If the Contractor fails to complete the remaining items of Work within the time period provided in Subparagraph 9.7.2, the Owner may arrange for other contractors to complete such items and the direct and indirect costs of such completion shall be charged against the balance due the Contractor or, if no such balance remains, the Contractor shall pay the Owner the costs of such completion.

9.7.4 As an alternative to the procedure described in Subparagraph 9.7.3, the Owner may invoke the performance bond of the Contractor and demand that the surety shall complete the remaining items of work in a timely manner.

9.7.5 The Engineer will conduct up to three (3) inspections of completed punch list items. The Contractor shall be responsible for the costs of additional inspections required to verify successful completion of the punch list.

ARTICLE 10 PAYMENTS

10.1 CONTRACT SUM

The Contract Sum is stated in the Owner-Contractor Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

10.2 SCHEDULE OF VALUES

10.2.1 Before the first Application for Payment, the Contractor shall submit to the Engineer a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Engineer may require. This schedule, unless objected to by the Engineer, shall be used as a basis for reviewing the Contractor's Applications for Payment.

10.2.2 The schedule of values shall contain a separate item for each Section of the Specifications broken down in such form as the Engineer may require. Each item in the schedule of values shall include its proper share of overhead and profit.

10.3 APPLICATIONS FOR PAYMENT

Once each month, on a date established at the beginning of the Work, the Contractor shall deliver to the Engineer by hand or by registered or certified mail with return receipt, an itemized Application for Payment, supported by such data substantiating the Contractor's right to payment as the Engineer may require, and reflecting retainage, as provided in Subparagraph 10.6.1. Such Application for Payment shall be submitted on a form available from the Department. The form shall show separately:

- .1 The value of labor and materials incorporated in the Work.
- .2 The value, kind, and quantity of each item of material or equipment not incorporated in the Work but delivered and suitably stored at the site, during the current pay period.
- .3 The value, kind, and quantity of each item of material or equipment not incorporated in the Work but suitably stored at some other location agreed upon in writing, during the current pay period.
- .4 All Change Orders approved up to the date of the Application for Payment.
- .5 The amounts approved for payment for each item on previous applications.

10.4 PAYMENT FOR STORED MATERIALS

10.4.1 The Contractor shall include in such Application for Payment only such materials as are incorporated in the Work. Except however, the Contractor may include the value of materials or equipment delivered at the site of the Work (or at some location agreed to in writing) upon delivery to the Owner of:

- .1 an acceptable Transfer of Title; and
- .2 receipted invoices or other acceptable proof of prior payment by the Contractor for such materials; and
- .3 a stored materials insurance binder (see subparagraph 16.5.2) that covers the materials for which payment is requested, that names the Owner and the Department as an insured party should the stored materials be subjected to any casualty, loss, or theft prior to their inclusion in the Work.

10.4.2 This materials) or equipment must, in the judgment of the Architect:

- .1 meet the requirements of the Contract, including prior shop drawing, product data, and sample approval; and
- .2 be ready for use; and
- .3 be property stored by the Contractor and adequately protected until incorporated into the Work.

10.4.3 Failure to comply with subparagraphs 10.4.1 and 10.4.2 may result in Certificates being changed in accordance with M.G.L. c.30 §39K.

10.5 CERTIFICATES FOR PAYMENT

10.5.1 The Engineer shall mark the date of receipt on the Contractor's Application for Payment. The Engineer will, within

seven days after receipt of the Contractor's Application for Payment either,

- .1 issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Engineer determines is properly due, or
- .2 return the application to the Contractor if it is not in proper form or contains computations not arithmetically correct or
- .3 make changes to the application as provided in subparagraph 10.5.2.

10.5.2 The Engineer shall notify the Contractor and Owner in writing of the Engineer's reasons for withholding certification in whole or in part as provided in subparagraphs 10.6.1.2 and 10.6.1.3.

10.5.3 The Owner may make changes in any Application for Payment submitted by the Contractor in accordance with M.G.L. c.30 §39K, and the payment due on said Application for Payment shall be computed in accordance with the changes so made. The provisions of said Section 39K shall govern payments pursuant to Applications for Payment on which the Owner has made changes.

10.5.4 No certificate for payment nor any progress payment shall constitute acceptance of Work not in accordance with the Contract Documents.

10.6 STATUTORY PAYMENT PROVISIONS

10.6.1 After the Engineer has issued a Certificate for Payment the Owner shall make payment to the Contractor in accordance with M.G.L. c.30 §39K which provides as follows:

- .1 Within 30 days after receipt from the Contractor, at the place designated by the Owner if such a place is so designated, of a periodic estimate requesting payment of the amount due for the preceding month, the Owner will make a periodic payment to the Contractor for the Work performed during the preceding month and for the materials not incorporated in the Work but delivered and suitably stored at the site (or at some location agreed upon in writing) to which the Contractor has title or to which a Subcontractor has title and has authorized the Contractor to transfer title to the Owner, less (1) a retention based on its estimate of the fair value of its claims against the Contractor and less (2) a retention for direct payments to Subcontractors based on demands for same in accordance with the provisions of Section 39F, and less (3) a retention not exceeding five percent (5%) of the approved amount of the periodic payment.
- .2 After the receipt of a periodic estimate requesting final payment and within 65 days after (a) the Contractor fully completes the Work or substantially completes the work so that the value of the Work remaining to be done is, in the estimate of the Owner, less than one percent (1 %) of the original Contract Sum, or (b) the Contractor substantially completes the Work and the Owner takes possession for occupancy, whichever occurs first, the Owner shall pay the Contractor the entire balance due on the Contract less, (1) a retention based on its estimate of the fair value of its claims against the Contractor and of the cost of completing the incomplete and unsatisfactory items of Work less (2) a retention for direct payments to Subcontractors based on demands for same in accordance with the provisions of Section 39F, or based on the record of payments by the Contractor to the Subcontractors under this Contract if such record of payment indicates that the Contractor has not paid Subcontractors as provided in Section 39F.
- .3 If the Owner fails to make payment as herein provided, there shall be added to each such payment daily interest at the rate of three percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the Contractor, provided, that no interest shall be due, in any event, on the amount due on a periodic estimate for final payment until forty -five days after receipt of such a periodic estimate from the Contractor, at the place designated by the Owner if such a place is so designated. The Contractor agrees to pay to each Subcontractor a portion of any such interest paid in accordance with the amount due each Subcontractor.

10.6.2 DIRECT PAYMENT TO SUBCONTRACTORS

10.6.2.1 The Contractor shall make payments to filed Subcontractors in accordance with M.G.L c.30 §39F which provides as follows:

- .1 Forthwith after the Contractor receives payment on account of a periodic estimate,, the Contractor shall pay to each Subcontractor the amount paid for the labor performed and the materials furnished by the Subcontractor, less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the Subcontractor by the Contractor.
- .2 Not later than the 65th day after each Subcontractor substantially completes the Work in accordance with the plans and specifications, the entire balance due under the subcontract less amounts retained by the Owner as the estimated cost of completing the incomplete and unsatisfactory items of Work, shall be due the Subcontractor and the Owner shall pay that amount to the Contractor. The Contractor shall forthwith pay to the Subcontractor the full amount received from the Owner less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the Subcontractor by the Contractor.
- .3 Each payment made by the Owner to the Contractor pursuant to Subparagraphs .1 and .2 of this paragraph for the labor performed and the materials furnished by a Subcontractor shall be made to the Contractor for the account of that Subcontractor and the Owner shall take reasonable steps to compel the Contractor to make each such payment to each such Subcontractor. If the Owner has received a demand for direct payment from a Subcontractor for any amount which has already been included in a payment to the Contractor or which is to be included in a payment to the Contractor for payment to the Subcontractor as provided in Subparagraphs. 1 and .2, the Owner shall act upon the demand as provided in this section.
- .4 If, within 70 days after the Subcontractor has substantially completed the Subcontract Work, the Subcontractor has not received from the Contractor the balance due under the Subcontract including any amount due for extra labor and materials furnished to the Contractor, less any amount retained by the Owner as the estimated cost of completing the incomplete and unsatisfactory items of Work, the Subcontractor may demand direct payment of that balance from the Owner. The demand shall be by a sworn statement delivered to or sent by certified mail to the Owner, and a copy shall

be valid even if delivered or mailed prior to the seventieth day after the Subcontractor has substantially completed the Subcontract Work. Within ten days after the Subcontractor has delivered or so mailed a copy to the Contractor, the Contractor may reply to the demand. The reply shall be by a sworn statement delivered to or sent by certified mail to the Owner, and a copy shall be delivered to or sent by certified mail to the Subcontractor at the same time. The reply shall contain a detailed breakdown of the balance due under the Subcontract including any amount due for extra labor and materials furnished to the Contractor and of the amount due for each claim made by the Contractor and of the amount due for each claim made by the Contractor against the Subcontractor.

- .5 Within 15 days after receipt of the demand by the Owner but in no event prior to the 70th day after substantial completion of the Subcontract Work, the Owner shall make direct payment to the Subcontractor of the balance due under the Subcontract including any amount due for extra labor and materials furnished to the Contractor, less any amount (i) retained by the Owner as the estimated cost of completing the incomplete or unsatisfactory items of Work, (ii) specified in any court proceedings barring such payment, or (iii) disputed by the Contractor in the sworn reply; provided, that the Owner shall not deduct from a direct payment any amount as provided in part (iii) if the reply is not sworn to, or for which the sworn reply does not contain the detailed breakdown required by Subparagraph .4. The Owner shall make further direct payments to the Subcontractor forthwith after the removal of the basis for deductions from direct payments made as provided in part (i) and (ii) of this Subparagraph.
- .6 The Owner shall forthwith deposit the amount deducted from a direct payment as provided in part (iii) of Subparagraph .5 in an interest-bearing joint account in the names of the Contractor and the Subcontractor in a bank in Massachusetts selected by the Owner or agreed upon by the Contractor and the Subcontractor and shall notify the Contractor and the Subcontractor of the date of the deposit and the bank receiving the deposit. The bank shall pay the amount in the account, including accrued interest, as provided in an agreement between the Contractor and the Subcontractor or as determined by decree of a court of competent jurisdiction.
- .7 All direct payments and all deductions from demands for direct payments deposited in an interest-bearing account or accounts in a bank pursuant to Subparagraph .6 shall be made out of amounts payable to the General Contractor at the time of receipt of a demand for direct payment from a Subcontractor or out of amounts which later become payable to the Contractor and in order of receipt of such demands from Subcontractors. All direct payments shall discharge the obligation of the Owner to the Contractor to the extent of such payment.
- .8 The Owner shall deduct from payments to the Contractor amounts which, together with the deposits in interest bearing accounts pursuant to Subparagraph .6, are sufficient to satisfy all unpaid balances of demands for direct payment received from Subcontractors. All such amounts shall be earmarked for such direct payments, and the Subcontractors shall have a right to such deductions prior to any claims against such amounts by creditors of the Contractor.
- .9 If the Subcontractor does not receive payment as provided in Subparagraph .1 or if the Contractor does not submit a periodic estimate for the value of the labor and materials performed or furnished by the Subcontractor and the Subcontractor does not receive payment for same when due less the deductions provided for in Subparagraph .1, the Subcontractor may demand direct payment by following the procedure in Subparagraph .4 and the Contractor may file a sworn reply as provided in that same Subparagraph. A demand made after the first day of the month following that for which the Subcontractor performed or furnished the labor and materials for which the Subcontractor seeks payment shall be valid even if delivered or mailed prior to the time payment was due on a periodic estimate from the Contractor. Thereafter the Owner shall proceed as provided in Subparagraphs .5, .6, .7, and .8.

10.7 FINAL PAYMENT

10.7.1 Upon completion of the Work, the Contractor shall be entitled to payment of the Contract balance, in accordance with Subparagraph 10.6.1.2 and per the process described in Division 1 of the Specifications.

10.7.2 The acceptance by the Contractor of the last payment due under this Contract or the execution of the Final Certificate of Completion, shall operate as a release to the Owner, Department, and the Engineer from all claims and liability related to this Contract.

10.8 PAYMENT LIABILITIES OF CONTRACTOR

10.8.1 The Contractor shall be responsible to the Owner for all expenses, losses, and damages incurred in consequence of any defect, omission, or mistake of the Contractor or any of its employees, Subcontractors, or suppliers.

10.8.2 The Owner may retain any moneys which would otherwise be payable under this Contract and apply the same, or so much as may be necessary therefor, to the payment of any expenses, losses, or damages incurred by the Owner as a direct result of the Contractor's failure to perform its obligations hereunder.

ARTICLE 11 GUARANTEES AND WARRANTIES

11.1 GENERAL GUARANTY

If at any time during the period of one (1) year from the date of Substantial Completion as defined in Paragraph 9.6, any part of the Work shall, in the reasonable determination of the Engineer or Owner, require replacing or repairing due to the fact that it is broken, defective, or otherwise does not conform to the Contract Documents, the Owner will notify the Contractor to make the required repairs or replacement.

11.2 If the Contractor shall neglect to commence such repairs or replacement to the satisfaction of the Owner within ten (10) days from the date of giving or mailing such notice, then the Owner may employ other persons to make the same.

11.3 The Contractor agrees, upon demand, to pay to the Owner all amounts which the Owner expends for such repairs or replacements.

11.4 During this one year guarantee period any corrective work shall be performed in accordance with the applicable terms of this Contract. For items of work completed after use and occupancy has been taken, the one year guarantee shall commence at the time the Owner accepts such items.

11.5 This one year guarantee shall not limit any express guaranty or warranty provided elsewhere in the Contract.

11.2 SPECIAL GUARANTEES AND WARRANTIES

11.2.1 Guarantees and warranties required in the various sections of the Specifications must be delivered to the Engineer before final payment to the Contractor may be made, or in the case of guarantees and warranties which originate with a Subcontractor's section of the Work, before final payment for the amount of that subtrade or for the phase of Work to which the guarantee or warranty relates.

11.2.2 The failure to deliver a required guarantee or warranty shall constitute a failure to fully complete the Work in accordance with the Contract Documents.

11.2.3 The Contractor's obligation to correct Work as set forth in Paragraph 4.12 is in addition to, and not in substitution of, such guarantees or warranties as may be required in the various Sections of the Specifications.

ARTICLE 12 MISCELLANEOUS LEGAL REQUIREMENTS

12.1 GENERAL

The Contractor shall stay fully informed of all existing and future state and national laws and municipal ordinances and regulations in any manner affecting those engaged or employed in the work, or the materials used or employed in the work, or in any way affecting the conduct of the Work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the Contract Work. All provisions of law that apply to this Contract are hereby made a part of this Contract. If any discrepancy or inconsistency is discovered in the Contract Documents in relation to any such law, ordinance, regulation, order or decree, the Contractor shall forthwith report the same to the Owner in writing.

12.1.1 The Contractor shall cause all of its agents and employees to observe and comply with all such existing and future laws, ordinances, regulations, orders and decrees.

12.2 CORPORATE DISCLOSURES

The Contractor, if a foreign corporation, shall comply with M.G.L. c. 181 §3 and §5, and M.G.L. c.30 §39L.

12.3 VETERANS PREFERENCE

In the employment of mechanics and apprentices, teamsters, chauffeurs, and laborers in the construction of public works in the Commonwealth, preference shall first be given to citizens of the Commonwealth who have been residents of the Commonwealth for at least six months at the commencement of their employment and who are veterans as defined M. G. L. c. 4 §7 (34). and who are qualified to perform the work to which the employment relates; and secondly, to citizens of the Commonwealth generally who have been residents of the Commonwealth for at least six months at the commencement of their employment, and if they cannot be obtained in sufficient numbers, then to citizens of the United States.

12.4 PREVAILING WAGE RATES

The Director of the Department of Labor and Workforce Development has established the Schedule found in Division One of the Specifications, listing the prevailing minimum wage rates that must be paid to all workers employed on the Contract. Such Schedule shall continue to be the minimum rate of wages payable to workers on this Contract throughout the term of the Contract. The Contractor shall not have any claim for extra compensation from the Owner if the actual wages paid to employees on the Contract exceeds the rates listed on the Schedule. The Contractor shall cause a copy of said Schedule to be kept in a conspicuous place at the Project site during the term of the Contract (See M.G.L.c. 149 §26-27H.). If reserve police officers are employed by the Contractor, they shall be paid the prevailing wage of regular police officers. (See M.G.L.c. 149 §34B).

12.5 VEHICLE AND EQUIPMENT OPERATORS

If the Director of the Department of Labor and Workforce Development has established a Schedule of wage rates to be paid to the operators of trucks, vehicles or equipment for this Project, the Contractor shall be obligated to pay such operators at least the minimum wage rate contained on such Schedule. (See M.G.L.c. 149 §26-27H).

12.6 EIGHT HOUR DAY AND LODGING

12.6.1 No laborer, workman, mechanic, foreman or inspector working in the employment of the Contractor, Subcontractor or other person doing or contracting to do the whole or part of the Work, shall be required or permitted to work any more than eight hours in any one day, or more than 48 hours in any one week, or more than six days in any one week, except in cases of emergency.

12.6.2 Every employee on the Work shall lodge, board, and trade where and with whom he/she elects, and the Contractor and any Subcontractor shall not directly or indirectly require, as a condition of employment that an employee lodge, board, or trade at a particular place or with a particular person.

12.7 EXECUTIVE ORDERS

The Contractor shall comply with the provisions of MGL C.151B; Executive Order No. 227, Governor's Code of Fair Practices, Executive Order No. 237 pertaining to minority and women business development; Executive Order No. 246 pertaining to the handicapped and all regulations promulgated pursuant thereto. The aforementioned law, Executive Orders, and regulations are incorporated herein by reference and made a part of this Contract.

ARTICLE 13 - NOT USED -

ARTICLE 14 EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS

14.1 DEFINITIONS

For purposes of this Article 14, the following additional definitions shall apply:

14.1.1 "Minority" means Asian-Americans, Blacks, Western Hemisphere Hispanic Americans, North American Indians, Eskimos and Aleuts, and Cape Verdeans.

14.1.2 "Commission" or "MCAD" means the Massachusetts Commission Against Discrimination.

14.1.3 "E.E.O. Officer" or Equal Employment Opportunity Officer means those persons designated by the Contractor, the Owner, or any other agency or party having jurisdiction under this contract, that serve in a capacity to implement this Article.

14.2 CONDITIONS

14.2.1 The provisions of this Article 14 shall apply to the Contractor and all Subcontractors.

14.2.2 The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, age, handicap, or sex. The aforesaid provision shall include, but not be Limited to, the following: employment upgrading, demotion or transfer; recruitment advertising; recruitment layoff; termination; rates of pay or other forms of compensation; conditions or privileges of employment, and selection for apprenticeship.

14.2.3 The Contractor shall post notices provided by the Commission, in conspicuous places, setting forth the provisions of the Fair Employment Practices Law of the Commonwealth.

14.2.4 The Contractor shall undertake in good faith affirmative action measures designed to eliminate any discriminatory barriers in the terms and conditions of employment on the grounds of race, color, religious creed, national

origin, age, handicap, or sex, and to eliminate and remedy any effects of such discrimination in the past. Such affirmative action shall entail positive and aggressive measures to ensure equal opportunity in the areas of hiring, upgrading, demotion or transfer, recruitment layoff or termination, rate of compensation, and in-service or apprenticeship training programs. This affirmative action shall include all action required to guarantee equal employment opportunity for all persons, regardless of race, color, religious creed, national origin, age or sex.

14.2.5 The Contractor shall not discriminate on grounds of race, color, religious creed, national origin, age, or sex in employment practices, in the selection or retention of Subcontractors, or in the procurement of materials and rentals of equipment.

14.2.6 The Commission and a designee of the Owner shall have access to the construction site and all applicable records of the Contractor and Subcontractors.

14.2.7 The Contractor's EEO Certificate must be signed by the low general and all filed sub-bidders as a condition of Contract validation by the Department.

14.3 MINORITY GOAL

14.3.1 The provisions of paragraphs 14.3-14.9 shall only apply to contracts with an advertised estimated value of \$100,000 or more.

14.3.2 The Contractor shall maintain a percent ratio of minority- employee man-hours in each job category not less than the percentages found in Section 01100 of the Specifications. Such job categories shall include but not be limited to those "Classes of Work" enumerated in M.G.L. c.149 §44F and for trades covered by Item 1 of the Contractor's bid.

14.4 REFERRALS

14.4.1 In the hiring of minority journeymen, apprentices, trainees and advanced trainees, the Contractor shall rely on referrals from a multi-employer affirmative action-program approved by the Department or the Commission; and traditional referral methods utilized by the construction industry, where such referrals are needed to meet minority hiring requirements. The Contractor shall keep accurate records of such requests for referrals.

14.4.3 Records of employment referral orders, prepared by the Contractor, shall be made available to the Owner and to the Department upon request.

14.5 WORK FORCE TABLES

14.5.1 The Contractor shall provide the weekly and quarterly information to the Owner on copies of forms that can be found in the Section 01110 of these Specifications.

14.6 COMPLIANCE - REPORTS AND INFORMATION

The Contractor shall provide all information and reports required by the Owner or the Department and will permit access to its facilities and to any books, records, accounts and other sources of information which may be determined by the Owner or the Department to affect the employment of personnel. Where information required is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the Owner or the Department as appropriate and shall set forth what efforts have been made to obtain the information.

14.7 COMPLIANCE - INVESTIGATIONS

14.7.1 Whenever the Owner's EEO Officer, the MCAD, or the Department believes the Contractor may not be operating in compliance with the terms of these requirements, the Department shall conduct an investigation, and may confer with the parties, to verify such allegations. The Department shall not initiate an investigation without prior notice to the Contractor.

14.7.2 If the Department finds the Contractor in non-compliance, it shall make a preliminary report, and notify the Contractor in writing of the steps necessary to bring such Contractor into compliance. A copy of this report shall be sent to the Department's Affirmative Action Officer.

14.8 COMPLIANCE - DEPARTMENT - AFFIRMATIVE ACTION INVESTIGATION

14JJ.1 If the Contractor fails or refuses to fully perform the steps necessary to achieve compliance, the Department shall make a report of non-compliance to the Department's Affirmative Action Officer, who will then conduct an investigation.

14.8.2 Should the Department's Affirmative Action Officer find the Contractor in non-compliance a final report recommending the imposition of one or more of the sanctions listed below shall be issued.

14.8.3 Within fifteen (15) days of said report the Department shall, after due notice and giving the Contractor an opportunity to respond, move to impose one or more of the following sanctions to attain compliance.

14.8.4 If the Department's Affirmative Action Office believes the Contractor has taken or is taking every possible measure to achieve compliance, a report shall show the Contractor is in compliance.

14.9 SANCTIONS

14.9.1 For each week that the Contractor fails or refuses to comply, the Department may recover from the Contractor, 1/100 of 1% of the original Contract Sum or \$1000 whichever sum is greater, in the nature of liquidated damages.

14.9.2 If a Subcontractor is in non-compliance, the Department may recover from the Contractor, 1 /10 of 1 % of the Subcontract Sum, or \$400 whichever sum is greater, in the nature of liquidated damages, to be assessed by the Contractor as a back charge against the Subcontractor for each week that Subcontractor fails or refuses to comply.

14.9.3 The Owner may suspend part or all of any payment due under the contract until such time as the Contractor or any Subcontractor is able to demonstrate compliance with the terms of the Contract;

14.9.4 The Owner may terminate, or cancel part or all of the Contract, in accordance with the provisions of Article 19. unless the Contractor or any Subcontractor is able to demonstrate, within a specified time, compliance with the terms of the Contract.

14.9.5 The Contactor may request the Department and Owner to suspend the sanctions conditionally. Whereupon the Department shall investigate corrective measures taken by the Contractor and shall either lift or re-impose the sanctions.

14.10 SEVERABILITY

The provisions of this article are severable, and if any of these provisions shall be held unconstitutional by any court of competent jurisdiction, the decision of such court shall not affect or impair any of the remaining provisions of the Contract.

**ARTICLE 16
INSURANCE**

16.1 INSURANCE REQUIREMENTS

16.1.1 The Contractor shall take out and maintain insurance coverage as listed in subparagraphs 16.2 - 16.8 with respect to the operations as well as the completed operations of this Contract. This insurance shall be provided at the Contractor's expense and shall be in full force and effect for the full term of the Contract.

16.1.2 All policies shall be issued by companies authorized to write that type of insurance under the laws of this Commonwealth of Massachusetts.

16.2 CONTRACTOR'S COMMERCIAL GENERAL LIABILITY

16.2.1 Provide the following minimum coverage with respect to the operations performed by any employee, Subcontractor, or supplier

Bodily Injun &	\$1,000,000. each occurrence
Property Damage	\$2,000,000. general aggregate
Products & Completed Operations	\$1,000,000. aggregate
Personal & Advertis ing Injury	\$1,000,000. each occurrence

16.2.2 This policy shall include coverage relating to explosion, collapse, and underground property damage.

16.2.3 This policy shall include contractual liability coverage.

16.2.4 The Contractor shall provide a separate Owner's and Contractor's Protective Liability policy in the name of the Owner, at the same limits listed above.

16.2.5 The completed operations coverage shall be maintained for a period of two (2) years after Substantial Completion as defined in subparagraph 9.6.1.

16.3 VEHICLE LIABILITY

Provide the following minimum coverage with respect to the operations of any employee, including coverage for owned, non-owned, and hired vehicles:

Bodily Injury and	\$ 1,000,000. each person
Property Damage	\$ 1,000,000. each accident
	Combined Single Limit of \$ 1,000,000

16.4 WORKER'S COMPENSATION

Provide the following coverage in accordance with M.G.L. c. 149 §34A and c. 152 as amended:

Worker's Compensation	
Coverage A	Provide Statutory Minimum
Employer's Liability	\$ 500,000. each accident
Coverage B	\$ 500,000. disease per employee
	\$ 500,000. disease policy aggregate

16.5 PROPERTY COVERAGE

16.5.1 Provide Special Perils coverage against loss or damage by fire and against loss or damage covered by the special perils insurance endorsement on all work included in this contract in an amount equal to at least 80% of Contract Amount.

16.5.2 When work will be completed on existing buildings owned by the Owner, the Contractor shall provide an installation floater, in the full amount of the Contract, for the requirements set forth in Subparagraph 16.5.

16.5.3 This policy and/or installation floater shall indicate if Stored Materials coverage is provided as required by Paragraph 10.4.

16.6.1 The policy or policies shall specifically state that they are for the benefit of and payable to the Owner, the Department, the Contractor, and all persons furnishing labor or labor and materials for the Contract Work, as their interests may appear

16.6.2 The Special Perils coverage shall include any costs for work performed by the Engineer or any consultant as the result of a loss experienced during the life of this contract.

16.7 OWNER AS ADDITIONAL INSURED

The Owner, Department and Engineer shall be named as additional insureds on the Contractor's Commercial Liability Policies.

16.8 CERTIFICATES OF INSURANCE, POLICIES

16.8.1 Certificates of insurance, acceptable to the Owner, shall be submitted to the Owner simultaneously with the execution of the Contract. Certificates shall indicate that the contractual liability coverage, and Owner's and Contractor's Protective Liability coverage is in force, as well as the deletions of the XCU exclusions.

16.8.2 The Contractor shall file the original and one certified copy of all policies with the Owner and one with the Department within sixty days after Contract award. If the Owner is damaged by the Contractor's failure to maintain such insurance and to so notify the Owner, then the Contractor shall be responsible for all reasonable costs attributable thereto.

16.9 CANCELLATION

Cancellation of any insurance required by this contract, whether by the insurer or the insured, shall not be valid unless written notice thereof is given by the party proposing cancellation to the other party and Owner at least thirty days prior to the effective date thereof, which shall be expressed in said notice.

**ARTICLE 17
INDEMNIFICATION**

The Contractor shall take all responsibility for the Work and take all precautions for preventing injuries to persons and property in or about the Work; shall bear all losses resulting from or on account of the amount or character of the Work. The Contractor shall pay or cause payment to be made for all labor performed or furnished and for all materials used or employed in carrying out this Contract. The Contractor shall assume the defense of, and indemnify and save harmless, the Engineer, the Owner, the Department and their officers and agents from all claims relating to: labor performed or furnished and materials used or employed for the Work; inventions, patents and patent rights used in and in doing the Work unless such patent infringement is due to a product or process specified by the Owner, injuries to any person or corporation received or sustained by or from the Contractor and any employees, and Subcontractors and employees, in doing the work, or in consequence of any improper materials, implements or labor used or employed therein; and any act, omission, or neglect of the Contractor and any employees.

**ARTICLE 18
PERFORMANCE AND PAYMENT BONDS**

18.1 CONTRACTOR BONDS

18.1.1 The Contractor shall provide the Owner with performance and payment (labor and materials) bonds in the form provided by the Department, executed by a surety licensed by the Commonwealth's Division of Insurance. Each such bond shall be in the amount of the Contract Sum.

18.1.2 If at any time prior to final payment to the Contractor, the Surety:

- .1 is adjudged bankrupt or has made a general assignment for the benefit of its creditors;
- .2 has liquidated all assets and has made a general assignment for the benefit of its creditors;
- .3 is placed in receivership;
- .4 otherwise petitions a state or federal court for protection from its creditors; or
- .5 allows its license to do business in Massachusetts to lapse or be revoked;

the Contractor shall, within 21 days of any such action listed above, provide the Owner with new performance and payment bonds as described in Paragraph 18.1.1. Such bonds shall be provided solely at the Contractor's expense.

18.2 SUBCONTRACTOR BONDS

18.2.1 The Contractor may list in its bid that any or all filed Subcontractors provide the Contractor with payment and performance bonds for the full amount of the Subcontract. The costs for said bonds shall be the responsibility of the Contractor.

18.2.2 In the event the Contractor lists in its bid that filed Subcontractors provide bonds, and subsequently waives the requirement, the Contractor shall provide the Owner with a certification that they understand if the filed subcontractor defaults or is terminated, the Contractor accepts full responsibility and costs related to said default or termination with a credit change order in an amount equal to the bond premium it would have paid had it required the filed Subcontractor to provide such bonds.

ARTICLE 19 TERMINATION

19.1 TERMINATION FOR CAUSE

19.1.1 The Owner may terminate this contract for cause if it determines that any of the following circumstances have occurred:

- .1 The Contractor is adjudged bankrupt or has made a general assignment for the benefit of its creditors;
- .2 A receiver has been appointed of the Contractor's property;
- .3 All or a part of the Work has been abandoned;
- .4 The Contractor has sublet or assigned all or any portion of the Work, the Contract, or claims thereunder, without the prior written consent of the Owner, except as provided in the Contract;
- .5 The Engineer has determined that the rate of progress required on the project is not being met, or
- .6 The Contractor has substantially violated any provisions of this Contract

19.1.2 In the event of such termination, the Owner may hold the Contractor and its sureties liable in damages as for a breach of contract, or the Owner may notify the Contractor to discontinue all work, or any part thereof, and the Contractor shall discontinue all work, or any part thereof, as the Owner may designate.

19.1.3 The Owner may complete the work, or any part thereof, and charge the expense of completing the Work or part thereof, to the Contractor.

19.1.4 The Owner may take possession of and use any materials, machinery, implements and tools found upon the site of said Work. The Owner shall not be liable for any depreciation, loss or damage to said materials, machinery, implements or tools during said use and the Contractor shall be solely responsible for their removal from the Project site after the Owner has no further use for them.

19.1.5 The Owner may, at its option, require the surety or sureties to complete the Contract.

19.2 TERMINATION LIABILITIES

19.2.1 All expenses charged under Paragraph 19.1 shall be deducted and paid by the Owner out of any moneys then due or to become due the Contractor under this Contract; and in such accounting the Owner shall not be held to obtain the lowest figures, by competitive bid or otherwise, for the completion of the Work or any part thereof.

19.2.2 All sums actually paid by the Owner to complete the Work shall be charged to the Contractor. In case the expenses charged are less than the sum which would have been payable under this Contract if the same had been

completed by the Contractor, the Contractor shall be entitled to receive the difference. In case such expenses shall exceed the said sum, the Contractor shall pay the amount of the excess to the Owner.

19.2.3 Expenses incurred under subparagraph 19.1 shall also include, but not be limited to, costs for Engineering extra services and Project Representative services required, in the opinion of the Owner, to successfully inspect and administer the construction contract through final completion, as described in Paragraph 9.7.

19.3 TERMINATION-NO FAULT

19.3.1 In the event that this Contract is terminated by the Owner, and termination is not based on a reason listed in Paragraph 19.1, the Contractor shall be compensated for its costs incurred on the Project, including reasonable costs of de-mobilization, calculated on a percent completion basis as provided in Article 10, covering the period of time between the last periodic payment and the date of termination.

19.3.2 Payment by the Owner pursuant to Subparagraph 19.3.1 shall be considered to fully compensate the Contractor for all claims and expenses and those of any consultants, Subcontractors, and suppliers, directly or indirectly attributable to the termination, including any claims for lost profits.

19.4 ADMINISTRATOR'S APPROVAL

Termination of the Contract requires the prior approval of the Department.



DEVAL L. PATRICK
Governor

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

Prevailing Wage Rates

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

RACHEL KAPRIELIAN
Secretary
HEATHER E. ROWE
Director

Awarding Authority: Division of Fisheries and Wildlife
Contract Number: DFW_2015_009 **City/Town:** SUNDERLAND
Description of Work: Complete and functional removal/construction of reinforced CMU foundation walls, wooden sills, windows/doors, interior slabs-on-grade, exterior asphalt pavemens at Sunderland Fish Hatchery.
Job Location: 559 Amherst Road

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2014	\$31.30	\$9.91	\$9.33	\$0.00	\$50.54
	06/01/2015	\$31.65	\$9.91	\$9.33	\$0.00	\$50.89
	08/01/2015	\$31.65	\$10.41	\$9.33	\$0.00	\$51.39
	12/01/2015	\$31.65	\$10.41	\$10.08	\$0.00	\$52.14
	06/01/2016	\$32.15	\$10.41	\$10.08	\$0.00	\$52.64
	08/01/2016	\$32.15	\$10.91	\$10.08	\$0.00	\$53.14
	12/01/2016	\$32.15	\$10.91	\$10.89	\$0.00	\$53.95
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2014	\$31.37	\$9.91	\$9.33	\$0.00	\$50.61
	06/01/2015	\$31.72	\$9.91	\$9.33	\$0.00	\$50.96
	08/01/2015	\$31.72	\$10.41	\$9.33	\$0.00	\$51.46
	12/01/2015	\$31.72	\$10.41	\$10.08	\$0.00	\$52.21
	06/01/2016	\$32.22	\$10.41	\$10.08	\$0.00	\$52.71
	08/01/2016	\$32.22	\$10.91	\$10.08	\$0.00	\$53.21
	12/01/2016	\$32.22	\$10.91	\$10.89	\$0.00	\$54.02
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2014	\$31.49	\$9.91	\$9.33	\$0.00	\$50.73
	06/01/2015	\$31.84	\$9.91	\$9.33	\$0.00	\$51.08
	08/01/2015	\$31.84	\$10.41	\$9.33	\$0.00	\$51.58
	12/01/2015	\$31.84	\$10.41	\$10.08	\$0.00	\$52.33
	06/01/2016	\$32.34	\$10.41	\$10.08	\$0.00	\$52.83
	08/01/2016	\$32.34	\$10.91	\$10.08	\$0.00	\$53.33
	12/01/2016	\$32.34	\$10.91	\$10.89	\$0.00	\$54.14
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 3)</i>	08/01/2014	\$87.36	\$9.80	\$18.17	\$0.00	\$115.33
	08/01/2015	\$90.51	\$9.80	\$18.17	\$0.00	\$118.48
AIR TRACK OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$29.24	\$7.30	\$11.15	\$0.00	\$47.69
	06/01/2015	\$29.93	\$7.30	\$11.15	\$0.00	\$48.38
	12/07/2015	\$30.61	\$7.30	\$11.15	\$0.00	\$49.06
	06/06/2016	\$31.30	\$7.30	\$11.15	\$0.00	\$49.75
	12/05/2016	\$31.98	\$7.30	\$11.15	\$0.00	\$50.43
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$28.74	\$7.30	\$10.18	\$0.00	\$46.22
	06/01/2015	\$29.24	\$7.30	\$10.18	\$0.00	\$46.72
	12/01/2015	\$29.74	\$7.30	\$10.18	\$0.00	\$47.22
	06/01/2016	\$30.24	\$7.30	\$10.18	\$0.00	\$47.72
	12/01/2016	\$30.99	\$7.30	\$10.18	\$0.00	\$48.47
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS WORKER (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (SPRINGFIELD)</i>	12/01/2014	\$29.23	\$10.40	\$5.45	\$0.00	\$45.08
	06/01/2015	\$30.09	\$10.40	\$5.45	\$0.00	\$45.94
	12/01/2015	\$30.94	\$10.40	\$5.45	\$0.00	\$46.79
ASPHALT RAKER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.74	\$7.30	\$11.15	\$0.00	\$47.19
	06/01/2015	\$29.43	\$7.30	\$11.15	\$0.00	\$47.88
	12/07/2015	\$30.11	\$7.30	\$11.15	\$0.00	\$48.56
	06/06/2016	\$30.80	\$7.30	\$11.15	\$0.00	\$49.25
	12/05/2016	\$31.48	\$7.30	\$11.15	\$0.00	\$49.93
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$28.24	\$7.30	\$10.18	\$0.00	\$45.72
	06/01/2015	\$28.74	\$7.30	\$10.18	\$0.00	\$46.22
	12/01/2015	\$29.24	\$7.30	\$10.18	\$0.00	\$46.72
	06/01/2016	\$29.74	\$7.30	\$10.18	\$0.00	\$47.22
	12/01/2016	\$30.49	\$7.30	\$10.18	\$0.00	\$47.97
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
AUTOMATIC GRADER-EXCAVATOR (RECLAIMER) <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.69	\$9.70	\$11.00	\$0.00	\$53.39
	06/01/2015	\$33.44	\$9.70	\$11.00	\$0.00	\$54.14
	12/01/2015	\$34.19	\$9.70	\$11.00	\$0.00	\$54.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER OPERATOR <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.69	\$9.70	\$11.00	\$0.00	\$53.39
	06/01/2015	\$33.44	\$9.70	\$11.00	\$0.00	\$54.14
	12/01/2015	\$34.19	\$9.70	\$11.00	\$0.00	\$54.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.74	\$7.30	\$11.15	\$0.00	\$47.19
	06/01/2015	\$29.43	\$7.30	\$11.15	\$0.00	\$47.88
	12/07/2015	\$30.11	\$7.30	\$11.15	\$0.00	\$48.56
	06/06/2016	\$30.80	\$7.30	\$11.15	\$0.00	\$49.25
	12/05/2016	\$31.48	\$7.30	\$11.15	\$0.00	\$49.93
For apprentice rates see "Apprentice- LABORER"						
BATCH/CEMENT PLANT - ON SITE <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.16	\$9.70	\$11.00	\$0.00	\$52.86
	06/01/2015	\$32.91	\$9.70	\$11.00	\$0.00	\$53.61
	12/01/2015	\$33.66	\$9.70	\$11.00	\$0.00	\$54.36
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$29.24	\$7.30	\$11.15	\$0.00	\$47.69
	06/01/2015	\$29.93	\$7.30	\$11.15	\$0.00	\$48.38
	12/07/2015	\$30.61	\$7.30	\$11.15	\$0.00	\$49.06
	06/06/2016	\$31.30	\$7.30	\$11.15	\$0.00	\$49.75
	12/05/2016	\$31.98	\$7.30	\$11.15	\$0.00	\$50.43
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$28.74	\$7.30	\$10.18	\$0.00	\$46.22
	06/01/2015	\$29.24	\$7.30	\$10.18	\$0.00	\$46.72
	12/01/2015	\$29.74	\$7.30	\$10.18	\$0.00	\$47.22
	06/01/2016	\$30.24	\$7.30	\$10.18	\$0.00	\$47.72
	12/01/2016	\$30.99	\$7.30	\$10.18	\$0.00	\$48.47
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2010	\$37.70	\$6.97	\$11.18	\$0.00	\$55.85

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2010

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$24.51	\$6.97	\$11.18	\$0.00	\$42.66
2	65	\$24.51	\$6.97	\$11.18	\$0.00	\$42.66
3	70	\$26.39	\$6.97	\$11.18	\$0.00	\$44.54
4	75	\$28.28	\$6.97	\$11.18	\$0.00	\$46.43
5	80	\$30.16	\$6.97	\$11.18	\$0.00	\$48.31
6	85	\$32.05	\$6.97	\$11.18	\$0.00	\$50.20
7	90	\$33.93	\$6.97	\$11.18	\$0.00	\$52.08
8	95	\$35.82	\$6.97	\$11.18	\$0.00	\$53.97

Notes:

Apprentice to Journeyworker Ratio:1:5

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	09/01/2014	\$37.46	\$10.18	\$16.38	\$0.00	\$64.02
BRICKLAYERS LOCAL 3 (SPRINGFIELD/PITTSFIELD)	03/02/2015	\$38.02	\$10.18	\$16.38	\$0.00	\$64.58
	08/31/2015	\$38.92	\$10.18	\$16.45	\$0.00	\$65.55
	02/29/2016	\$39.49	\$10.18	\$16.45	\$0.00	\$66.12
	09/05/2016	\$40.39	\$10.18	\$16.53	\$0.00	\$67.10
	02/27/2017	\$40.96	\$10.18	\$16.53	\$0.00	\$67.67

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

Effective Date - 09/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.73	\$10.18	\$16.38	\$0.00	\$45.29
2	60	\$22.48	\$10.18	\$16.38	\$0.00	\$49.04
3	70	\$26.22	\$10.18	\$16.38	\$0.00	\$52.78
4	80	\$29.97	\$10.18	\$16.38	\$0.00	\$56.53
5	90	\$33.71	\$10.18	\$16.38	\$0.00	\$60.27

Effective Date - 03/02/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.01	\$10.18	\$16.38	\$0.00	\$45.57
2	60	\$22.81	\$10.18	\$16.38	\$0.00	\$49.37
3	70	\$26.61	\$10.18	\$16.38	\$0.00	\$53.17
4	80	\$30.42	\$10.18	\$16.38	\$0.00	\$56.98
5	90	\$34.22	\$10.18	\$16.38	\$0.00	\$60.78

Notes:

Apprentice to Journeyworker Ratio:1:5

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BULLDOZER/POWER SHOVEL/TREE SHREDDER /CLAM SHELL OPERATING ENGINEERS LOCAL 98	12/01/2014	\$32.69	\$9.70	\$11.00	\$0.00	\$53.39
	06/01/2015	\$33.44	\$9.70	\$11.00	\$0.00	\$54.14
	12/01/2015	\$34.19	\$9.70	\$11.00	\$0.00	\$54.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CAISSON & UNDERPINNING BOTTOM MAN LABORERS - FOUNDATION AND MARINE	12/01/2014	\$35.70	\$7.30	\$13.15	\$0.00	\$56.15
	06/01/2015	\$36.45	\$7.30	\$13.15	\$0.00	\$56.90
	12/01/2015	\$37.20	\$7.30	\$13.15	\$0.00	\$57.65
	06/01/2016	\$37.95	\$7.30	\$13.15	\$0.00	\$58.40
	12/01/2016	\$38.95	\$7.30	\$13.15	\$0.00	\$59.40
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING LABORER LABORERS - FOUNDATION AND MARINE	12/01/2014	\$34.55	\$7.30	\$13.15	\$0.00	\$55.00
	06/01/2015	\$35.30	\$7.30	\$13.15	\$0.00	\$55.75
	12/01/2015	\$36.05	\$7.30	\$13.15	\$0.00	\$56.50
	06/01/2016	\$36.80	\$7.30	\$13.15	\$0.00	\$57.25
	12/01/2016	\$37.80	\$7.30	\$13.15	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN LABORERS - FOUNDATION AND MARINE	12/01/2014	\$34.55	\$7.30	\$13.15	\$0.00	\$55.00
	06/01/2015	\$35.30	\$7.30	\$13.15	\$0.00	\$55.75
	12/01/2015	\$36.05	\$7.30	\$13.15	\$0.00	\$56.50
	06/01/2016	\$36.80	\$7.30	\$13.15	\$0.00	\$57.25
	12/01/2016	\$37.80	\$7.30	\$13.15	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR LABORERS - ZONE 3 (BUILDING & SITE)	12/01/2014	\$28.74	\$7.30	\$11.15	\$0.00	\$47.19
	06/01/2015	\$29.43	\$7.30	\$11.15	\$0.00	\$47.88
	12/07/2015	\$30.11	\$7.30	\$11.15	\$0.00	\$48.56
	06/06/2016	\$30.80	\$7.30	\$11.15	\$0.00	\$49.25
	12/05/2016	\$31.48	\$7.30	\$11.15	\$0.00	\$49.93
For apprentice rates see "Apprentice- LABORER"						
CARPENTER CARPENTERS LOCAL 108 - HAMPDEN HAMPSHIRE	09/01/2014	\$31.79	\$7.80	\$14.21	\$0.00	\$53.80
	03/02/2015	\$32.59	\$7.80	\$14.21	\$0.00	\$54.60
	08/31/2015	\$33.39	\$7.80	\$14.21	\$0.00	\$55.40
	02/29/2016	\$34.14	\$7.80	\$14.21	\$0.00	\$56.15

Apprentice - CARPENTER - Local 108 Hampden Hampshire

Effective Date - 09/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.90	\$7.80	\$1.14	\$0.00	\$24.84
2	60	\$19.07	\$7.80	\$1.14	\$0.00	\$28.01
3	70	\$22.25	\$7.80	\$10.79	\$0.00	\$40.84
4	75	\$23.84	\$7.80	\$10.79	\$0.00	\$42.43
5	80	\$25.43	\$7.80	\$11.93	\$0.00	\$45.16
6	80	\$25.43	\$7.80	\$11.93	\$0.00	\$45.16
7	90	\$28.61	\$7.80	\$13.07	\$0.00	\$49.48
8	90	\$28.61	\$7.80	\$13.07	\$0.00	\$49.48

Effective Date - 03/02/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.30	\$7.80	\$1.14	\$0.00	\$25.24
2	60	\$19.55	\$7.80	\$1.14	\$0.00	\$28.49
3	70	\$22.81	\$7.80	\$10.79	\$0.00	\$41.40
4	75	\$24.44	\$7.80	\$10.79	\$0.00	\$43.03
5	80	\$26.07	\$7.80	\$11.93	\$0.00	\$45.80
6	80	\$26.07	\$7.80	\$11.93	\$0.00	\$45.80
7	90	\$29.33	\$7.80	\$13.07	\$0.00	\$50.20
8	90	\$29.33	\$7.80	\$13.07	\$0.00	\$50.20

Notes: Pre-6/09 Step1\$24.45/2\$26.03/3\$41.08/4\$44.26/5\$47.44/6\$49.03
 ** 1: 1-5/2: 6-8/3:9-11/Steps: 6 mos (600 hrs)/rates by step
 7\$50.62/8\$52.21

Apprentice to Journeyworker Ratio:**

CEMENT MASONRY/PLASTERING	01/01/2015	\$38.36	\$10.85	\$13.94	\$1.30	\$64.45
BRICKLAYERS LOCAL 3 (SPRINGFIELD/PITTSFIELD)	07/01/2015	\$39.32	\$10.85	\$13.94	\$1.30	\$65.41
	01/01/2016	\$39.90	\$10.85	\$13.94	\$1.30	\$65.99

Apprentice - CEMENT MASONRY/PLASTERING - Springfield/Pittsfield

Effective Date - 01/01/2015

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

Notes: Apprentice wages shall be no less than the following Steps;
 1\$47.55/2\$53.67/3\$56.99/4\$60.30/5\$63.61/6\$66.93/7\$72.55
 Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CHAIN SAW OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.74	\$7.30	\$11.15	\$0.00	\$47.19
	06/01/2015	\$29.43	\$7.30	\$11.15	\$0.00	\$47.88
	12/07/2015	\$30.11	\$7.30	\$11.15	\$0.00	\$48.56
	06/06/2016	\$30.80	\$7.30	\$11.15	\$0.00	\$49.25
	12/05/2016	\$31.48	\$7.30	\$11.15	\$0.00	\$49.93
For apprentice rates see "Apprentice- LABORER"						
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.16	\$9.70	\$11.00	\$0.00	\$52.86
	06/01/2015	\$32.91	\$9.70	\$11.00	\$0.00	\$53.61
	12/01/2015	\$33.66	\$9.70	\$11.00	\$0.00	\$54.36
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CRANE OPERATOR <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$36.19	\$9.70	\$11.00	\$0.00	\$56.89
	06/01/2015	\$36.94	\$9.70	\$11.00	\$0.00	\$57.64
	12/01/2015	\$37.69	\$9.70	\$11.00	\$0.00	\$58.39
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 3</i>	01/01/2015	\$47.66	\$7.85	\$16.10	\$0.00	\$71.61
	07/01/2015	\$48.56	\$7.85	\$16.10	\$0.00	\$72.51
	01/01/2016	\$49.51	\$7.85	\$16.10	\$0.00	\$73.46
	07/01/2016	\$50.46	\$7.85	\$16.10	\$0.00	\$74.41
	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.83	\$7.85	\$0.00	\$0.00	\$31.68
2	55	\$26.21	\$7.85	\$3.66	\$0.00	\$37.72
3	60	\$28.60	\$7.85	\$3.99	\$0.00	\$40.44
4	65	\$30.98	\$7.85	\$4.32	\$0.00	\$43.15
5	70	\$33.36	\$7.85	\$14.11	\$0.00	\$55.32
6	75	\$35.75	\$7.85	\$14.44	\$0.00	\$58.04
7	80	\$38.13	\$7.85	\$14.77	\$0.00	\$60.75
8	90	\$42.89	\$7.85	\$15.44	\$0.00	\$66.18

Effective Date - 07/01/2015

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

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN LABORERS - ZONE 3 (BUILDING & SITE)	12/01/2014	\$34.75	\$7.30	\$12.95	\$0.00	\$55.00
	06/01/2015	\$35.50	\$7.30	\$12.95	\$0.00	\$55.75
	12/01/2015	\$36.25	\$7.30	\$12.95	\$0.00	\$56.50

For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 3 (BUILDING & SITE)	12/01/2014	\$35.75	\$7.30	\$12.95	\$0.00	\$56.00
	06/01/2015	\$36.50	\$7.30	\$12.95	\$0.00	\$56.75
	12/01/2015	\$37.25	\$7.30	\$12.95	\$0.00	\$57.50

For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS LABORERS - ZONE 3 (BUILDING & SITE)	12/01/2014	\$35.50	\$7.30	\$12.95	\$0.00	\$55.75
	06/01/2015	\$36.25	\$7.30	\$12.95	\$0.00	\$56.50
	12/01/2015	\$37.00	\$7.30	\$12.95	\$0.00	\$57.25

For apprentice rates see "Apprentice- LABORER"

DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 3 (BUILDING & SITE)	12/01/2014	\$35.75	\$7.30	\$12.95	\$0.00	\$56.00
	06/01/2015	\$36.50	\$7.30	\$12.95	\$0.00	\$56.75
	12/01/2015	\$37.25	\$7.30	\$12.95	\$0.00	\$57.50

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$35.50	\$7.30	\$12.95	\$0.00	\$55.75
	06/01/2015	\$36.25	\$7.30	\$12.95	\$0.00	\$56.50
	12/01/2015	\$37.00	\$7.30	\$12.95	\$0.00	\$57.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$34.75	\$7.30	\$12.95	\$0.00	\$55.00
	06/01/2015	\$35.50	\$7.30	\$12.95	\$0.00	\$55.75
	12/01/2015	\$36.25	\$7.30	\$12.95	\$0.00	\$56.50
For apprentice rates see "Apprentice- LABORER"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 3)</i>	08/01/2014	\$58.24	\$9.80	\$18.17	\$0.00	\$86.21
	08/01/2015	\$60.34	\$9.80	\$18.17	\$0.00	\$88.31
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 3)</i>	08/01/2014	\$41.60	\$9.80	\$18.17	\$0.00	\$69.57
	08/01/2015	\$43.10	\$9.80	\$18.17	\$0.00	\$71.07
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 3)</i>	08/01/2014	\$62.40	\$9.80	\$18.17	\$0.00	\$90.37
	08/01/2015	\$64.65	\$9.80	\$18.17	\$0.00	\$92.62
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 3)</i>	08/01/2014	\$87.36	\$9.80	\$18.17	\$0.00	\$115.33
	08/01/2015	\$90.51	\$9.80	\$18.17	\$0.00	\$118.48
ELECTRICIAN (Including Core Drilling) <i>ELECTRICIANS LOCAL 7</i>	12/29/2014	\$37.71	\$9.05	\$9.48	\$0.00	\$56.24
	06/28/2015	\$38.51	\$9.05	\$9.48	\$0.00	\$57.04
	01/03/2016	\$39.36	\$9.05	\$9.48	\$0.00	\$57.89
	07/03/2016	\$40.26	\$9.05	\$9.48	\$0.00	\$58.79
	01/01/2017	\$41.16	\$9.05	\$9.48	\$0.00	\$59.69

Apprentice - ELECTRICIAN - Local 7

Effective Date - 12/29/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$15.08	\$4.00	\$0.45	\$0.00	\$19.53
2	45	\$16.97	\$4.00	\$0.45	\$0.00	\$21.42
3	50	\$18.86	\$9.05	\$5.30	\$0.00	\$33.21
4	55	\$20.74	\$9.05	\$5.30	\$0.00	\$35.09
5	65	\$24.51	\$9.05	\$6.30	\$0.00	\$39.86
6	70	\$26.40	\$9.05	\$7.30	\$0.00	\$42.75

Effective Date - 06/28/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$15.40	\$4.00	\$0.46	\$0.00	\$19.86
2	45	\$17.33	\$4.00	\$0.46	\$0.00	\$21.79
3	50	\$19.26	\$9.05	\$5.31	\$0.00	\$33.62
4	55	\$21.18	\$9.05	\$5.31	\$0.00	\$35.54
5	65	\$25.03	\$9.05	\$6.31	\$0.00	\$40.39
6	70	\$26.96	\$9.05	\$7.31	\$0.00	\$43.32

Notes: Pre-5/31/11 Begins at Step 3 \$37.66/4 \$39.54/5 \$43.88/6 \$45.94
Steps 1-2 are 1000 hrs; Steps 3-6 are 1500 hrs.

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ELEVATOR CONSTRUCTOR <i>ELEVATOR CONSTRUCTORS LOCAL 41</i>	01/01/2015	\$47.73	\$13.58	\$14.21	\$0.00	\$75.52
	01/01/2016	\$48.77	\$14.43	\$14.96	\$0.00	\$78.16
	01/01/2017	\$49.90	\$15.28	\$15.71	\$0.00	\$80.89

Apprentice - ELEVATOR CONSTRUCTOR - Local 41

Effective Date - 01/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.87	\$13.58	\$14.21	\$0.00	\$51.66
2	55	\$26.25	\$13.58	\$14.21	\$0.00	\$54.04
3	65	\$31.02	\$13.58	\$14.21	\$0.00	\$58.81
4	70	\$33.41	\$13.58	\$14.21	\$0.00	\$61.20
5	80	\$38.18	\$13.58	\$14.21	\$0.00	\$65.97

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.39	\$14.43	\$14.96	\$0.00	\$53.78
2	55	\$26.82	\$14.43	\$14.96	\$0.00	\$56.21
3	65	\$31.70	\$14.43	\$14.96	\$0.00	\$61.09
4	70	\$34.14	\$14.43	\$14.96	\$0.00	\$63.53
5	80	\$39.02	\$14.43	\$14.96	\$0.00	\$68.41

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>	01/01/2015	\$33.41	\$13.58	\$14.21	\$0.00	\$61.20
	01/01/2016	\$34.14	\$14.43	\$14.96	\$0.00	\$63.53
	01/01/2017	\$34.93	\$15.28	\$15.71	\$0.00	\$65.92

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$28.24	\$7.30	\$10.18	\$0.00	\$45.72
	06/01/2015	\$28.74	\$7.30	\$10.18	\$0.00	\$46.22
	12/01/2015	\$29.24	\$7.30	\$10.18	\$0.00	\$46.72
	06/01/2016	\$29.74	\$7.30	\$10.18	\$0.00	\$47.22
	12/01/2016	\$30.49	\$7.30	\$10.18	\$0.00	\$47.97

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

FIELD ENG.INST/ROD-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 98</i>	06/01/1999	\$18.84	\$4.80	\$4.10	\$0.00	\$27.74
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FIELD ENG.PARTY CHIEF:BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 98</i>	06/01/1999	\$21.33	\$4.80	\$4.10	\$0.00	\$30.23
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FIELD ENG.SURVEY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 98</i>	06/01/1999	\$22.33	\$4.80	\$4.10	\$0.00	\$31.23
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FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 7</i>	12/29/2014	\$37.71	\$9.05	\$9.48	\$0.00	\$56.24
	06/28/2015	\$38.51	\$9.05	\$9.48	\$0.00	\$57.04
	01/03/2016	\$39.36	\$9.05	\$9.48	\$0.00	\$57.89
	07/03/2016	\$40.26	\$9.05	\$9.48	\$0.00	\$58.79
	01/01/2017	\$41.16	\$9.05	\$9.48	\$0.00	\$59.69

For apprentice rates see "Apprentice- ELECTRICIAN"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS</i>	12/29/2014	\$37.71	\$9.05	\$9.48	\$0.00	\$56.24
<i>LOCAL 7</i>	06/28/2015	\$38.51	\$9.05	\$9.48	\$0.00	\$57.04
	01/03/2016	\$39.36	\$9.05	\$9.48	\$0.00	\$57.89
	07/03/2016	\$40.26	\$9.05	\$9.48	\$0.00	\$58.79
	01/01/2017	\$41.16	\$9.05	\$9.48	\$0.00	\$59.69
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.16	\$9.70	\$11.00	\$0.00	\$52.86
	06/01/2015	\$32.91	\$9.70	\$11.00	\$0.00	\$53.61
	12/01/2015	\$33.66	\$9.70	\$11.00	\$0.00	\$54.36

Apprentice - OPERATING ENGINEERS - Local 98 Class 3

Effective Date - 12/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.30	\$9.70	\$11.00	\$0.00	\$40.00
2	70	\$22.51	\$9.70	\$11.00	\$0.00	\$43.21
3	80	\$25.73	\$9.70	\$11.00	\$0.00	\$46.43
4	90	\$28.94	\$9.70	\$11.00	\$0.00	\$49.64

Effective Date - 06/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.75	\$9.70	\$11.00	\$0.00	\$40.45
2	70	\$23.04	\$9.70	\$11.00	\$0.00	\$43.74
3	80	\$26.33	\$9.70	\$11.00	\$0.00	\$47.03
4	90	\$29.62	\$9.70	\$11.00	\$0.00	\$50.32

Notes:

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

Apprentice to Journeyworker Ratio:1:6

FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$20.50	\$7.30	\$10.18	\$0.00	\$37.98
	06/01/2015	\$20.50	\$7.30	\$10.18	\$0.00	\$37.98
	12/01/2015	\$20.50	\$7.30	\$10.18	\$0.00	\$37.98
	06/01/2016	\$20.50	\$7.30	\$10.18	\$0.00	\$37.98
	12/01/2016	\$20.50	\$7.30	\$10.18	\$0.00	\$37.98

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

FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE III</i>	09/01/2014	\$31.79	\$7.80	\$13.96	\$0.00	\$53.55
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - FLOORCOVERER - Local 2168 Zone III

Effective Date - 09/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.90	\$7.80	\$1.12	\$0.00	\$24.82
2	55	\$17.48	\$7.80	\$1.12	\$0.00	\$26.40
3	60	\$19.07	\$7.80	\$10.51	\$0.00	\$37.38
4	65	\$20.66	\$7.80	\$10.51	\$0.00	\$38.97
5	70	\$22.25	\$7.80	\$11.66	\$0.00	\$41.71
6	75	\$23.84	\$7.80	\$11.66	\$0.00	\$43.30
7	80	\$25.43	\$7.80	\$12.81	\$0.00	\$46.04
8	85	\$27.02	\$7.80	\$12.81	\$0.00	\$47.63

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

FORK LIFT <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.38	\$9.70	\$11.00	\$0.00	\$53.08
	06/01/2015	\$33.13	\$9.70	\$11.00	\$0.00	\$53.83
	12/01/2015	\$33.88	\$9.70	\$11.00	\$0.00	\$54.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATORS/LIGHTING PLANTS <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$28.93	\$9.70	\$11.00	\$0.00	\$49.63
	06/01/2015	\$29.68	\$9.70	\$11.00	\$0.00	\$50.38
	12/01/2015	\$30.43	\$9.70	\$11.00	\$0.00	\$51.13
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 1333</i>	06/01/2014	\$34.58	\$9.80	\$7.75	\$0.00	\$52.13
	06/01/2015	\$35.08	\$10.25	\$8.00	\$0.00	\$53.33
	06/01/2016	\$35.58	\$10.70	\$8.25	\$0.00	\$54.53

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - GLAZIER - Local 1333

Effective Date - 06/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.29	\$9.80	\$1.00	\$0.00	\$28.09
2	56	\$19.45	\$9.80	\$1.00	\$0.00	\$30.25
3	63	\$21.61	\$9.80	\$1.50	\$0.00	\$32.91
4	69	\$23.77	\$9.80	\$1.50	\$0.00	\$35.07
5	75	\$25.94	\$9.80	\$2.00	\$0.00	\$37.74
6	81	\$28.10	\$9.80	\$2.00	\$0.00	\$39.90
7	88	\$30.26	\$9.80	\$7.75	\$0.00	\$47.81
8	94	\$32.42	\$9.80	\$7.75	\$0.00	\$49.97

Effective Date - 06/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.54	\$10.25	\$1.00	\$0.00	\$28.79
2	56	\$19.73	\$10.25	\$1.00	\$0.00	\$30.98
3	63	\$21.93	\$10.25	\$1.50	\$0.00	\$33.68
4	69	\$24.12	\$10.25	\$1.50	\$0.00	\$35.87
5	75	\$26.31	\$10.25	\$2.00	\$0.00	\$38.56
6	81	\$28.50	\$10.25	\$2.00	\$0.00	\$40.75
7	88	\$30.70	\$10.25	\$8.00	\$0.00	\$48.95
8	94	\$32.89	\$10.25	\$8.00	\$0.00	\$51.14

Notes:

Apprentice to Journeyworker Ratio:1:3

GRADER/TRENCHING MACHINE/DERRICK <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.69	\$9.70	\$11.00	\$0.00	\$53.39
	06/01/2015	\$33.44	\$9.70	\$11.00	\$0.00	\$54.14
	12/01/2015	\$34.19	\$9.70	\$11.00	\$0.00	\$54.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 63</i>	01/01/2015	\$32.97	\$8.64	\$14.20	\$1.66	\$57.47
	07/01/2015	\$33.03	\$8.64	\$14.79	\$1.66	\$58.12
	01/01/2016	\$33.73	\$8.64	\$14.79	\$1.66	\$58.82
	07/01/2016	\$34.44	\$8.64	\$14.83	\$1.66	\$59.57
	01/01/2017	\$35.19	\$8.64	\$14.83	\$1.66	\$60.32

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 7</i>	12/29/2014	\$37.71	\$9.05	\$9.48	\$0.00	\$56.24
	06/28/2015	\$38.51	\$9.05	\$9.48	\$0.00	\$57.04
	01/03/2016	\$39.36	\$9.05	\$9.48	\$0.00	\$57.89
	07/03/2016	\$40.26	\$9.05	\$9.48	\$0.00	\$58.79
	01/01/2017	\$41.16	\$9.05	\$9.48	\$0.00	\$59.69

For apprentice rates see "Apprentice- ELECTRICIAN"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 63</i>	01/01/2015	\$32.97	\$8.64	\$14.20	\$1.66	\$57.47
	07/01/2015	\$33.03	\$8.64	\$14.79	\$1.66	\$58.12
	01/01/2016	\$33.73	\$8.64	\$14.79	\$1.66	\$58.82
	07/01/2016	\$34.44	\$8.64	\$14.83	\$1.66	\$59.57
	01/01/2017	\$35.19	\$8.64	\$14.83	\$1.66	\$60.32
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING -WATER) <i>PLUMBERS & PIPEFITTERS LOCAL 104</i>	09/17/2014	\$36.81	\$8.30	\$14.25	\$0.00	\$59.36
	03/17/2015	\$37.56	\$8.30	\$14.25	\$0.00	\$60.11
	09/17/2015	\$38.31	\$8.30	\$14.25	\$0.00	\$60.86
	03/17/2016	\$39.31	\$8.30	\$14.25	\$0.00	\$61.86
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PLUMBERS & PIPEFITTERS LOCAL 104</i>	09/17/2014	\$36.81	\$8.30	\$14.25	\$0.00	\$59.36
	03/17/2015	\$37.56	\$8.30	\$14.25	\$0.00	\$60.11
	09/17/2015	\$38.31	\$8.30	\$14.25	\$0.00	\$60.86
	03/17/2016	\$39.31	\$8.30	\$14.25	\$0.00	\$61.86
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$28.74	\$7.30	\$10.18	\$0.00	\$46.22
	06/01/2015	\$29.24	\$7.30	\$10.18	\$0.00	\$46.72
	12/01/2015	\$29.74	\$7.30	\$10.18	\$0.00	\$47.22
	06/01/2016	\$30.24	\$7.30	\$10.18	\$0.00	\$47.72
	12/01/2016	\$30.99	\$7.30	\$10.18	\$0.00	\$48.47
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (SPRINGFIELD)</i>	09/01/2014	\$34.65	\$11.25	\$12.60	\$0.00	\$58.50

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

Effective Date - 09/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.33	\$11.25	\$9.35	\$0.00	\$37.93
2	60	\$20.79	\$11.25	\$10.00	\$0.00	\$42.04
3	70	\$24.26	\$11.25	\$10.65	\$0.00	\$46.16
4	80	\$27.72	\$11.25	\$11.30	\$0.00	\$50.27

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (SPRINGFIELD AREA)</i>	03/16/2014	\$29.62	\$7.70	\$18.75	\$0.00	\$56.07
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - IRONWORKER - Local 7 Springfield

Effective Date - 03/16/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$17.77	\$7.70	\$18.75	\$0.00	\$44.22
2	70	\$20.73	\$7.70	\$18.75	\$0.00	\$47.18
3	75	\$22.22	\$7.70	\$18.75	\$0.00	\$48.67
4	80	\$23.70	\$7.70	\$18.75	\$0.00	\$50.15
5	85	\$25.18	\$7.70	\$18.75	\$0.00	\$51.63
6	90	\$26.66	\$7.70	\$18.75	\$0.00	\$53.11

Notes:
Structural 1:6; Ornamental 1:4

Apprentice to Journeyworker Ratio:

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 3 (BUILDING & SITE)	12/01/2014	\$28.74	\$7.30	\$11.15	\$0.00	\$47.19
	06/01/2015	\$29.43	\$7.30	\$11.15	\$0.00	\$47.88
	12/07/2015	\$30.11	\$7.30	\$11.15	\$0.00	\$48.56
	06/06/2016	\$30.80	\$7.30	\$11.15	\$0.00	\$49.25
	12/05/2016	\$31.48	\$7.30	\$11.15	\$0.00	\$49.93

For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 3 (BUILDING & SITE)	12/01/2014	\$28.49	\$7.30	\$11.15	\$0.00	\$46.94
	06/01/2015	\$29.18	\$7.30	\$11.15	\$0.00	\$47.63
	12/07/2015	\$29.86	\$7.30	\$11.15	\$0.00	\$48.31
	06/06/2016	\$30.55	\$7.30	\$11.15	\$0.00	\$49.00
	12/05/2016	\$31.23	\$7.30	\$11.15	\$0.00	\$49.68

Apprentice - LABORER - Zone 3 Building & Site

Effective Date - 12/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$17.09	\$7.30	\$11.15	\$0.00	\$35.54
2	70	\$19.94	\$7.30	\$11.15	\$0.00	\$38.39
3	80	\$22.79	\$7.30	\$11.15	\$0.00	\$41.24
4	90	\$25.64	\$7.30	\$11.15	\$0.00	\$44.09

Effective Date - 06/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$17.51	\$7.30	\$11.15	\$0.00	\$35.96
2	70	\$20.43	\$7.30	\$11.15	\$0.00	\$38.88
3	80	\$23.34	\$7.30	\$11.15	\$0.00	\$41.79
4	90	\$26.26	\$7.30	\$11.15	\$0.00	\$44.71

Notes:

Apprentice to Journeyworker Ratio:1:5

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$27.99	\$7.30	\$10.18	\$0.00	\$45.47
	06/01/2015	\$28.49	\$7.30	\$10.18	\$0.00	\$45.97
	12/01/2015	\$28.99	\$7.30	\$10.18	\$0.00	\$46.47
	06/01/2016	\$29.49	\$7.30	\$10.18	\$0.00	\$46.97
	12/01/2016	\$30.24	\$7.30	\$10.18	\$0.00	\$47.72

Apprentice - LABORER (Heavy & Highway) - Zone 3

Effective Date - 12/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.79	\$7.30	\$10.18	\$0.00	\$34.27
2	70	\$19.59	\$7.30	\$10.18	\$0.00	\$37.07
3	80	\$22.39	\$7.30	\$10.18	\$0.00	\$39.87
4	90	\$25.19	\$7.30	\$10.18	\$0.00	\$42.67

Effective Date - 06/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$17.09	\$7.30	\$10.18	\$0.00	\$34.57
2	70	\$19.94	\$7.30	\$10.18	\$0.00	\$37.42
3	80	\$22.79	\$7.30	\$10.18	\$0.00	\$40.27
4	90	\$25.64	\$7.30	\$10.18	\$0.00	\$43.12

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.49	\$7.30	\$11.15	\$0.00	\$46.94
	06/01/2015	\$29.18	\$7.30	\$11.15	\$0.00	\$47.63
	12/07/2015	\$29.86	\$7.30	\$11.15	\$0.00	\$48.31
	06/06/2016	\$30.55	\$7.30	\$11.15	\$0.00	\$49.00
	12/05/2016	\$31.23	\$7.30	\$11.15	\$0.00	\$49.68

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.74	\$7.30	\$11.15	\$0.00	\$47.19
	06/01/2015	\$29.43	\$7.30	\$11.15	\$0.00	\$47.88
	12/07/2015	\$30.11	\$7.30	\$11.15	\$0.00	\$48.56
	06/06/2016	\$30.80	\$7.30	\$11.15	\$0.00	\$49.25
	12/05/2016	\$31.48	\$7.30	\$11.15	\$0.00	\$49.93

For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.59	\$7.30	\$11.15	\$0.00	\$47.04
	06/01/2015	\$29.28	\$7.30	\$11.15	\$0.00	\$47.73
	12/07/2015	\$29.96	\$7.30	\$11.15	\$0.00	\$48.41

For apprentice rates see "Apprentice- LABORER"

LABORER: MASON TENDER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$29.49	\$7.30	\$11.15	\$0.00	\$47.94
	06/01/2015	\$30.18	\$7.30	\$11.15	\$0.00	\$48.63
	12/07/2015	\$30.86	\$7.30	\$11.15	\$0.00	\$49.31
	06/06/2016	\$31.55	\$7.30	\$11.15	\$0.00	\$50.00
	12/05/2016	\$32.23	\$7.30	\$11.15	\$0.00	\$50.68

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$28.24	\$7.30	\$10.18	\$0.00	\$45.72
	06/01/2015	\$28.74	\$7.30	\$10.18	\$0.00	\$46.22
	12/01/2015	\$29.24	\$7.30	\$10.18	\$0.00	\$46.72
	06/01/2016	\$29.74	\$7.30	\$10.18	\$0.00	\$47.22
	12/01/2016	\$30.49	\$7.30	\$10.18	\$0.00	\$47.97
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.49	\$7.30	\$11.15	\$0.00	\$46.94
	06/01/2015	\$29.18	\$7.30	\$11.15	\$0.00	\$47.63
	12/07/2015	\$29.86	\$7.30	\$11.15	\$0.00	\$48.31
	06/06/2016	\$30.55	\$7.30	\$11.15	\$0.00	\$49.00
	12/05/2016	\$31.23	\$7.30	\$11.15	\$0.00	\$49.68
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.49	\$7.30	\$11.15	\$0.00	\$46.94
	06/01/2015	\$29.18	\$7.30	\$11.15	\$0.00	\$47.63
	12/07/2015	\$29.86	\$7.30	\$11.15	\$0.00	\$48.31
	06/06/2016	\$30.55	\$7.30	\$11.15	\$0.00	\$49.00
	12/05/2016	\$31.23	\$7.30	\$11.15	\$0.00	\$49.68
This classification applies to all tree work associated with the removal of standing trees, and trimming and removal of branches and limbs when the work is not done for a utility company for the purpose of operation, maintenance or repair of utility company equipment. For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.74	\$7.30	\$11.15	\$0.00	\$47.19
	06/01/2015	\$29.43	\$7.30	\$11.15	\$0.00	\$47.88
	12/07/2015	\$30.11	\$7.30	\$11.15	\$0.00	\$48.56
	06/06/2016	\$30.80	\$7.30	\$11.15	\$0.00	\$49.25
	12/05/2016	\$31.48	\$7.30	\$11.15	\$0.00	\$49.93
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$28.24	\$7.30	\$10.18	\$0.00	\$45.72
	06/01/2015	\$28.74	\$7.30	\$10.18	\$0.00	\$46.22
	12/01/2015	\$29.24	\$7.30	\$10.18	\$0.00	\$46.72
	06/01/2016	\$29.74	\$7.30	\$10.18	\$0.00	\$47.22
	12/01/2016	\$30.49	\$7.30	\$10.18	\$0.00	\$47.97
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE</i>	09/01/2014	\$30.85	\$10.18	\$16.07	\$0.00	\$57.10
	03/02/2015	\$31.41	\$10.18	\$16.07	\$0.00	\$57.66
	08/31/2015	\$32.32	\$10.18	\$16.13	\$0.00	\$58.63
	02/29/2016	\$32.89	\$10.18	\$16.13	\$0.00	\$59.20
	09/05/2016	\$33.80	\$10.18	\$16.20	\$0.00	\$60.18
	02/27/2017	\$34.37	\$10.18	\$16.20	\$0.00	\$60.75

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

Effective Date - 09/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.43	\$10.18	\$16.07	\$0.00	\$41.68
2	60	\$18.51	\$10.18	\$16.07	\$0.00	\$44.76
3	70	\$21.60	\$10.18	\$16.07	\$0.00	\$47.85
4	80	\$24.68	\$10.18	\$16.07	\$0.00	\$50.93
5	90	\$27.77	\$10.18	\$16.07	\$0.00	\$54.02

Effective Date - 03/02/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.71	\$10.18	\$16.07	\$0.00	\$41.96
2	60	\$18.85	\$10.18	\$16.07	\$0.00	\$45.10
3	70	\$21.99	\$10.18	\$16.07	\$0.00	\$48.24
4	80	\$25.13	\$10.18	\$16.07	\$0.00	\$51.38
5	90	\$28.27	\$10.18	\$16.07	\$0.00	\$54.52

Notes:

Apprentice to Journeyworker Ratio:1:5

MARBLE MASONS, TILELAYERS & TERRAZZO MECH	09/01/2014	\$37.46	\$10.18	\$16.38	\$0.00	\$64.02
BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE	03/02/2015	\$38.02	\$10.18	\$16.38	\$0.00	\$64.58
	08/31/2015	\$38.92	\$10.18	\$16.45	\$0.00	\$65.55
	02/29/2016	\$39.49	\$10.18	\$16.45	\$0.00	\$66.12
	09/05/2016	\$40.39	\$10.18	\$16.53	\$0.00	\$67.10
	02/27/2017	\$40.96	\$10.18	\$16.53	\$0.00	\$67.67

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 09/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.73	\$10.18	\$16.38	\$0.00	\$45.29
2	60	\$22.48	\$10.18	\$16.38	\$0.00	\$49.04
3	70	\$26.22	\$10.18	\$16.38	\$0.00	\$52.78
4	80	\$29.97	\$10.18	\$16.38	\$0.00	\$56.53
5	90	\$33.71	\$10.18	\$16.38	\$0.00	\$60.27

Effective Date - 03/02/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.01	\$10.18	\$16.38	\$0.00	\$45.57
2	60	\$22.81	\$10.18	\$16.38	\$0.00	\$49.37
3	70	\$26.61	\$10.18	\$16.38	\$0.00	\$53.17
4	80	\$30.42	\$10.18	\$16.38	\$0.00	\$56.98
5	90	\$34.22	\$10.18	\$16.38	\$0.00	\$60.78

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.69	\$9.70	\$11.00	\$0.00	\$53.39
	06/01/2015	\$33.44	\$9.70	\$11.00	\$0.00	\$54.14
	12/01/2015	\$34.19	\$9.70	\$11.00	\$0.00	\$54.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MECHANIC/WELDER/BOOM TRUCK <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.16	\$9.70	\$11.00	\$0.00	\$52.86
	06/01/2015	\$32.91	\$9.70	\$11.00	\$0.00	\$53.61
	12/01/2015	\$33.66	\$9.70	\$11.00	\$0.00	\$54.36
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MILLWRIGHT (Zone 3) <i>MILLWRIGHTS LOCAL 1121 - Zone 3</i>	10/01/2014	\$32.38	\$9.80	\$16.21	\$0.00	\$58.39
	04/01/2015	\$33.13	\$9.80	\$16.21	\$0.00	\$59.14

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - MILLWRIGHT - Local 1121 Zone 3

Effective Date - 10/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$17.81	\$9.80	\$4.48	\$0.00	\$32.09
2	65	\$21.05	\$9.80	\$13.36	\$0.00	\$44.21
3	75	\$24.29	\$9.80	\$14.18	\$0.00	\$48.27
4	85	\$27.52	\$9.80	\$14.99	\$0.00	\$52.31

Effective Date - 04/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$18.22	\$9.80	\$4.48	\$0.00	\$32.50
2	65	\$21.53	\$9.80	\$13.36	\$0.00	\$44.69
3	75	\$24.85	\$9.80	\$14.18	\$0.00	\$48.83
4	85	\$28.16	\$9.80	\$14.99	\$0.00	\$52.95

Notes:

Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:5

MORTAR MIXER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.74	\$7.30	\$11.15	\$0.00	\$47.19
	06/01/2015	\$29.43	\$7.30	\$11.15	\$0.00	\$47.88
	12/07/2015	\$30.11	\$7.30	\$11.15	\$0.00	\$48.56
	06/06/2016	\$30.80	\$7.30	\$11.15	\$0.00	\$49.25
	12/05/2016	\$31.48	\$7.30	\$11.15	\$0.00	\$49.93
For apprentice rates see "Apprentice- LABORER"						
OILER <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$27.85	\$9.70	\$11.00	\$0.00	\$48.55
	06/01/2015	\$28.60	\$9.70	\$11.00	\$0.00	\$49.30
	12/01/2015	\$29.35	\$9.70	\$11.00	\$0.00	\$50.05
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OTHER POWER DRIVEN EQUIPMENT - CLASS VI <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$25.87	\$9.70	\$11.00	\$0.00	\$46.57
	06/01/2015	\$26.62	\$9.70	\$11.00	\$0.00	\$47.32
	12/01/2015	\$27.37	\$9.70	\$11.00	\$0.00	\$48.07
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 3</i>	01/01/2015	\$47.66	\$7.85	\$16.10	\$0.00	\$71.61
	07/01/2015	\$48.56	\$7.85	\$16.10	\$0.00	\$72.51
	01/01/2016	\$49.51	\$7.85	\$16.10	\$0.00	\$73.46
	07/01/2016	\$50.46	\$7.85	\$16.10	\$0.00	\$74.41
	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.83	\$7.85	\$0.00	\$0.00	\$31.68
2	55	\$26.21	\$7.85	\$3.66	\$0.00	\$37.72
3	60	\$28.60	\$7.85	\$3.99	\$0.00	\$40.44
4	65	\$30.98	\$7.85	\$4.32	\$0.00	\$43.15
5	70	\$33.36	\$7.85	\$14.11	\$0.00	\$55.32
6	75	\$35.75	\$7.85	\$14.44	\$0.00	\$58.04
7	80	\$38.13	\$7.85	\$14.77	\$0.00	\$60.75
8	90	\$42.89	\$7.85	\$15.44	\$0.00	\$66.18

Effective Date - 07/01/2015

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

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2015	\$31.23	\$7.85	\$12.30	\$0.00	\$51.38
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 3	07/01/2015	\$32.03	\$7.85	\$12.30	\$0.00	\$52.18
	01/01/2016	\$32.93	\$7.85	\$12.30	\$0.00	\$53.08
	07/01/2016	\$33.78	\$7.85	\$12.30	\$0.00	\$53.93
	01/01/2017	\$34.68	\$7.85	\$12.30	\$0.00	\$54.83

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

Effective Date - 01/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.62	\$7.85	\$0.00	\$0.00	\$23.47
2	55	\$17.18	\$7.85	\$1.57	\$0.00	\$26.60
3	60	\$18.74	\$7.85	\$1.71	\$0.00	\$28.30
4	65	\$20.30	\$7.85	\$1.85	\$0.00	\$30.00
5	70	\$21.86	\$7.85	\$11.45	\$0.00	\$41.16
6	75	\$23.42	\$7.85	\$11.59	\$0.00	\$42.86
7	80	\$24.98	\$7.85	\$11.73	\$0.00	\$44.56
8	90	\$28.11	\$7.85	\$12.02	\$0.00	\$47.98

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.02	\$7.85	\$0.00	\$0.00	\$23.87
2	55	\$17.62	\$7.85	\$1.57	\$0.00	\$27.04
3	60	\$19.22	\$7.85	\$1.71	\$0.00	\$28.78
4	65	\$20.82	\$7.85	\$1.85	\$0.00	\$30.52
5	70	\$22.42	\$7.85	\$11.45	\$0.00	\$41.72
6	75	\$24.02	\$7.85	\$11.59	\$0.00	\$43.46
7	80	\$25.62	\$7.85	\$11.73	\$0.00	\$45.20
8	90	\$28.83	\$7.85	\$12.02	\$0.00	\$48.70

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)	01/01/2015	\$28.55	\$7.85	\$12.30	\$0.00	\$48.70
PAINTERS LOCAL 35 - ZONE 3	07/01/2015	\$29.35	\$7.85	\$12.30	\$0.00	\$49.50
	01/01/2016	\$30.25	\$7.85	\$12.30	\$0.00	\$50.40
	07/01/2016	\$31.11	\$7.85	\$12.30	\$0.00	\$51.26
	01/01/2017	\$32.00	\$7.85	\$12.30	\$0.00	\$52.15

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

Effective Date - 01/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$14.28	\$7.85	\$0.00	\$0.00	\$22.13
2	55	\$15.70	\$7.85	\$1.57	\$0.00	\$25.12
3	60	\$17.13	\$7.85	\$1.71	\$0.00	\$26.69
4	65	\$18.56	\$7.85	\$1.85	\$0.00	\$28.26
5	70	\$19.99	\$7.85	\$11.45	\$0.00	\$39.29
6	75	\$21.41	\$7.85	\$11.59	\$0.00	\$40.85
7	80	\$22.84	\$7.85	\$11.73	\$0.00	\$42.42
8	90	\$25.70	\$7.85	\$12.02	\$0.00	\$45.57

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$14.68	\$7.85	\$0.00	\$0.00	\$22.53
2	55	\$16.14	\$7.85	\$1.57	\$0.00	\$25.56
3	60	\$17.61	\$7.85	\$1.71	\$0.00	\$27.17
4	65	\$19.08	\$7.85	\$1.85	\$0.00	\$28.78
5	70	\$20.55	\$7.85	\$11.45	\$0.00	\$39.85
6	75	\$22.01	\$7.85	\$11.59	\$0.00	\$41.45
7	80	\$23.48	\$7.85	\$11.73	\$0.00	\$43.06
8	90	\$26.42	\$7.85	\$12.02	\$0.00	\$46.29

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, NEW) *	01/01/2015	\$29.83	\$7.85	\$12.30	\$0.00	\$49.98
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. <i>PAINTERS LOCAL 35 - ZONE 3</i>	07/01/2015	\$30.63	\$7.85	\$12.30	\$0.00	\$50.78
	01/01/2016	\$31.53	\$7.85	\$12.30	\$0.00	\$51.68
	07/01/2016	\$32.38	\$7.85	\$12.30	\$0.00	\$52.53
	01/01/2017	\$33.28	\$7.85	\$12.30	\$0.00	\$53.43

Apprentice - PAINTER - Local 35 Zone 3 - BRUSH NEW

Effective Date - 01/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$14.92	\$7.85	\$0.00	\$0.00	\$22.77
2	55	\$16.41	\$7.85	\$1.57	\$0.00	\$25.83
3	60	\$17.90	\$7.85	\$1.71	\$0.00	\$27.46
4	65	\$19.39	\$7.85	\$1.85	\$0.00	\$29.09
5	70	\$20.88	\$7.85	\$11.45	\$0.00	\$40.18
6	75	\$22.37	\$7.85	\$11.59	\$0.00	\$41.81
7	80	\$23.86	\$7.85	\$11.73	\$0.00	\$43.44
8	90	\$26.85	\$7.85	\$12.02	\$0.00	\$46.72

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.32	\$7.85	\$0.00	\$0.00	\$23.17
2	55	\$16.85	\$7.85	\$1.57	\$0.00	\$26.27
3	60	\$18.38	\$7.85	\$1.71	\$0.00	\$27.94
4	65	\$19.91	\$7.85	\$1.85	\$0.00	\$29.61
5	70	\$21.44	\$7.85	\$11.45	\$0.00	\$40.74
6	75	\$22.97	\$7.85	\$11.59	\$0.00	\$42.41
7	80	\$24.50	\$7.85	\$11.73	\$0.00	\$44.08
8	90	\$27.57	\$7.85	\$12.02	\$0.00	\$47.44

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	01/01/2015	\$27.15	\$7.85	\$12.30	\$0.00	\$47.30
PAINTERS LOCAL 35 - ZONE 3	07/01/2015	\$27.95	\$7.85	\$12.30	\$0.00	\$48.10
	01/01/2016	\$28.85	\$7.85	\$12.30	\$0.00	\$49.00
	07/01/2016	\$29.70	\$7.85	\$12.30	\$0.00	\$49.85
	01/01/2017	\$30.60	\$7.85	\$12.30	\$0.00	\$50.75

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 3 - BRUSH REPAINT

Effective Date - 01/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$13.58	\$7.85	\$0.00	\$0.00	\$21.43
2	55	\$14.93	\$7.85	\$1.57	\$0.00	\$24.35
3	60	\$16.29	\$7.85	\$1.71	\$0.00	\$25.85
4	65	\$17.65	\$7.85	\$1.85	\$0.00	\$27.35
5	70	\$19.01	\$7.85	\$11.45	\$0.00	\$38.31
6	75	\$20.36	\$7.85	\$11.59	\$0.00	\$39.80
7	80	\$21.72	\$7.85	\$11.73	\$0.00	\$41.30
8	90	\$24.44	\$7.85	\$12.02	\$0.00	\$44.31

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$13.98	\$7.85	\$0.00	\$0.00	\$21.83
2	55	\$15.37	\$7.85	\$1.57	\$0.00	\$24.79
3	60	\$16.77	\$7.85	\$1.71	\$0.00	\$26.33
4	65	\$18.17	\$7.85	\$1.85	\$0.00	\$27.87
5	70	\$19.57	\$7.85	\$11.45	\$0.00	\$38.87
6	75	\$20.96	\$7.85	\$11.59	\$0.00	\$40.40
7	80	\$22.36	\$7.85	\$11.73	\$0.00	\$41.94
8	90	\$25.16	\$7.85	\$12.02	\$0.00	\$45.03

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY) LABORERS - ZONE 3 (HEAVY & HIGHWAY)	12/01/2014	\$27.99	\$7.30	\$10.18	\$0.00	\$45.47
	06/01/2015	\$28.49	\$7.30	\$10.18	\$0.00	\$45.97
	12/01/2015	\$28.99	\$7.30	\$10.18	\$0.00	\$46.47
	06/01/2016	\$29.49	\$7.30	\$10.18	\$0.00	\$46.97
	12/01/2016	\$30.24	\$7.30	\$10.18	\$0.00	\$47.72
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
PANEL & PICKUP TRUCKS DRIVER TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2012	\$30.28	\$9.07	\$8.00	\$0.00	\$47.35
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) PILE DRIVER LOCAL 56 (ZONE 3)	09/01/2014	\$37.80	\$9.80	\$17.67	\$0.00	\$65.27
	03/02/2015	\$38.20	\$9.80	\$17.67	\$0.00	\$65.67
	08/31/2015	\$39.35	\$9.80	\$17.67	\$0.00	\$66.82
PILE DRIVER PILE DRIVER LOCAL 56 (ZONE 3)	09/01/2014	\$37.45	\$9.80	\$18.17	\$0.00	\$65.42
	03/02/2015	\$37.85	\$9.80	\$18.17	\$0.00	\$65.82
	08/31/2015	\$39.00	\$9.80	\$18.17	\$0.00	\$66.97

Apprentice - PILE DRIVER - Local 56 Zone 3

Effective Date - 09/01/2014

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

Notes: Apprentice wages shall be no less than the following Steps;
 (Same as set in Zone 1)
 1\$49.52/2\$53.83/3\$58.14/4\$60.30/5\$62.45/6\$62.45/7\$66.76/8\$66.76

Apprentice to Journeyworker Ratio:1:3

PIPELAYER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.74	\$7.30	\$11.15	\$0.00	\$47.19
	06/01/2015	\$29.43	\$7.30	\$11.15	\$0.00	\$47.88
	12/07/2015	\$30.11	\$7.30	\$11.15	\$0.00	\$48.56
	06/06/2016	\$30.80	\$7.30	\$11.15	\$0.00	\$49.25
	12/05/2016	\$31.48	\$7.30	\$11.15	\$0.00	\$49.93

For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$28.24	\$7.30	\$10.18	\$0.00	\$45.72
	06/01/2015	\$28.74	\$7.30	\$10.18	\$0.00	\$46.22
	12/01/2015	\$29.24	\$7.30	\$10.18	\$0.00	\$46.72
	06/01/2016	\$29.74	\$7.30	\$10.18	\$0.00	\$47.22
	12/01/2016	\$30.49	\$7.30	\$10.18	\$0.00	\$47.97

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

PLUMBER & PIPEFITTER <i>PLUMBERS & PIPEFITTERS LOCAL 104</i>	09/17/2014	\$36.81	\$8.30	\$14.25	\$0.00	\$59.36
	03/17/2015	\$37.56	\$8.30	\$14.25	\$0.00	\$60.11
	09/17/2015	\$38.31	\$8.30	\$14.25	\$0.00	\$60.86
	03/17/2016	\$39.31	\$8.30	\$14.25	\$0.00	\$61.86

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PLUMBER/PIPEFITTER - Local 104

Effective Date - 09/17/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$16.56	\$8.30	\$8.40	\$0.00	\$33.26
2	50	\$18.41	\$8.30	\$8.40	\$0.00	\$35.11
3	60	\$22.09	\$8.30	\$8.40	\$0.00	\$38.79
4	70	\$25.77	\$8.30	\$8.40	\$0.00	\$42.47
5	80	\$29.45	\$8.30	\$14.25	\$0.00	\$52.00

Effective Date - 03/17/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$16.90	\$8.30	\$8.40	\$0.00	\$33.60
2	50	\$18.78	\$8.30	\$8.40	\$0.00	\$35.48
3	60	\$22.54	\$8.30	\$8.40	\$0.00	\$39.24
4	70	\$26.29	\$8.30	\$8.40	\$0.00	\$42.99
5	80	\$30.05	\$8.30	\$14.25	\$0.00	\$52.60

Notes:

Steps are 2000 hrs.

Apprentice to Journeyworker Ratio:1:5

PNEUMATIC CONTROLS (TEMP.) <i>PLUMBERS & PIPEFITTERS LOCAL 104</i>	09/17/2014	\$36.81	\$8.30	\$14.25	\$0.00	\$59.36
	03/17/2015	\$37.56	\$8.30	\$14.25	\$0.00	\$60.11
	09/17/2015	\$38.31	\$8.30	\$14.25	\$0.00	\$60.86
	03/17/2016	\$39.31	\$8.30	\$14.25	\$0.00	\$61.86

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

PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$28.24	\$7.30	\$10.18	\$0.00	\$45.72
	06/01/2015	\$28.74	\$7.30	\$10.18	\$0.00	\$46.22
	12/01/2015	\$29.24	\$7.30	\$10.18	\$0.00	\$46.72
	06/01/2016	\$29.74	\$7.30	\$10.18	\$0.00	\$47.22
	12/01/2016	\$30.49	\$7.30	\$10.18	\$0.00	\$47.97

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

POWDERMAN & BLASTER <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$29.49	\$7.30	\$11.15	\$0.00	\$47.94
	06/01/2015	\$30.18	\$7.30	\$11.15	\$0.00	\$48.63
	12/07/2015	\$30.86	\$7.30	\$11.15	\$0.00	\$49.31
	06/06/2016	\$31.55	\$7.30	\$11.15	\$0.00	\$50.00
	12/05/2016	\$32.23	\$7.30	\$11.15	\$0.00	\$50.68

For apprentice rates see "Apprentice- LABORER"

POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$28.99	\$7.30	\$10.18	\$0.00	\$46.47
	06/01/2015	\$29.49	\$7.30	\$10.18	\$0.00	\$46.97
	12/01/2015	\$29.99	\$7.30	\$10.18	\$0.00	\$47.47
	06/01/2016	\$30.49	\$7.30	\$10.18	\$0.00	\$47.97
	12/01/2016	\$31.24	\$7.30	\$10.18	\$0.00	\$48.72

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.69	\$9.70	\$11.00	\$0.00	\$53.39
	06/01/2015	\$33.44	\$9.70	\$11.00	\$0.00	\$54.14
	12/01/2015	\$34.19	\$9.70	\$11.00	\$0.00	\$54.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.16	\$9.70	\$11.00	\$0.00	\$52.86
	06/01/2015	\$32.91	\$9.70	\$11.00	\$0.00	\$53.61
	12/01/2015	\$33.66	\$9.70	\$11.00	\$0.00	\$54.36
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS LOCAL 404</i>	05/01/2014	\$20.56	\$9.57	\$8.50	\$0.00	\$38.63
	05/01/2015	\$20.78	\$9.92	\$9.09	\$0.00	\$39.79
	05/01/2016	\$21.01	\$10.23	\$9.40	\$0.00	\$40.64
RESIDENTIAL WOOD FRAME CARPENTER ** ** The Residential Wood Frame Carpenter classification applies only to the construction of new, wood frame residences that do not exceed four stories including the basement. <i>CARPENTERS LOCAL 108 - HAMPDEN HAMPSHIRE</i>	09/01/2014	\$24.46	\$7.20	\$5.35	\$0.00	\$37.01
	03/02/2015	\$25.26	\$7.20	\$5.35	\$0.00	\$37.81
	08/31/2015	\$26.06	\$7.20	\$5.35	\$0.00	\$38.61
	02/29/2016	\$26.81	\$7.20	\$5.35	\$0.00	\$39.36
As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.						

Apprentice - CARPENTER (Residential Wood Frame) - 108 Hampden Hampshire

Effective Date - 09/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$14.68	\$7.20	\$0.00	\$0.00	\$21.88
2	60	\$14.68	\$7.20	\$5.35	\$0.00	\$27.23
3	65	\$15.90	\$7.20	\$5.35	\$0.00	\$28.45
4	70	\$17.12	\$7.20	\$5.35	\$0.00	\$29.67
5	75	\$18.35	\$7.20	\$5.35	\$0.00	\$30.90
6	80	\$19.57	\$7.20	\$5.35	\$0.00	\$32.12
7	85	\$20.79	\$7.20	\$5.35	\$0.00	\$33.34
8	90	\$22.01	\$7.20	\$5.35	\$0.00	\$34.56

Effective Date - 03/02/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$15.16	\$7.20	\$0.00	\$0.00	\$22.36
2	60	\$15.16	\$7.20	\$5.35	\$0.00	\$27.71
3	65	\$16.42	\$7.20	\$5.35	\$0.00	\$28.97
4	70	\$17.68	\$7.20	\$5.35	\$0.00	\$30.23
5	75	\$18.95	\$7.20	\$5.35	\$0.00	\$31.50
6	80	\$20.21	\$7.20	\$5.35	\$0.00	\$32.76
7	85	\$21.47	\$7.20	\$5.35	\$0.00	\$34.02
8	90	\$22.73	\$7.20	\$5.35	\$0.00	\$35.28

Notes:

** 1: 1-5, 2: 6-8, 3: 9-11

Apprentice to Journeyworker Ratio:**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.74	\$7.30	\$11.15	\$0.00	\$47.19
	06/01/2015	\$29.43	\$7.30	\$11.15	\$0.00	\$47.88
	12/07/2015	\$30.11	\$7.30	\$11.15	\$0.00	\$48.56
	06/06/2016	\$30.80	\$7.30	\$11.15	\$0.00	\$49.25
	12/05/2016	\$31.48	\$7.30	\$11.15	\$0.00	\$49.93
For apprentice rates see "Apprentice- LABORER"						
ROLLER OPERATOR <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$31.55	\$9.70	\$11.00	\$0.00	\$52.25
	06/01/2015	\$32.30	\$9.70	\$11.00	\$0.00	\$53.00
	12/01/2015	\$33.05	\$9.70	\$11.00	\$0.00	\$53.75
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Coal tar pitch) <i>ROOFERS LOCAL 248</i>	07/16/2014	\$28.90	\$9.00	\$12.60	\$0.00	\$50.50
	07/16/2015	\$30.40	\$9.00	\$12.60	\$0.00	\$52.00
For apprentice rates see "Apprentice- ROOFER"						
ROOFER (Inc.Roofer Waterproofing &Roofer Damproofg) <i>ROOFERS LOCAL 248</i>	07/16/2014	\$28.40	\$9.00	\$12.10	\$0.00	\$49.50
	07/16/2015	\$29.90	\$9.00	\$12.10	\$0.00	\$51.00

Apprentice - ROOFER - Local 248

Effective Date - 07/16/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$17.04	\$9.00	\$0.00	\$0.00	\$26.04
2	65	\$18.46	\$9.00	\$12.10	\$0.00	\$39.56
3	70	\$19.88	\$9.00	\$12.10	\$0.00	\$40.98
4	75	\$21.30	\$9.00	\$12.10	\$0.00	\$42.40
5	80	\$22.72	\$9.00	\$12.10	\$0.00	\$43.82
6	85	\$24.14	\$9.00	\$12.10	\$0.00	\$45.24
7	90	\$25.56	\$9.00	\$12.10	\$0.00	\$46.66
8	95	\$26.98	\$9.00	\$12.10	\$0.00	\$48.08

Effective Date - 07/16/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$17.94	\$9.00	\$0.00	\$0.00	\$26.94
2	65	\$19.44	\$9.00	\$12.10	\$0.00	\$40.54
3	70	\$20.93	\$9.00	\$12.10	\$0.00	\$42.03
4	75	\$22.43	\$9.00	\$12.10	\$0.00	\$43.53
5	80	\$23.92	\$9.00	\$12.10	\$0.00	\$45.02
6	85	\$25.42	\$9.00	\$12.10	\$0.00	\$46.52
7	90	\$26.91	\$9.00	\$12.10	\$0.00	\$48.01
8	95	\$28.41	\$9.00	\$12.10	\$0.00	\$49.51

Notes:

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

Apprentice to Journeyworker Ratio:1:3

ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 248</i>	07/16/2014	\$28.90	\$9.00	\$12.60	\$0.00	\$50.50
	07/16/2015	\$30.40	\$9.00	\$12.60	\$0.00	\$52.00
For apprentice rates see "Apprentice- ROOFER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SCRAPER <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$32.16	\$9.70	\$11.00	\$0.00	\$52.86
	06/01/2015	\$32.91	\$9.70	\$11.00	\$0.00	\$53.61
	12/01/2015	\$33.66	\$9.70	\$11.00	\$0.00	\$54.36
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
SELF-POWERED ROLLERS AND COMPACTORS (TAMPERS) <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$31.55	\$9.70	\$11.00	\$0.00	\$52.25
	06/01/2015	\$32.30	\$9.70	\$11.00	\$0.00	\$53.00
	12/01/2015	\$33.05	\$9.70	\$11.00	\$0.00	\$53.75
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
SELF-PROPELLED POWER BROOM <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$28.93	\$9.70	\$11.00	\$0.00	\$49.63
	06/01/2015	\$29.68	\$9.70	\$11.00	\$0.00	\$50.38
	12/01/2015	\$30.43	\$9.70	\$11.00	\$0.00	\$51.13
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
SHEETMETAL WORKER <i>SHEETMETAL WORKERS LOCAL 63</i>	01/01/2015	\$32.97	\$8.64	\$14.20	\$1.66	\$57.47
	07/01/2015	\$33.03	\$8.64	\$14.79	\$1.66	\$58.12
	01/01/2016	\$33.73	\$8.64	\$14.79	\$1.66	\$58.82
	07/01/2016	\$34.44	\$8.64	\$14.83	\$1.66	\$59.57
	01/01/2017	\$35.19	\$8.64	\$14.83	\$1.66	\$60.32

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SHEET METAL WORKER - Local 63

Effective Date - 01/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$14.84	\$5.65	\$3.81	\$0.00	\$24.30
2	50	\$16.49	\$5.93	\$4.24	\$0.00	\$26.66
3	55	\$18.13	\$6.20	\$7.62	\$0.95	\$32.90
4	60	\$19.78	\$6.47	\$7.62	\$1.00	\$34.87
5	65	\$21.43	\$6.74	\$7.62	\$1.06	\$36.85
6	70	\$23.08	\$7.01	\$7.62	\$1.12	\$38.83
7	75	\$24.73	\$7.28	\$7.62	\$1.17	\$40.80
8	80	\$26.38	\$7.55	\$13.35	\$1.40	\$48.68
9	85	\$28.02	\$7.83	\$13.35	\$1.46	\$50.66
10	90	\$29.67	\$8.10	\$13.35	\$1.52	\$52.64

Effective Date - 07/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$14.86	\$5.65	\$4.08	\$0.00	\$24.59
2	50	\$16.52	\$5.93	\$4.53	\$0.00	\$26.98
3	55	\$18.17	\$6.20	\$8.15	\$0.98	\$33.50
4	60	\$19.82	\$6.47	\$8.15	\$1.03	\$35.47
5	65	\$21.47	\$6.74	\$8.15	\$1.08	\$37.44
6	70	\$23.12	\$7.01	\$8.15	\$1.15	\$39.43
7	75	\$24.77	\$7.28	\$8.15	\$1.21	\$41.41
8	80	\$26.42	\$7.55	\$13.88	\$1.44	\$49.29
9	85	\$28.08	\$7.83	\$13.88	\$1.50	\$51.29
10	90	\$29.73	\$8.10	\$13.88	\$1.55	\$53.26

Notes:

Apprentice to Journeyworker Ratio:1:3

SIGN ERECTOR PAINTERS LOCAL 35 - ZONE 3	06/01/2013	\$25.81	\$7.07	\$7.05	\$0.00	\$39.93
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SIGN ERECTOR - Local 35 Zone 3

Effective Date - 06/01/2013

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

Notes:
Steps are 4 mos.

Apprentice to Journeyworker Ratio:1:1

SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2014	\$31.59	\$9.91	\$9.33	\$0.00	\$50.83
	06/01/2015	\$31.94	\$9.91	\$9.33	\$0.00	\$51.18
	08/01/2015	\$31.94	\$10.41	\$9.33	\$0.00	\$51.68
	12/01/2015	\$31.94	\$10.41	\$10.08	\$0.00	\$52.43
	06/01/2016	\$32.44	\$10.41	\$10.08	\$0.00	\$52.93
	08/01/2016	\$32.44	\$10.91	\$10.08	\$0.00	\$53.43
	12/01/2016	\$32.44	\$10.91	\$10.89	\$0.00	\$54.24
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2014	\$31.88	\$9.91	\$9.33	\$0.00	\$51.12
	06/01/2015	\$32.23	\$9.91	\$9.33	\$0.00	\$51.47
	08/01/2015	\$32.23	\$10.41	\$9.33	\$0.00	\$51.97
	12/01/2015	\$32.23	\$10.41	\$10.08	\$0.00	\$52.72
	06/01/2016	\$32.73	\$10.41	\$10.08	\$0.00	\$53.22
	08/01/2016	\$32.73	\$10.91	\$10.08	\$0.00	\$53.72
	12/01/2016	\$32.73	\$10.91	\$10.89	\$0.00	\$54.53
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 669</i>	01/01/2015	\$37.26	\$8.52	\$11.98	\$0.00	\$57.76
	04/01/2015	\$38.01	\$8.52	\$11.98	\$0.00	\$58.51
	01/01/2016	\$38.01	\$8.52	\$12.13	\$0.00	\$58.66

Apprentice - SPRINKLER FITTER - Local 669

Effective Date - 01/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$16.77	\$7.45	\$0.00	\$0.00	\$24.22
2	50	\$18.63	\$7.45	\$0.00	\$0.00	\$26.08
3	55	\$20.49	\$8.52	\$6.15	\$0.00	\$35.16
4	60	\$22.36	\$8.52	\$6.15	\$0.00	\$37.03
5	65	\$24.22	\$8.52	\$6.40	\$0.00	\$39.14
6	70	\$26.08	\$8.52	\$6.40	\$0.00	\$41.00
7	75	\$27.95	\$8.52	\$6.40	\$0.00	\$42.87
8	80	\$29.81	\$8.52	\$6.40	\$0.00	\$44.73
9	85	\$31.67	\$8.52	\$6.40	\$0.00	\$46.59
10	90	\$33.53	\$8.52	\$6.40	\$0.00	\$48.45

Effective Date - 04/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$17.10	\$7.45	\$0.00	\$0.00	\$24.55
2	50	\$19.01	\$7.45	\$0.00	\$0.00	\$26.46
3	55	\$20.91	\$8.52	\$6.15	\$0.00	\$35.58
4	60	\$22.81	\$8.52	\$6.15	\$0.00	\$37.48
5	65	\$24.71	\$8.52	\$6.40	\$0.00	\$39.63
6	70	\$26.61	\$8.52	\$6.40	\$0.00	\$41.53
7	75	\$28.51	\$8.52	\$6.40	\$0.00	\$43.43
8	80	\$30.41	\$8.52	\$6.40	\$0.00	\$45.33
9	85	\$32.31	\$8.52	\$6.40	\$0.00	\$47.23
10	90	\$34.21	\$8.52	\$6.40	\$0.00	\$49.13

Notes:

Apprentice to Journeyworker Ratio:1:1

TELECOMMUNICATION TECHNICIAN	12/29/2014	\$37.71	\$9.05	\$9.48	\$0.00	\$56.24
ELECTRICIANS LOCAL 7	06/28/2015	\$38.51	\$9.05	\$9.48	\$0.00	\$57.04
	01/03/2016	\$39.36	\$9.05	\$9.48	\$0.00	\$57.89
	07/03/2016	\$40.26	\$9.05	\$9.48	\$0.00	\$58.79
	01/01/2017	\$41.16	\$9.05	\$9.48	\$0.00	\$59.69

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - TELECOMMUNICATION TECHNICIAN - Local 7

Effective Date - 12/29/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$15.08	\$4.00	\$0.45	\$0.00	\$19.53
2	45	\$16.97	\$4.00	\$0.45	\$0.00	\$21.42
3	50	\$18.86	\$9.05	\$5.30	\$0.00	\$33.21
4	55	\$20.74	\$9.05	\$5.30	\$0.00	\$35.09
5	65	\$24.51	\$9.05	\$6.30	\$0.00	\$39.86
6	70	\$26.40	\$9.05	\$7.30	\$0.00	\$42.75

Effective Date - 06/28/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$15.40	\$4.00	\$0.46	\$0.00	\$19.86
2	45	\$17.33	\$4.00	\$0.46	\$0.00	\$21.79
3	50	\$19.26	\$9.05	\$5.31	\$0.00	\$33.62
4	55	\$21.18	\$9.05	\$5.31	\$0.00	\$35.54
5	65	\$25.03	\$9.05	\$6.31	\$0.00	\$40.39
6	70	\$26.96	\$9.05	\$7.31	\$0.00	\$43.32

Notes:

Steps are 800 hours

Apprentice to Journeyworker Ratio:1:1

TERRAZZO FINISHERS	09/01/2014	\$30.85	\$10.18	\$16.07	\$0.00	\$57.10
BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE	03/02/2015	\$31.41	\$10.18	\$16.07	\$0.00	\$57.66
	08/31/2015	\$32.32	\$10.18	\$16.13	\$0.00	\$58.63
	02/29/2016	\$32.89	\$10.18	\$16.13	\$0.00	\$59.20
	09/05/2016	\$33.80	\$10.18	\$16.20	\$0.00	\$60.18
	02/27/2017	\$34.37	\$10.18	\$16.20	\$0.00	\$60.75

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 09/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.43	\$10.18	\$16.07	\$0.00	\$41.68
2	60	\$18.51	\$10.18	\$16.07	\$0.00	\$44.76
3	70	\$21.60	\$10.18	\$16.07	\$0.00	\$47.85
4	80	\$24.68	\$10.18	\$16.07	\$0.00	\$50.93
5	90	\$27.77	\$10.18	\$16.07	\$0.00	\$54.02

Effective Date - 03/02/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.71	\$10.18	\$16.07	\$0.00	\$41.96
2	60	\$18.85	\$10.18	\$16.07	\$0.00	\$45.10
3	70	\$21.99	\$10.18	\$16.07	\$0.00	\$48.24
4	80	\$25.13	\$10.18	\$16.07	\$0.00	\$51.38
5	90	\$28.27	\$10.18	\$16.07	\$0.00	\$54.52

Notes:

Apprentice to Journeyworker Ratio:1:5

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2014	\$35.95	\$7.30	\$13.15	\$0.00	\$56.40
	06/01/2015	\$36.70	\$7.30	\$13.15	\$0.00	\$57.15
	12/01/2015	\$37.45	\$7.30	\$13.15	\$0.00	\$57.90
	06/01/2016	\$38.20	\$7.30	\$13.15	\$0.00	\$58.65
	12/01/2016	\$39.20	\$7.30	\$13.15	\$0.00	\$59.65

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2014	\$34.67	\$7.30	\$13.15	\$0.00	\$55.12
	06/01/2015	\$35.42	\$7.30	\$13.15	\$0.00	\$55.87
	12/01/2015	\$36.17	\$7.30	\$13.15	\$0.00	\$56.62
	06/01/2016	\$36.92	\$7.30	\$13.15	\$0.00	\$57.37
	12/01/2016	\$37.92	\$7.30	\$13.15	\$0.00	\$58.37

For apprentice rates see "Apprentice- LABORER"

TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2014	\$34.55	\$7.30	\$13.15	\$0.00	\$55.00
	06/01/2015	\$35.30	\$7.30	\$13.15	\$0.00	\$55.75
	12/01/2015	\$36.05	\$7.30	\$13.15	\$0.00	\$56.50
	06/01/2016	\$36.80	\$7.30	\$13.15	\$0.00	\$57.25
	12/01/2016	\$37.80	\$7.30	\$13.15	\$0.00	\$58.25

For apprentice rates see "Apprentice- LABORER"

TRACTORS <i>OPERATING ENGINEERS LOCAL 98</i>	12/01/2014	\$31.55	\$9.70	\$11.00	\$0.00	\$52.25
	06/01/2015	\$32.30	\$9.70	\$11.00	\$0.00	\$53.00
	12/01/2015	\$33.05	\$9.70	\$11.00	\$0.00	\$53.75

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>	12/01/2014	\$32.17	\$9.91	\$9.33	\$0.00	\$51.41
	06/01/2015	\$32.52	\$9.91	\$9.33	\$0.00	\$51.76
	08/01/2015	\$32.52	\$10.41	\$9.33	\$0.00	\$52.26
	12/01/2015	\$32.52	\$10.41	\$10.08	\$0.00	\$53.01
	06/01/2016	\$33.02	\$10.41	\$10.08	\$0.00	\$53.51
	08/01/2016	\$33.02	\$10.91	\$10.08	\$0.00	\$54.01
	12/01/2016	\$33.02	\$10.91	\$10.89	\$0.00	\$54.82
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2014	\$46.83	\$7.30	\$13.55	\$0.00	\$67.68
	06/01/2015	\$47.58	\$7.30	\$13.55	\$0.00	\$68.43
	12/01/2015	\$48.33	\$7.30	\$13.55	\$0.00	\$69.18
	06/01/2016	\$49.08	\$7.30	\$13.55	\$0.00	\$69.93
	12/01/2016	\$50.08	\$7.30	\$13.55	\$0.00	\$70.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2014	\$48.83	\$7.30	\$13.55	\$0.00	\$69.68
	06/01/2015	\$49.58	\$7.30	\$13.55	\$0.00	\$70.43
	12/01/2015	\$50.33	\$7.30	\$13.55	\$0.00	\$71.18
	06/01/2016	\$51.08	\$7.30	\$13.55	\$0.00	\$71.93
	12/01/2016	\$52.08	\$7.30	\$13.55	\$0.00	\$72.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2014	\$38.90	\$7.30	\$13.55	\$0.00	\$59.75
	06/01/2015	\$39.65	\$7.30	\$13.55	\$0.00	\$60.50
	12/01/2015	\$40.40	\$7.30	\$13.55	\$0.00	\$61.25
	06/01/2016	\$41.15	\$7.30	\$13.55	\$0.00	\$62.00
	12/01/2016	\$42.15	\$7.30	\$13.55	\$0.00	\$63.00
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2014	\$40.90	\$7.30	\$13.55	\$0.00	\$61.75
	06/01/2015	\$41.65	\$7.30	\$13.55	\$0.00	\$62.50
	12/01/2015	\$42.40	\$7.30	\$13.55	\$0.00	\$63.25
	06/01/2016	\$43.15	\$7.30	\$13.55	\$0.00	\$64.00
	12/01/2016	\$44.15	\$7.30	\$13.55	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2014	\$31.59	\$9.91	\$9.33	\$0.00	\$50.83
	06/01/2015	\$31.94	\$9.91	\$9.33	\$0.00	\$51.18
	08/01/2015	\$31.94	\$10.41	\$9.33	\$0.00	\$51.68
	12/01/2015	\$31.94	\$10.41	\$10.08	\$0.00	\$52.43
	06/01/2016	\$32.44	\$10.41	\$10.08	\$0.00	\$52.93
	08/01/2016	\$32.44	\$10.91	\$10.08	\$0.00	\$53.43
	12/01/2016	\$32.44	\$10.91	\$10.89	\$0.00	\$54.24
WAGON DRILL OPERATOR <i>LABORERS - ZONE 3 (BUILDING & SITE)</i>	12/01/2014	\$28.74	\$7.30	\$11.15	\$0.00	\$47.19
	06/01/2015	\$29.43	\$7.30	\$11.15	\$0.00	\$47.88
	12/07/2015	\$30.11	\$7.30	\$11.15	\$0.00	\$48.56
	06/06/2016	\$30.80	\$7.30	\$11.15	\$0.00	\$49.25
	12/05/2016	\$31.48	\$7.30	\$11.15	\$0.00	\$49.93
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WAGON DRILL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 3 (HEAVY & HIGHWAY)</i>	12/01/2014	\$28.24	\$7.30	\$10.18	\$0.00	\$45.72
	06/01/2015	\$28.74	\$7.30	\$10.18	\$0.00	\$46.22
	12/01/2015	\$29.24	\$7.30	\$10.18	\$0.00	\$46.72
	06/01/2016	\$29.74	\$7.30	\$10.18	\$0.00	\$47.22
	12/01/2016	\$30.49	\$7.30	\$10.18	\$0.00	\$47.97
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
WATER METER INSTALLER <i>PLUMBERS & PIPEFITTERS LOCAL 104</i>	09/17/2014	\$36.81	\$8.30	\$14.25	\$0.00	\$59.36
	03/17/2015	\$37.56	\$8.30	\$14.25	\$0.00	\$60.11
	06/17/2015	\$38.31	\$8.30	\$14.25	\$0.00	\$60.86
	03/17/2016	\$39.31	\$8.30	\$14.25	\$0.00	\$61.86
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
Outside Electrical - West						
EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	08/31/2014	\$40.66	\$8.20	\$9.22	\$0.00	\$58.08
	08/30/2015	\$42.16	\$8.20	\$9.26	\$0.00	\$59.62
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	08/31/2014	\$27.37	\$8.20	\$8.82	\$0.00	\$44.39
	08/30/2015	\$28.87	\$8.20	\$8.87	\$0.00	\$45.94
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN / TRUCK DRIVER <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	08/31/2014	\$36.23	\$8.20	\$9.09	\$0.00	\$53.52
	08/30/2015	\$37.73	\$8.20	\$9.13	\$0.00	\$55.06
For apprentice rates see "Apprentice- LINEMAN"						
HEAVY EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	08/31/2014	\$42.87	\$8.20	\$9.29	\$0.00	\$60.36
	08/30/2015	\$44.37	\$8.20	\$9.33	\$0.00	\$61.90
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	08/31/2014	\$47.30	\$8.20	\$9.42	\$0.00	\$64.92
	08/30/2015	\$48.80	\$8.20	\$9.46	\$0.00	\$66.46

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - LINEMAN (Outside Electrical) - West Local 42

Effective Date - 08/31/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$28.38	\$8.20	\$0.85	\$0.00	\$37.43
2	65	\$30.75	\$8.20	\$0.92	\$0.00	\$39.87
3	70	\$33.11	\$8.20	\$8.99	\$0.00	\$50.30
4	75	\$35.48	\$8.20	\$9.06	\$0.00	\$52.74
5	80	\$37.84	\$8.20	\$9.14	\$0.00	\$55.18
6	85	\$40.21	\$8.20	\$9.21	\$0.00	\$57.62
7	90	\$42.57	\$8.20	\$9.28	\$0.00	\$60.05

Effective Date - 08/30/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$29.28	\$8.20	\$0.88	\$0.00	\$38.36
2	65	\$31.72	\$8.20	\$0.95	\$0.00	\$40.87
3	70	\$34.16	\$8.20	\$9.02	\$0.00	\$51.38
4	75	\$36.60	\$8.20	\$9.10	\$0.00	\$53.90
5	80	\$39.04	\$8.20	\$9.17	\$0.00	\$56.41
6	85	\$41.48	\$8.20	\$9.24	\$0.00	\$58.92
7	90	\$43.92	\$8.20	\$9.32	\$0.00	\$61.44

Notes:

Apprentice to Journeyworker Ratio:1:2

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	07/16/2012	\$26.33	\$4.18	\$2.79	\$0.00	\$33.30
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	07/16/2012	\$24.78	\$4.18	\$2.74	\$0.00	\$31.70
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	07/16/2012	\$24.78	\$4.18	\$2.74	\$0.00	\$31.70
TRACTOR-TRAILER DRIVER <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	08/31/2014	\$40.66	\$8.20	\$9.22	\$0.00	\$58.08
TREE TRIMMER <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	08/30/2015	\$42.16	\$8.20	\$9.26	\$0.00	\$59.62
TREE TRIMMER <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	01/29/2012	\$17.18	\$3.37	\$0.00	\$0.00	\$20.55
TREE TRIMMER GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42</i>	01/29/2012	\$15.15	\$3.37	\$0.00	\$0.00	\$18.52

This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is not on the ground. This classification does not apply to wholesale tree removal.

This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is on the ground. This classification does not apply to wholesale tree removal.

Additional Apprentices Information:

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

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

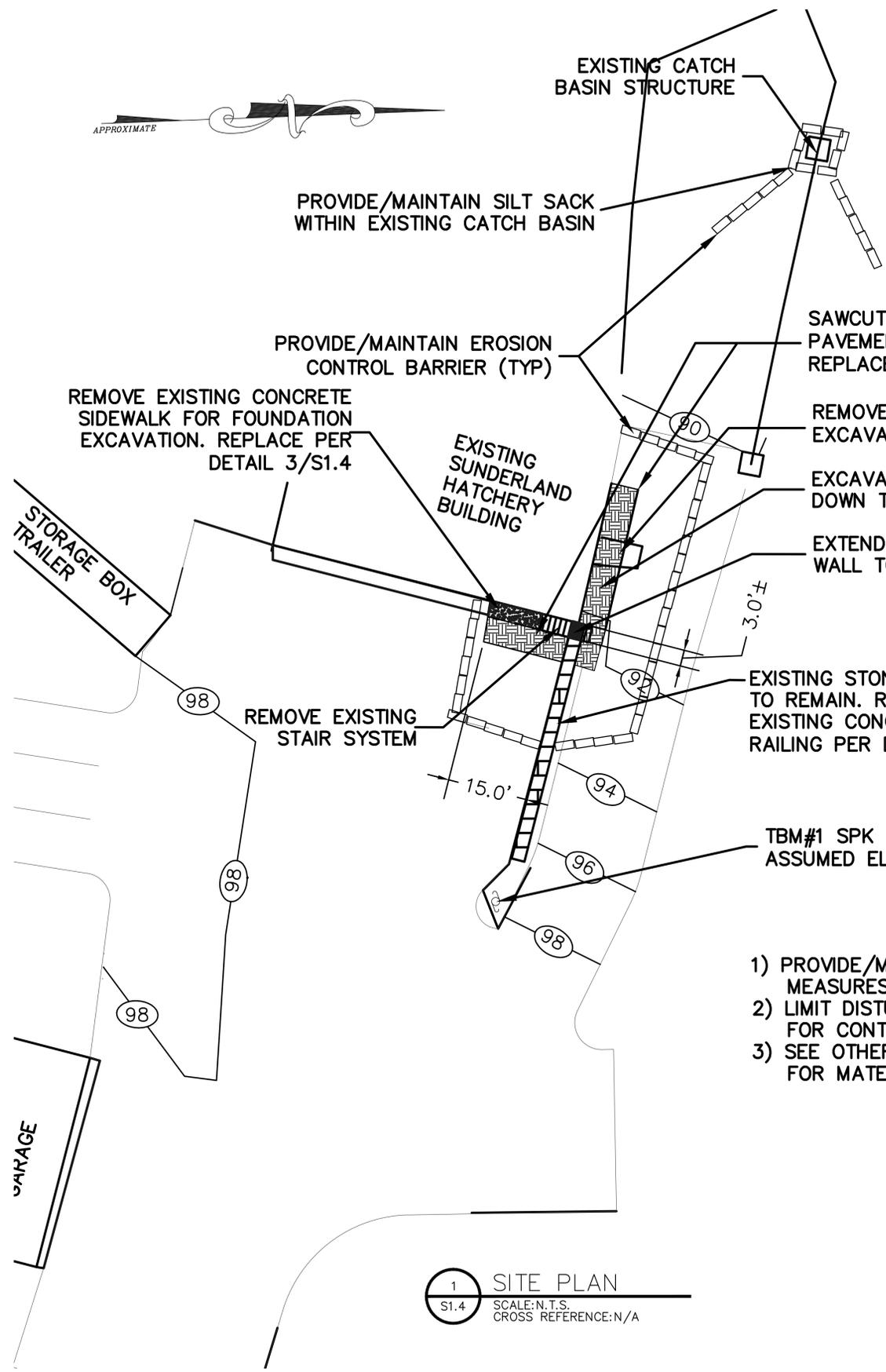
All steps are six months (1000 hours.)

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

** Multiple ratios are listed in the comment field.

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

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



EXISTING CATCH BASIN STRUCTURE

PROVIDE/MAINTAIN SILT SACK WITHIN EXISTING CATCH BASIN

PROVIDE/MAINTAIN EROSION CONTROL BARRIER (TYP)

REMOVE EXISTING CONCRETE SIDEWALK FOR FOUNDATION EXCAVATION. REPLACE PER DETAIL 3/S1.4

EXISTING SUNDERLAND HATCHERY BUILDING

SAWCUT/REMOVE EXISTING ASPHALT PAVEMENT FOR FOUNDATION EXCAVATION. REPLACE PER DETAIL 4/S1.4

REMOVE EXISTING CONCRETE PAD FOR FOUNDATION EXCAVATION. REPLACE PER DETAIL 3/S1.4

EXCAVATE EXISTING FOUNDATION SYSTEM DOWN TO THE TOP OF EXISTING FOOTING

EXTENDED EXISTING DRY LAID STONE RETAINING WALL TO NEW BUILDING FOUNDATION FACE

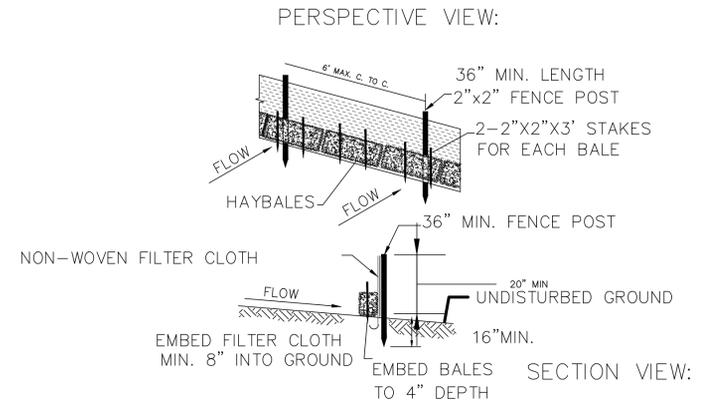
REMOVE EXISTING STAIR SYSTEM

EXISTING STONE RETAINING WALL TO REMAIN. REPLACE EXISTING CONCRETE CAP AND RAILING PER DETAIL 4/S1.4

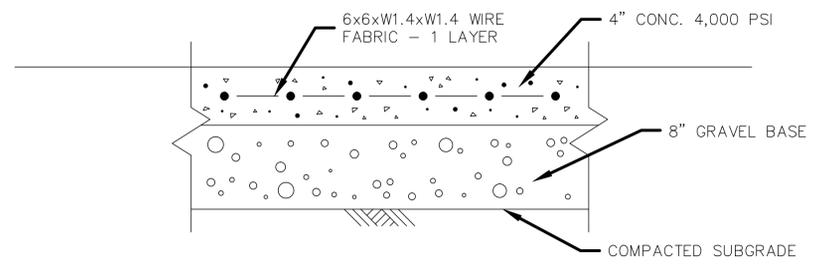
TBM#1 SPK IN U.P.#39/73/2 ASSUMED ELEV.=100.00

- 1) PROVIDE/MAINTAIN SEDIMENTATION CONTROL MEASURES THROUGHOUT PROJECT UNTIL COMPLETION.
- 2) LIMIT DISTURBANCE INTO PAVEMENT LANE TO ALLOW FOR CONTINUED TRAFFIC FLOW AROUND WORK.
- 3) SEE OTHER DRAWING DETAILS AND SPECIFICATIONS FOR MATERIAL AND PLACEMENT SPECIFICATIONS.

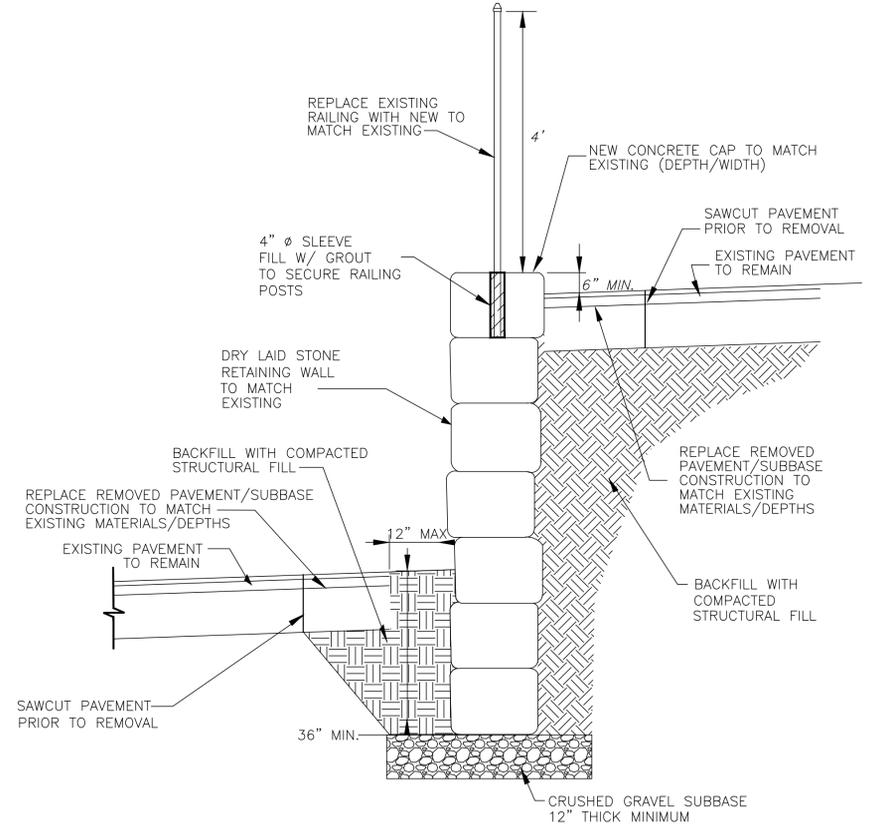
1 SITE PLAN
SCALE: N.T.S.
CROSS REFERENCE: N/A



2 SEDIMENTATION/EROSION CONTROL BARRIER
SCALE: N.T.S.
CROSS REFERENCE: 1/S1.4



2 CEMENT CONC. SIDEWALK/PAD SECTION
SCALE: N.T.S.
CROSS REFERENCE: 1/S1.4



4 FIELD DRY LAID STONE RETAINING WALL DETAIL
SCALE: N.T.S.
CROSS REFERENCE: 1/S1.4

SURVEYOR:	
FIELD WORK:	MH
ENGINEER:	MH
DESIGN:	MWS
COMPS:	MH
DRAFTING:	MH
CHECKED:	MWS
HORIZ SCALE:	N.T.S.
VERT SCALE:	N.T.S.

PROJECT NO:	S12-001
DRAWING NO:	1
DATE:	7/31/12
SHEET NO:	

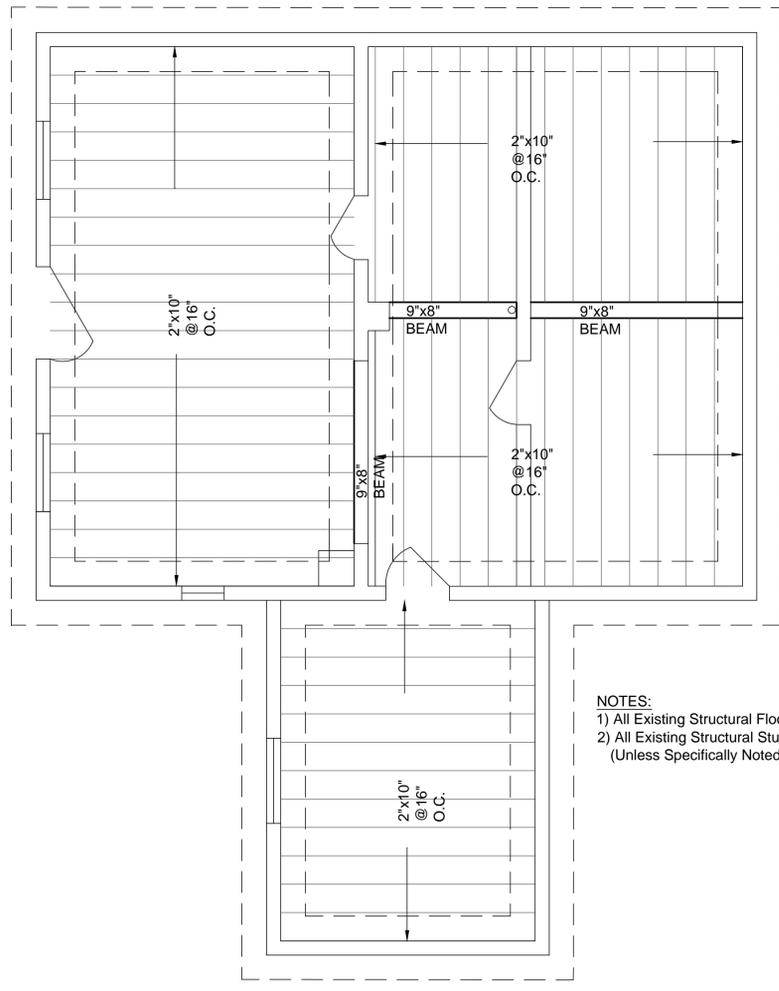
BASEMENT DEMOLITION PLAN
 AND EXISTING
 FIRST FLOOR FRAMING PLAN

ADDENDUM 1: 01-07-15

FIELD WORK:	MH
ENGINEER:	MH
DESIGN:	MWS
COMPS:	MH
DRAFTING:	MH
CHECKED:	MWS
HORIZ SCALE:	1/4"=1'-0"
VERT SCALE:	1/4"=1'-0"

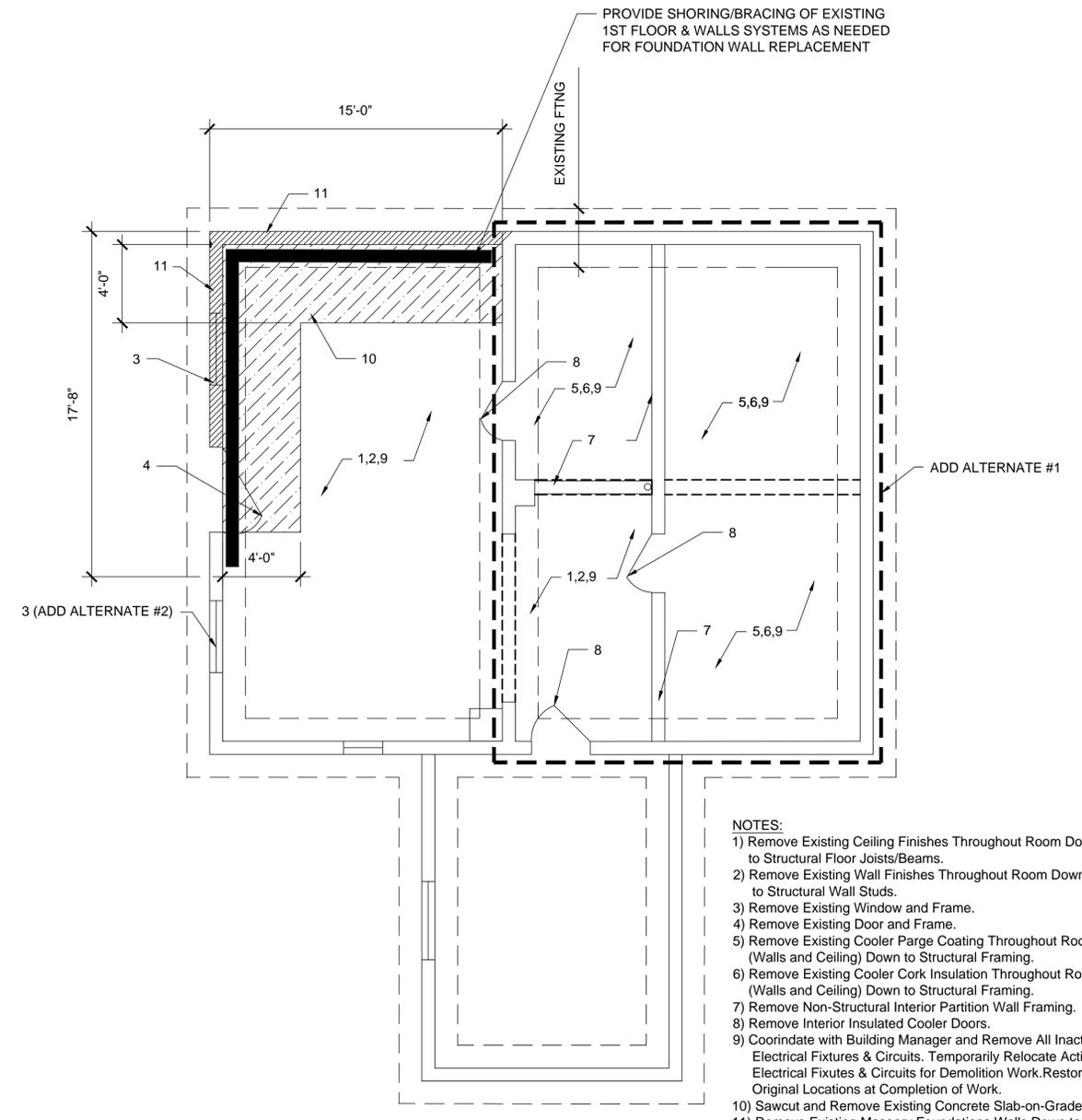
PROJECT NO:	S12-001
DRAWING NO:	2
DATE:	7/31/12
SHEET NO.	

2 OF 4



NOTES:
 1) All Existing Structural Floor Framing and Beams to Remain.
 2) All Existing Structural Stud Wall Framing to Remain
 (Unless Specifically Noted Otherwise).

1 EXISTING FIRST FLOOR
 FRAMING PLAN
 SCALE: NTS
 CROSS REFERENCE: N/A



NOTES:
 1) Remove Existing Ceiling Finishes Throughout Room Down to Structural Floor Joists/Beams.
 2) Remove Existing Wall Finishes Throughout Room Down to Structural Wall Studs.
 3) Remove Existing Window and Frame.
 4) Remove Existing Door and Frame.
 5) Remove Existing Cooler Parge Coating Throughout Room (Walls and Ceiling) Down to Structural Framing.
 6) Remove Existing Cooler Cork Insulation Throughout Room (Walls and Ceiling) Down to Structural Framing.
 7) Remove Non-Structural Interior Partition Wall Framing.
 8) Remove Interior Insulated Cooler Doors.
 9) Coordinate with Building Manager and Remove All Inactive Electrical Fixtures & Circuits. Temporarily Relocate Active Electrical Fixtures & Circuits for Demolition Work. Restore at Original Locations at Completion of Work.
 10) Sawcut and Remove Existing Concrete Slab-on-Grade.
 11) Remove Existing Masonry Foundations Walls Down to Existing Footing Elevation.

2 BASEMENT DEMOLITION
 REMOVAL PLAN
 SCALE: NTS
 CROSS REFERENCE: N/A

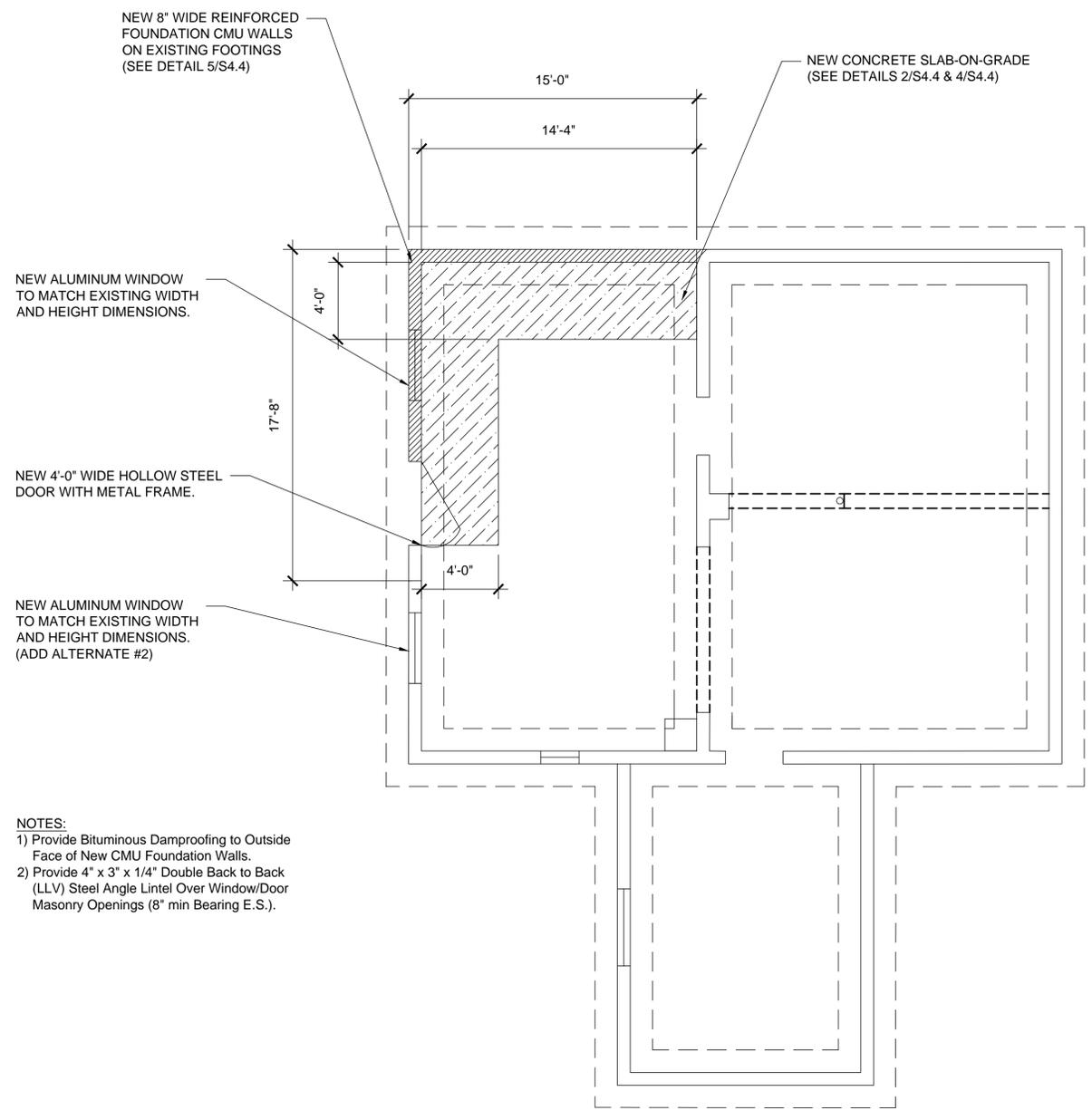
NEW CMU FOUNDATION
 WALL LAYOUT PLAN

ADDENDUM 1: 01-07-15

SURVEYOR:	
FIELD WORK:	MH
ENGINEER:	MH
DESIGN:	MWS
COMPS:	MH
DRAFTING:	MH
CHECKED:	MWS
HORIZ SCALE:	1/4"
VERT SCALE:	1/4"

PROJECT NO:	S12-001
DRAWING NO:	3
DATE:	07/31/12
SHEET NO.	

3 OF 4



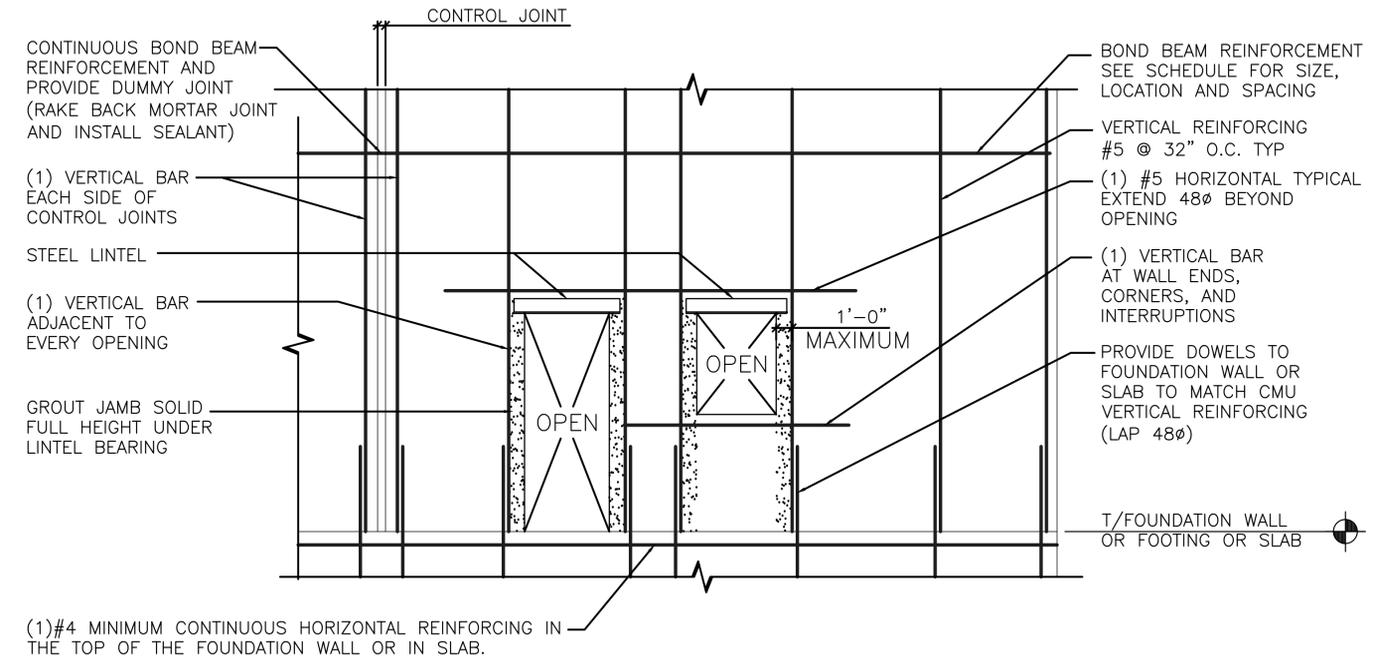
- NOTES:
 1) Provide Bituminous Damproofing to Outside Face of New CMU Foundation Walls.
 2) Provide 4" x 3" x 1/4" Double Back to Back (LLV) Steel Angle Lintel Over Window/Door Masonry Openings (8" min Bearing E.S.).

1
 S3.4
 NEW CMU FOUNDATION
 WALL LAYOUT PLAN
 SCALE: 1/4" = 1'-0"
 CROSS REFERENCE: N/A

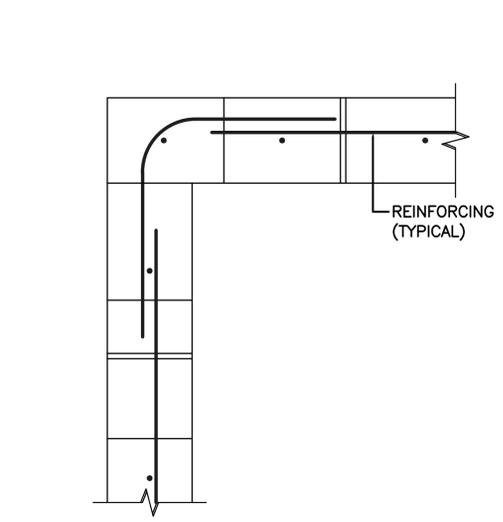
ADDENDUM 1: 01-07-15

SURVEYOR:	
FIELD WORK:	MH
ENGINEER:	MH
DESIGN:	MWS
COMPS:	MH
DRAFTING:	MH
CHECKED:	MWS
HORIZ SCALE:	N.T.S.
VERT SCALE:	N.T.S.

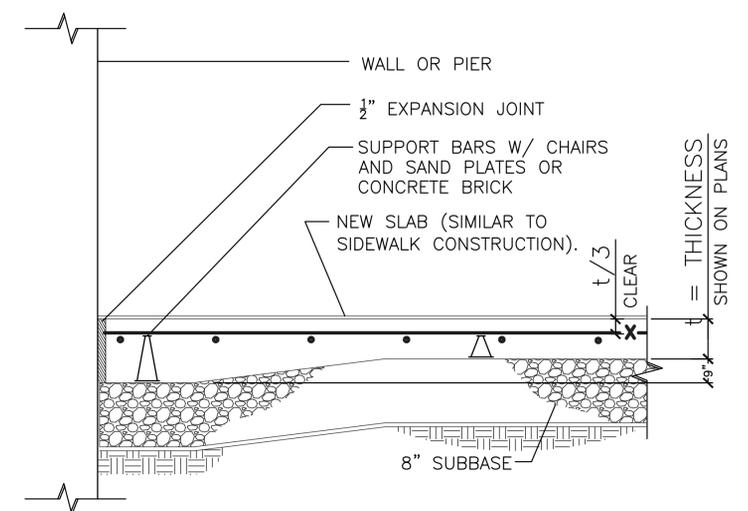
PROJECT NO:	S12-001
DRAWING NO:	4
DATE:	7/31/12
SHEET NO.	



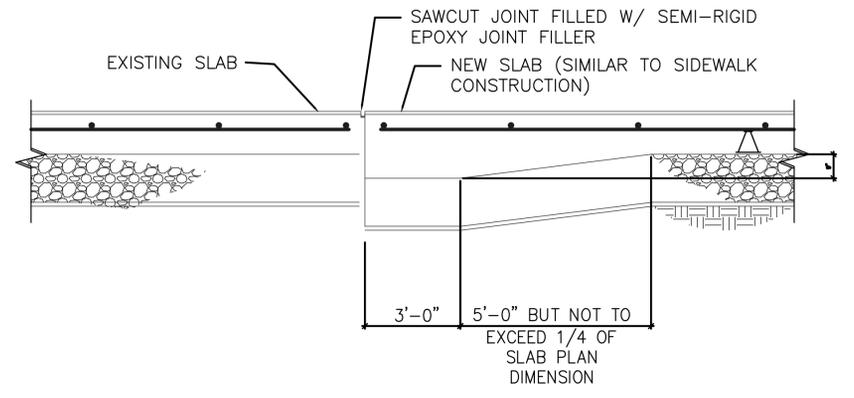
1 TYPICAL MASONRY WALL REINFORCING DETAIL
 SCALE: N.T.S.
 CROSS REFERENCE: 5/S4.4



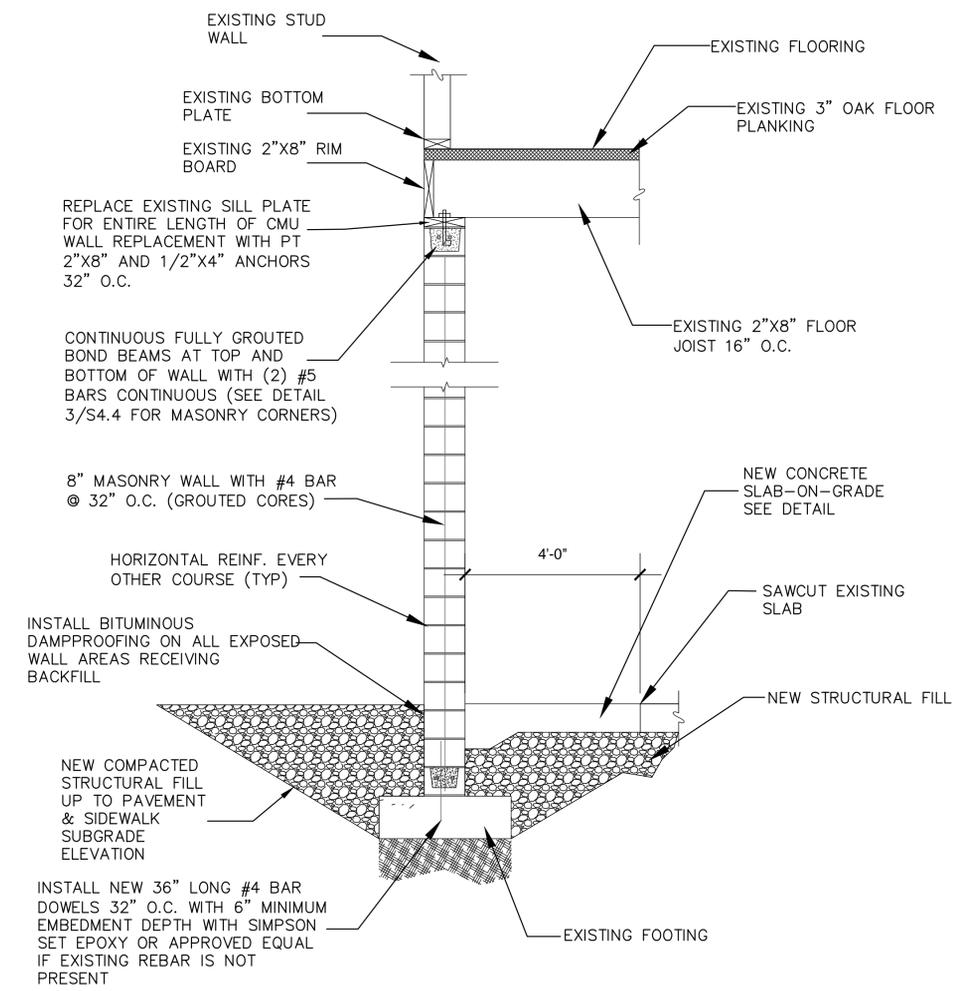
3 TYPICAL BOND BEAM CORNER DETAIL
 SCALE: N.T.S.
 CROSS REFERENCE: 5/S4.4



4 SLAB ON GRADE TYPICAL EDGE SECTION
 SCALE: N.T.S.
 CROSS REFERENCE: 1/S3.4



2 SLAB ON GRADE TYPICAL CONSTRUCTION JOINT
 SCALE: N.T.S.
 CROSS REFERENCE: 1/S3.4



5 TYPICAL CMU WALL SECTION
 SCALE: N/A
 CROSS REFERENCE: 1/S3.4

**PROJECT MANUAL
FOR
FOUNDATION WALL REPAIRS
AT THE
SUNDERLAND STATE FISH HATCHERY**



Prepared for:

MASSACHUSETTS DEPARTMENT OF FISH & GAME
SUNDERLAND STATE FISH HATCHERY
AMHERST ROAD, ROUTE 116
SUNDERLAND, MA 01375

Prepared by:

HUNTLEY ASSOCIATES PC
30 INDUSTRIAL DRIVE EAST
NORTHAMPTON, MASSACHUSETTS 01060
Project #S12-001

**PROJECT MANUAL
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Section 02540 Surface and Groundwater Control	2
Section 02600 Pavements & Walks	7
Section 02890 Clean-Up	2
Section 03320 Concrete Slab-on-Grade	5
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PART 1 - GENERAL

1.01 INTENT

- a. Contractor shall furnish all labor, materials, equipment and appurtenances necessary for the complete and functional removal/construction of (but not limited to) reinforced CMU foundation walls, pressure treated wooden sills, windows/doors, interior slabs-on-grade, exterior asphalt pavements and concrete sidewalks/pads, excavation/backfill/compaction, concrete stairs, stone retaining wall, temporary/permanent electrical removals/re-installations, traffic maintenance, sedimentation controls, clean-up, other ceiling/wall finish removals, selective wall demolition, etc. in accordance with these Specifications, applicable Drawings and terms/conditions of the Contract.

1.02 SCOPE OF WORK

- a. Furnish all labor, materials, equipment and services necessary for and reasonably incidental to the complete installation of all work specified herein and/or indicated on the Drawings, including, but not limited to, the following:
 1. General Conditions, insurance, bonding, maintenance of facilities, coordination, submittals, testing, as-built drawings, meetings, mobilization/demobilization, etc.
 2. Selective demolition, removal from site and legal disposal of existing slabs-on-grade, concrete pads/stairs, asphalt pavements, masonry foundation walls, window/doors, ceiling and wall finishes, wall studs, subbase/subsurface soils, inactive electrical fixtures/circuits, etc. designated for removal or as otherwise made obsolete by new construction. The Owner does not wish to retain any salvaged materials.
 3. All existing electrical systems and other equipment which is to remain in operation and which interfere with new construction shall be relocated and reconnected as required. All other existing systems and equipment to remain or can be affected by new construction shall be fully protected from dust and damage.
 4. Temporary Shoring and Bracing.
 5. Installation of new CMU foundation walls and sill plate on top of existing footings.
 6. Extension of existing dry laid stone retaining wall to new building foundation face.
 7. Backfill, compaction and installation of soil materials behind new foundation/retaining walls, as well as, below all pavements/sidewalks/pads/slabs as required.
 8. Installation of reinforced concrete slabs-on-grade within previously removed areas.
 9. Installation of asphalt pavement within previously removed areas and restriping of parking space lines as required.
 10. Close out procedures.
- b. Scheduling of all work shall be coordinated with the Sunderland Fish Hatchery officials. The building will remain in use during the entire construction process.

1.03 CODES, ORDINANCES AND INSPECTIONS

- a. All materials and the installation thereof shall conform to the requirements of the Massachusetts Building Code, Electrical Code, Fuel Gas and Plumbing Code and local laws, rules, regulations, and codes pertaining thereto. Where provisions of the Contract Documents conflict with any codes, rules or regulations, the latter shall govern. Where the Contract requirements are in excess of applicable codes, rules or regulations, the Contract provisions shall govern, unless the Owner's Representative rules otherwise.

1.04 INSTALLATION REQUIREMENTS

- a. The Contractor shall employ only competent and experienced workmen at a regular schedule in harmony with the other tradesmen on the job. He shall also exercise care and supervision of his employees in regard to proper and expeditious layout of his work.
- b. The Contractor shall have a Foreman or Superintendent assigned to the Project who shall be

authorized to make decisions and receive instructions exactly as if the Contractor himself were present. The Foreman or Superintendent shall not be removed or replaced without the express approval of the Owner's Representative after construction work begins.

- c. The Contractor shall be held responsible for any injuries or damage done to the building premises or adjoining properties or to other Contractors' work resulting from the execution of his part of the work in any manner whatsoever; and in case of dispute arising as to the extent or share of responsibility incurred by the Contractor, it is agreed between the Owner and the Contractor that such liability and extent of damage shall be finally determined by the Owner's Representative whose decision shall be final and binding on both parties to the Contract for the work in question.
- d. The Contractor shall co-operate to the fullest extent with all other trades in order to expedite the progress of the work. He shall furnish all information pertaining to his materials as to sizes, locations, and means of support, to all other trades requiring such information.
- e. The Contractor shall lay out all his work at the site and be responsible for the accuracy thereof. Conditions at the site/building shall be the determining factor for all measurements.
- f. All work shall be laid out and installed so as to require the least amount of cutting and patching.
- g. The Contractor shall be responsible for the proper protection of his work and materials from injury or loss at the hands of others and shall make good such loss or injury at his own expense.
- h. The Contractor shall be responsible for all equipment and materials installed under this Section until the final acceptance of the project by the Owner's Representative.

1.05 QUALITY ASSURANCE

- a. Equality of materials or articles other than those named or described in this Section will be determined in accordance with the provisions of the Contract.
- b. At various stages of this project, the Owner's Representative will pursue specified testing as an assurance that the completed work fully complies with the Project Specifications. Test requirements and submittals are noted in this and other applicable specification sections. The cost for all such testing shall be borne by the Owner. The Contractor shall be responsible for coordinating with the Owner's Representative at least 48 hours prior to the need for all required testing for scheduling and then reconfirm such need and time with the Owner's Representative 24 hours prior to the desired testing time. Work shall be retested if felt unsatisfactory by the Owner's Representative. Cost of all retesting shall be borne by the Contractor.

1.06 FIELD ENGINEERING

- a. Underground Utilities: Contractor shall be responsible for verification and location of all underground utilities, facilities, and equipment prior to construction. Any damage to or disruption of services shall be the sole responsibility of the Contractor.
- b. Layout: Contractor shall be responsible for all layouts required ensuring the satisfactory completion of the contract work.

1.07 SUBMITTALS

- a. Before ordering materials shipped to the job, the Contractor shall submit to the Owner's Representative six (6) sets of catalogue cuts, manufacturers' data sheets, or Shop Drawings, giving all details, dimensions, capacities, etc. of all materials to be furnished on the project.
- b. The Contractor shall check the Shop Drawings thoroughly for compliance with the Plans and Specifications BEFORE submitting them to the Owner's Representative for review, making any and all changes, which may be required.
- c. The review of Shop Drawings by the Owner's Representative shall not relieve the Contractor from any obligation to perform the work strictly in accordance with the Contract Drawings and Specifications. The responsibility for errors in Shop Drawings shall remain with the Contractor.
- d. In the event that materials are being delivered to or installed on the job for which Shop Drawings or samples have not been approved and/or which are not in accordance with the Specifications, the Contractor will be required to remove such materials and substitute approved materials at

- his own expense and as directed by the Owner's Representative.
- e. Allow sufficient review time (one week minimum) by Owner's Representative, so that installation will not be delayed as a result of the time required to process submittals. Submittals shall be complete. Any partial or incomplete submittals will be returned to the Contractor without review. Time and material expenses incurred by the Owner's Representative to review submittals more than twice will be paid for and deducted from the Contractor's following invoice claim and paid directly to the Owner's Representative.
 - f. Contractor shall provide submittals for, but not limited to, each of the following:
 - 1. Concrete Material Certifications, Design Mixes, and Compressive Strength Break Test Results.
 - 2. Steel Reinforcement Shop Drawings and Material Certifications.
 - 3. Bituminous Asphalt Pavement Design Mixes and Compaction Test Results.
 - 4. Structural Fill, Subbase Material Certifications, Gradations and Compaction Testing Results.
 - 5. Door/Window and Associated Hardware Shop Drawings and Product Data Sheets.
 - g. Contractor shall submit pay requests to Owner's Representative for approval of payment.

1.08 PERMITS, FEES AND INSPECTIONS

- a. The Contractor shall secure all permits and pay all fees required for his work. He shall be required to secure all other permits and pay all other fees and charges incidental to the proper carrying out of the Contract. He is to assume all responsibility regarding the observance of the rules and regulations so far as they relate to his part of the work.
- b. The Contractor shall arrange and pay for all required inspections of his work by permitting agencies.

1.09 ACTIVE SERVICES

- a. Existing active services (water, gas, sewer, data, energy management, electric) when encountered shall be protected against damage. Do not prevent or disturb operation of active services, which are to remain. If active services are encountered which require relocation, make request to authorities with jurisdiction and the Owner for determination of procedures. Where existing services are to be abandoned, they shall be terminated in conformance with requirements of the utility or municipality having jurisdiction and with applicable code requirements.

1.10 CONTRACTOR USE OF SITE AND PREMISES

- a. Limit use of site and premises to allow:
 - 1. Owner occupancy.
- b. Construction Operations: Shall be coordinated with the Owner to allow continued occupation and operations of the building.

1.11 OWNER OCCUPANCY

- a. The Owner will occupy the premises (other than basement area being renovated) during entire period of construction for the conduct of normal operations. Contractor shall provide/maintain safe public access to the building during construction.
- b. Co-operate with Owner to minimize conflict and to facilitate Owner's operations.

1.12 SITE INSPECTION

- a. Contractor should inspect the site to become familiar with conditions of the site, which will affect the work. Contractor should verify points of connection with utilities, routing of piping and conduits as required for proper clearances from any existing structures or other obstacles.
- b. Extra payment will not be allowed for changes in the work required because of the successful bidder's failure to make this inspection.

1.13 PLANS AND SPECIFICATIONS

- a. The Plans and Specifications are complementary and anything called for, or reasonably implied, in the Plans and not in the Specifications, or vice versa, shall be considered as called for or reasonably implied in both.
- b. The Contractor shall assume all responsibility in scaling measurements from the Drawings.

1.14 PRODUCT HANDLING

- a. The Contractor shall provide for the delivery of all his materials and equipment to the building site when required, so as to carry on his work efficiently and to avoid delaying his work and that of other trades.

1.15 ENVIRONMENTAL CONDITIONS

- a. The Contractor shall provide all necessary tools, machinery, scaffolding, and transportation for completion of this Contract.
- b. All broken or waste material, rags, packing, etc., resulting from this work shall be removed by the Contractor.
- c. Provide/maintain sedimentation control measures around the project area and provide/maintain silt sacks within nearby catch basin structures.

1.16 GUARANTEE

- a. The Contractor shall guarantee the satisfactory operation of his work in all parts for a period of one (1) year after date of substantial completion, and shall agree to promptly repair or replace any items of his work, which are found to be defective during this period.
- b. The Contractor shall pay for repair of damage to the buildings or grounds caused by defects in his work and for repair to other materials or equipment caused by replacement or repairs to the entire satisfaction of the Owner's Representative and Owner.
- c. Any part of the work installed under this Contract requiring excessive maintenance shall be considered as being defective.

1.17 RECORD DRAWINGS

- a. Provide one (1) set of red line re-producible of the Drawings with all changes recorded thereon.

END OF SECTION 01000

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- a. Work Included: Provide labor, materials, and equipment necessary to complete the work of this Section, including, but not limited to, the following:
 - 1. The demolition, removal, hauling, and legal disposal of site/building components, equipment, finishes, etc., as indicated on the drawings or as otherwise required to produce the results shown thereon.
 - 2. All temporary structural stabilization and support required to preserve structural integrity of existing construction which could be affected by demolition and other work operations.

1.02 QUALITY ASSURANCE

- a. Requirements of Regulatory Agencies:
 - 1. All work shall conform to the Drawings and Specifications and shall comply with applicable codes and regulations.
 - 2. The Contractor shall comply with all rules, regulations, laws, and ordinances of the Town of Sunderland, the State of Massachusetts, and all other authorities (including DCAM) having jurisdiction. All labor, materials, equipment, and services necessary to make the work comply with such requirements shall be provided without additional cost to the Owner.
 - 3. The Contractor shall procure and pay for all permits and licenses required for the complete work specified herein and shown on the Drawings.

1.03 PROJECT CONDITIONS

- a. The Contractor shall assume all risks regarding damage or loss, whether by reason of fire, theft, accident or other casualty or happening to specified site features and building from and after Contract signing, and no such damage or loss shall relieve the Contractor from his contractual obligation to complete the entire demolition work.

PART 2 - PRODUCTS Not Used

PART 3 - EXECUTION

3.01 INSPECTION

- a. The Contractor shall accept the premises as found. The Owner assumes no responsibility for the condition of the site/building on the site nor the conditions existing at the time of the signing of the Contract.

3.02 PREPARATION

- a. Maintaining Traffic
 - 1. Do not close or obstruct access to available parking and around the backside of the buildings or other roads on the property.
 - 2. Provide traffic maintenance and excavation protection measures as required.

3.03 PROTECTION

- a. Execute all demolition work in a manner as required to protect adjacent areas against damage, which might occur from falling debris or other cause; do not interfere with access to the building. Maintain free and safe passage to, from, and within the building at all times.
- b. Repair damage done to building property or the property of any other person or persons on or off premises by reason of required work.
- c. Provide all temporary measures not otherwise specifically called for under other Sections of the Specifications required to protect, preserve, stabilize, and support existing construction, the

structural integrity of which could be affected by work under this Section.

3.04 PERFORMANCE

- a. Demolition for Alterations and New Construction
 - 1. The Contractor shall demolish and remove existing work wherever necessary for alterations and for installation of new work, as well as where indicated on the Drawings.
 - 2. During demolition operations, the Contractor shall provide temporary safety and dust barricades, drop cloths, and enclosures to prevent dust, dirt, and debris from contaminating adjacent areas. All debris shall be promptly placed in containers and removed from the site.
- b. Removal of Rubbish
 - 1. Work under this Section shall include all labor, materials, and services necessary for, and reasonably incidental to, the removal and legal off-site disposal of construction debris from the property. All chutes, tracks, ramps, slides, lifts, pulley systems, loading devices, and so forth, as necessary for the demolition and removal of all rubbish and materials, shall be included in the Scope of Work of this Section.
 - 2. All construction and other debris clean and otherwise, resulting from the demolition shall be removed from the site and disposed of.
 - 3. Remove and dispose of, as it accumulates, all construction related debris, except as otherwise specified, resulting from the demolition operations. Do not store or permit debris to accumulate on site. If the Contractor fails to remove the debris promptly, the Owner reserves the right to cause same to be removed at the Contractor's expense.

3.05 CLEANING

- a. Upon completion of the work, remove all tools, materials, plants, apparatus, temporary toilets, rubbish, and debris of every sort.
- b. Leave premises clean, neat, orderly, and ready to accept the work of other trades.

END OF SECTION 02050

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- a. This section pertains to an area bounded by the perimeter exterior walls of the building and includes the required backfill against the outside of the building's foundations and site retaining walls.
- b. This work includes the following:
 - 1. Preparing subbase for support of building's interior slabs-on-grade and exterior pavements.
 - 2. Excavating and backfilling for building structure, including on outside face of building, and site retaining walls.
 - 3. Exterior Pavements, Slabs, Walkways, Pads, Etc.: Excavating, backfilling, subgrade/subbase requirements/preparation, final grading, etc. for exterior pavements, slabs, walkways, pads, etc. are specified under other Division 2 sections.

1.03 QUALITY ASSURANCE

- a. Comply with Massachusetts State Department of Transportation (MA HIGHWAY) "Materials Specifications."
- b. Routine testing of existing soils and compacted material for compliance with these Specifications.
 - 1. Compacted material not meeting density requirements shall be removed and/or recompacted and retested.

1.04 TESTING AND INSPECTIONS

- a. The following tests and inspections shall be performed and verifications including the following:
 - 1. Perform field density tests for fill/backfill material pertaining to building work.
 - a. For each lift of compacted material for fill or backfill, perform one field density test for every 2,000 sq. ft. of building area but not less than four tests.
 - b. Inspect and perform compaction testing for each subgrade and fill layer before further backfill or construction work is performed. Approval shall be based on satisfactory achievement of compaction criteria.
 - 2. Coordinate with the Engineer to perform the following:
 - a. Review and approve materials proposed by Contractor for use as compacted fill based on test data and information submitted by Testing Agency.
 - b. Review and approve filling and compaction procedures.
 - c. Review and approve preparation of slab-on-grade subgrade and subbase.
- b. Testing Agency shall submit copies of reports to Engineer and Contractor on same day that tests are made. Include date of testing, weather conditions, building location and test location referenced to column lines, elevation, and readings of all density tests.

1.05 MATERIAL EVALUATION / QUALITY CONTROL

- a. Contractor shall coordinate with Owner-assigned Testing Agency, Engineer to perform the following tests:
 - 1. Test materials proposed for use by Contractor to verify specified requirements.
 - 2. Determine optimum moisture at which maximum density can be obtained in accordance with ASTM D 1557, Modified Proctor.
 - 3. Perform particle size analysis in accordance with ASTM D 422.
- b. The testing of materials and the required tests/inspections shall in no way relieve the Contractor of the obligation/responsibility to furnish materials and perform construction in accordance with the Contract Documents or from implementing an effective Quality Control program.

1.06 RESPONSIBILITIES OF CONTRACTOR

- a. Advise Engineer and Testing Agency sufficiently in advance of operation to allow assignment of personnel. Coordinate daily testing and inspection requirements (48 hours min. advance notice) with Testing Agency and Engineer.

1.07 SUBMITTALS

- a. Submit gradations for proposed fill/backfill materials at least 15 days before start of use.
- b. Submit product data, specifications, and installation instructions for proprietary materials.
- c. Submit material certifications for products specified to conform with Massachusetts State Department of Transportation (MassDOT) references and ASTM references.

1.08 PRODUCT HANDLING

- a. Store materials so as to preserve their quality and fitness for the work.

1.09 WORKMANSHIP

- a. Contractor shall be responsible for correction of work not conforming to specified requirements. Correct deficient work as directed by Engineer.

1.10 DEFINITIONS

- a. Excavation consists of removal of material encountered to subgrade elevations indicated and subsequent disposal of materials removed.
- b. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Engineer. Unauthorized excavation and remedial work directed by Engineer shall be at Contractor's expense.
 - 1. Under footings or foundation bases fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom without altering required top elevation. Flowable fill may be used to bring elevations to proper position when acceptable to Engineer.
 - 2. In locations other than those above, backfill and compact unauthorized excavations as specified for authorized excavations of same classification unless otherwise directed by Engineer.
- c. Additional Excavation: When excavation has reached required subgrade elevations, notify Engineer, who will make an inspection of conditions. If Engineer determines that bearing materials at required subgrade elevations are unsuitable, continue excavation until suitable bearing materials are encountered and replace excavated material as directed by Engineer.
- d. Subgrade: The undisturbed earth or the compacted soil layer immediately below granular base course, base of structure, or topsoil materials.
- e. Structure: Buildings, foundations, slabs, or other man-made stationary features occurring above or below ground surface.

1.11 PROJECT CONDITIONS

- a. Existing Utilities: Locate existing underground utilities in area of work before starting earthwork operations. Where utilities are to remain in place, provide adequate means of protection during earthwork operations.
- b. Cooperate with Owner and public and private utility companies to keep their respective services and facilities in operation. Repair damaged utilities as required by utility owner.
- c. Do not interrupt existing utilities serving facilities occupied by Owner or others during occupied hours except when permitted in writing by Engineer and then only after acceptable temporary utility services have been provided.
 - 1. Provide minimum of 48-hour notice to Engineer and receive written notice to proceed before interrupting any utility.
- d. Protection of Property: Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

PART 2 - PRODUCTS

2.01 MATERIALS

- a. General Fill Material: Soil materials free of clay, rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- b. Flowable Fill Material: Cementitious, flowable, excavatable, backfill material having a compressive strength of 50 to 100 pounds per square inch (psi) at 28 days. Provide a mix, which minimizes shrinkage.
- c. Structural Fill (CSF): Sand and gravel, which are sound, durable, and free of organic and other deleterious materials. CSF to be used for raise-in-grade, in backfilling within the building areas, below footings and floor slabs, excluding the recommended floor base course, should have a liquid limit and plastic limit not exceeding 40 and 15, respectively, and conforming to the following limits of gradation:

Percent Passing by Weight	Sieve Size
100	2"
50-85	No. 1/2"
25-75	No. 1/4"
10-50	No. 40
8-35	No. 100
4-12 (total)	No. 200

- d. Slab-on-Grade/Pavement Base Course Material: Gravel which are sound, durable, and free of organic and other deleterious materials conforming to Massachusetts Department of Transportation requirements and the Plans.
- e. Excavated Materials: All potentially re-usable materials should be segregated and reused only following approval by the Engineer.

PART 3 - EXECUTION

3.01 JOB CONDITIONS

- a. Examine substrates and conditions under which work shall be performed. Do not proceed with work until unsatisfactory conditions are corrected.
- b. Drainage shall be maintained and traffic within building area shall be restricted during construction to maintain integrity of subgrade. Failure to observe these precautions will require Contractor to remove disturbed areas and correct at his own expense.

3.02 COLD-WEATHER PROTECTION

- a. Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F.

3.03 REMOVALS

- a. Clear, grub, and strip site of vegetation, topsoil, and other organic materials.
- b. Remove brick fragments and other construction debris. Plow-strip or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.
 - 1. When existing ground surface has a density less than that specified for a particular area classification, break up ground surface, pulverize, moisture-condition to optimum moisture content, and compact to required depth and percentage of maximum density.
- c. Removal from Owner's Property: Remove waste materials, including unacceptable excavated material, trash, and debris, and legally dispose of it off Owner's property.

3.04 COMPACTION

- a. Following stripping and removal of miscellaneous fill, grade and compact exposed subgrade.
- b. Soft spots, which develop during compaction shall be undercut and replaced with compacted structural fill.
- c. Compaction shall not be performed during or immediately after periods of inclement weather.

3.05 EXCAVATION

- a. Excavation shall be considered unclassified and understood to mean any and all materials encountered during excavation.
- b. Excavations shall be laid back or sheeted and braced to prevent sloughing in of sides. Maintain sides and slopes of excavations in stable condition until completion of backfill; however, cut slopes shall be inclined no steeper than permitted by OSHA standards for excavations in the soil type(s) encountered.
- c. Foundation excavations shall be hand-trimmed to remove all loose soil or ridges of materials left by equipment.
- d. Loose material and debris shall be kept out of excavations.

3.06 DEWATERING

- a. Dewatering activities shall be implemented by the site operator as a condition of the construction permit.
- b. Perform excavation and filling in a manner and sequence that shall provide proper drainage at all times.
- c. Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding project site and surrounding area.
 - 1. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting of footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
 - 2. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collecting or runoff areas. Do not use trench excavations as temporary drainage ditches.

3.07 STORAGE OF EXCAVATED MATERIALS

- a. On-site storage of excavated materials shall be implemented by the site operator as a condition of the construction permit.
- b. Stockpile excavated materials acceptable for reuse. Place, grade, and shape stockpiles for proper drainage.
 - 1. Locate and retain soil materials away from edge of excavations. Do not store within drip line of trees indicated to remain.
 - 2. Dispose of excess excavated soil material and materials not acceptable for use as general fill.

3.08 FILLING, BACKFILLING, AND COMPACTION

- a. Do not place fill material on surfaces that are muddy, frozen, or contain frost or ice.
- b. Place soil stabilization geotextile below structural fill where subgrades have become excessively disturbed, as directed by Engineer.
- c. Use structural fill to increase grades within building areas, under slabs-on-grade and as backfill against foundations and retaining walls.
- d. Contractor may use flowable fill to increase grades below foundations. Allow fill to cure for at least 7 days before setting forms for concrete foundations or placing utilities.
- e. Use subbase/base materials directly below slabs as shown on Drawings.
- f. Backfill trenches with flowable fill/concrete (and/or use sleeves) where trench excavations pass within 18 inches of column or wall footings and that are carried below bottom of such footings or that pass under wall footings. Place concrete to level of bottom of adjacent footing.
- g. Backfill foundation excavations as soon as possible following construction of foundation walls.
- h. Backfill and fill against foundation walls evenly on both sides to prevent any displacement of construction. For walls with fill on one side only, do not backfill until masonry has achieved 70 percent of its design strength and walls have been braced.
- i. Begin filling in the lowest section of the area.

SECTION 02320 PAGE 5
STRUCTURAL EXCAVATION, BACKFILL, AND COMPACTION

- j. Place fill materials in layers not more than 12 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.
- k. Any lift or portion thereof not compacted in accordance with specifications shall be recompactd or removed and replaced to meet compaction requirements.
- l. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density in accordance with ASTM D 1557:
 - 1. Under structures, footings, foundations, building slabs and steps, and pavements, compact top 12 inches of subgrade and each layer of fill material to 95 percent.
 - 2. Subbase/Base Course Materials: Compact to 95 percent with a moisture content no greater than 2 percent wet of optimum.
- m. Moisture Control: Where subgrade or layer of soil material must be moisture- conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material. Apply water in minimum quantity as necessary to prevent free water from appearing on surface during or subsequent to compaction operations.
 - 1. Remove and replace or scarify and air dry soil material that is too wet to permit compaction to specified density.
 - 2. Stockpile or spread soil material that has been removed because it is too wet to permit compaction. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value.

3.09 TOLERANCES

- a. Excavation for structures shall conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 foot except to facilitate drainage during construction stage.
- b. Surface of subbase/base under building slabs shall be graded smooth and even, free of voids, and rolled to required elevation. Provide final grades within a tolerance of 1/2 inch when tested with a 10-foot straightedge.

END OF SECTION 02320

PART 1 GENERAL

1.01 DESCRIPTION

a. Work Included:

The Contractor shall furnish all labor, materials and equipment required for the control of surface and groundwater in protecting and maintaining the work during construction as required for the duration of the project. The work shall include the construction of temporary settling basins or culverts, temporary piping, sandbags, the formation of temporary drainage swales, erosion control measures as required to prevent surface runoff from damaging the integrity of the work areas, loam and seed areas, and all work required to prevent the siltation of nearby waterways or drainage systems. Unless otherwise provided for in this Contract, the cost for temporary erosion control measures and groundwater control shall be included as part of the lump price item(s), and additional payment shall not be made for this work.

b. Related Work Specified Elsewhere:

02250 - Structural Excavation and Backfill

PART 2 PRODUCTS

2.01 SILTATION FENCE

- a. Siltation fence shall consist of a continuous 3-foot wide sediment control fabric reinforced with support netting mounted to oak posts spaced six feet on center.
- b. Standard hay bales required for erosion control.

PART 3 EXECUTION

3.01 SURFACE RUNOFF CONTROL

- a. Construction of drainage facilities and performance of other contract work which will contribute to the control of erosion and sedimentation shall be carried out in conjunction with earthwork operations, or as soon thereafter, as practicable.
- b. Prior to suspension of construction operations for appreciable lengths of time, the Contractor shall shape the earthwork in a manner that will permit storm runoff with a minimum of erosion. Temporary erosion and sediment control measures such as berms, dikes, straw bales, slope drains or sedimentation basins deemed necessary by the Engineer shall be provided and maintained until permanent drainage facilities and erosion control features are completed and operative.
- c. The Contractor shall control all on-site surface runoff during the course of construction in such a manner as to prevent erosion and repair all damage that may result due to surface runoff at no additional cost to the Owner.
- d. Control measures shall be the responsibility of the Contractor as required for the completion of the work.
- e. Prior to the start of construction, siltation fences shall be erected in close proximity to waterways adjacent to the work.
- f. The Contractor shall remove all sediment collected offsite or as directed by the Engineer.
- g. Control measures no longer required shall be removed by the Contractor as approved by the Engineer.

3.02 GROUNDWATER CONTROL

- a. The Contractor shall provide, operate and maintain all equipment required to control all groundwater encountered in excavations and trenches.
- b. De-watering shall include all pumps, drains, well points, piping and any other facilities required for groundwater control.
- c. All excavations and trenches shall remain dry until structures, pipes and appurtenances to be constructed have been completed to such an extent that they will not be damaged.

**SECTION 02540 PAGE 2
SURFACE AND GROUNDWATER CONTROL**

- d. The Contractor shall dispose of water pumped or drained from the work in a suitable manner to avoid public nuisance, injury to public health, damage to public and private property, damage to the work completed or in progress, and impact on wetlands.
- e. The Contractor shall provide suitable temporary channels for water that may flow along or across the construction site.
- f. All damage resulting from the dewatering operations or the failure of the Contractor to maintain the work in a suitable dry condition shall be repaired by the Contractor to the satisfaction of the Engineer, at no additional cost to the Owner.

END OF SECTION

PART 1 GENERAL

1.01 CORRELATION OF DOCUMENTS

- a. All work under this title, on drawings or specified, is subject to the Contract Documents for the entire project and the contractor for this portion of the work is required to refer especially thereto.
- b. Drawings and specifications are complementary and must be so interpreted to determine the full scope of work under this heading. Wherever any material, article, or operation or method is either specified or indicated on the drawings, this contractor is required to provide each item and perform each prescribed operation according to the designated quality, qualification or condition, furnishing all necessary labor, equipment and incidentals.

1.02 SCOPE

Specifically included, without limiting the generality of specifications and drawings, are:

- a. Asphalt concrete paving work including, but not limited to, the following:
 - 1. Placement of asphalt, binder and top courses.
- b. Concrete sidewalks.
- c. Retaining wall caps.

1.03 SUBMITTALS

- a. Material Certificates: Asphalt Concrete Paving: Provide 2 copies of materials certificates signed by the material producer and the Contractor, certifying that each material item complies with or exceeds specified requirements.
- b. Concrete: Comply with same submittal requirements as in Section 03320.

1.04 PROJECT CONDITIONS

- a. Weather Limitations: Apply prime, tack coats and asphalt materials only when ambient temperature is above 50°F and when temperature has not been below 35°F for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.
 - 1. Construct asphalt concrete surface and binder course only when atmospheric temperature is above 40°F, and when base is dry.
- b. Temporary Protection: Erect barricades to protect newly paved from traffic until the asphalt has cooled and has attained its maximum degree of hardness.
- c. Grade Control: Establish and maintain required lines and elevations as specified.
- d. Asphalt paving and concrete walks shall not be placed until sub-base surface is compacted and checked for proper slope for drainage.
- e. Traffic Control:
 - 1. Maintain access for vehicular and pedestrian traffic.
 - 2. Provide barricades, warning signs and warning lights for the movement of traffic and to cause the least interruption of work.
- f. Concrete: Comply with same requirements as in Section 03320.

1.05 QUALITY ASSURANCE

- a. Codes and Standards: Perform asphalt paving operations in compliance with applicable requirements of governing authorities having jurisdiction and in accordance with the Massachusetts State Department of Transportation Standard Specifications.
- b. Concrete: Comply with same testing and inspection requirements as in Section 03320.

1.06 MAINTENANCE GUARANTEE

- a. This contractor shall repair any cracks, spalling or other defects within the guarantee period by complete replacement of the defective slabs.
- b. No patching of the surface will be accepted.

PART 2 PRODUCTS

2.01 ASPHALT MATERIALS

- a. Sub-Base: Crusher run gravel in accordance with Mass Highway Standard Specifications.
- b. Binder Course: Asphalt concrete binder course conforming to Mass Highway Standard Specifications.
- c. Top Course: Asphalt concrete top course conforming to Mass Highway Standard Specifications.
- d. Resurface Top Course: Asphalt concrete top course conforming to Mass Highway Standard Specifications.
- e. Tack Coat: Asphalt Emulsion, conforming to Mass Highway Standard Specifications.

2.02 CONCRETE MATERIALS

- a. Concrete Sidewalk Sub-Base Course: Crusher run gravel in accordance with Mass Highway Standard Specifications.
- b. Concrete Mixes:
 - 1. General:
 - a. Proportions determined by contractor, per ACI 318, subject to Engineers approval and following limitations.
 - 2. Mix Design:
 - a. By commercial testing laboratory. Mix shall be workable without bleeding or segregation. No job concrete poured until 7-day tests show at least 65% of design strength. Once established, the mix shall not be changed, or extra water added.
 - b. Specific Requirements:
 - 1. Minimum average compressive strength, at 28 days to meet specified psi plus 15% unless indicated.
- c. All cast-in-place concrete shall be ready mixed concrete meeting the following criteria:

28 day compressive strength	4000 psi
Minimum cement factor	6 bags
Maximum aggregate size	3/4" -
Air entrainment	5% to 7%
Slump	3" to 4"
Maximum W/C	.45
- d. Air Entraining Admixture:
 - 1. ASTM C-260, "Darex AEA", Sika "AE", or approved equal.
- e. Premoulded Expansion Joint Filler:
 - 1. Asphalt impregnated compressive expansion joint filler shall be "pre-cut" to match the concrete sidewalk cross-sectioned dimensions.
 - 2. Joint Sealant:
 - a. Provide two-component polyurethane sealant.
 - b. Polyurethane base, 2-part elastomeric sealant.
- f. Forms:
 - 1. Forms shall be of wood, plywood or steel, straight, of sufficient strength to resist springing during depositing and consolidating concrete, and of a height equal to the full depth of the finished sidewalk.
 - 2. Coat forms with a non-staining, clean, form release agent which will not discolor or deface the surface of the concrete.
- g. Anti-Spalling Compound:
 - 1. Anti-spalling compound shall be a clear penetrating silane base water repellent which will not discolor or alter the appearance of concrete.
 - 2. Manufacturers subject to compliance requirements. Products are not limited to the following:
 - a. Sonneborn-Chemrex Inc.; 7711 Computer Avenue; Minneapolis, MN 55435; (800) 433-9517; Penetrating Sealer 40.
 - b. Anti-Hydro Company; 265 Badger Avenue; Newark, NJ 07108; Aridox 40.
 - c. Tamms Industries Company; Wilkes-Barre, PA 18702; Baracade Silane 40.

- h. Sealants:
 - 1. Sealant shall be self-leveling single component polyurethane sealant meeting ASTM C-920, Type S, Grade NS, Class 25. Color: Limestone.
 - 2. Manufacturers are subject to compliance with requirements. Products are not limited to the following:
 - a. Sonneborn "Sonolastic NP-1".
 - b. Sika "Sika Flex-1a".
- i. Reinforcing Mesh:
 - 1. Welded wire mesh as specified in on plans.
 - 2. Provide galvanized reinforcement supports. Do not use wood, brick or other unacceptable material.
- j. Non-Shrink Grout: CRD-C 62221, factory pre-mixed grout.
 - 1. Sonneborn-ChemRex "SonogROUT 14K".
 - 2. Eulid Chemical Co. "Euco-NS".
- k. Curing-Moisture Retaining Covers:
 - 1. White opaque polyethylene curing cover, 8 mil thick minimum, NYSDOT 711-04.
 - 2. Membrane Curing Compound:
 - a. NYSDOT 711-05, Type 5 Clear, will not discolor concrete.

PART 3 EXECUTION

3.01 INSPECTION

- a. The Contractor shall inspect the conditions under which the asphalt concrete paving is to be completed and notify the Owner of conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION - ASPHALTIC PAVEMENT

- a. Preparation:
 - 1. Contractor shall field verify all existing conditions to determine the amount of work.
 - 2. Saw-cut and remove existing pavement where new pavement aligns with existing pavement indicated to remain.
 - a. Sawcut on neat straight lines.
 - b. Sawcutting is to be completed before removals are started.
 - 3. Remove all loose material from compacted subbase surface immediately before placing the asphalt binder course.
 - 4. Compact prepared subgrade and subbase surfaces to check for unstable areas and areas requiring additional compaction. Notify the Engineer of unsatisfactory conditions. Do not begin paving work until deficient subbase areas have been corrected and are ready to receive paving.
 - 5. Existing asphalt to be resurfaced shall be swept clean of all loose material, dust and dirt. Inspect the asphalt to be resurfaced and repair any cracks or unstable areas.
 - 6. Tack Coat: Apply to contact surfaces of previously constructed asphalt or portland cement concrete and surfaces abutting or projecting into the new asphalt concrete pavement. Apply at a rate of 1.05 to 0.07 gallons per square yard of surface. Allow to dry until at proper condition to receive asphalt paving.
- b. General - New Pavement Areas:
 - 1. Pavement Shall Consist Of:
 - c. Asphaltic concrete binder course.
 - d. Asphaltic concrete top course.
- c. Sub-Base Course:
 - 1. General: Sub-base course consists of placement of specified materials, in layers to match existing thickness, over compacted subgrade.
- d. Placement and Compaction:
 - 1. Place sub-base material on prepared subgrade in layers of uniform thickness. Maintain optimum moisture content for compacting material during placement. Place material in

- equal layers, except no layer shall be more than 6" or less than 3" in thickness when compacted.
2. Use a smooth-wheeled roller and roll each layer until stone is thoroughly compacted to proper thickness, and does not wave or creep before roller.
 3. Thickness of sub-base is compacted thickness, after rolling.
- e. Asphalt Pavement:
1. Surface Preparation:
 - a. Proof roll prepared sub-base surface to check for unstable areas and areas requiring additional compaction.
 - b. Do not begin asphalt pavement until sub-base areas have been corrected.
 - c. Existing Paving:
 1. Saw-cut abutting edges of existing paving clean and straight.
 2. Cut and remove minimum 12" existing paving to ensure firm, clean, tight joint.
 3. Coat cut edges of abutting pavement with tack coat.
 - d. Tack Coat:
 1. Apply to contact surfaces of previously constructed asphalt concrete pavement, and surfaces abutting or projecting into asphalt concrete pavement.
 - e. Placing Mix:
 1. General:
 - a. Place asphalt concrete mixture on prepared surface, spread and strike-off.
 - b. Spread mixture at minimum temperature of 250°F.
 - c. Place inaccessible and small areas by hand.
 - f. Place each course to required grade, cross-section and compacted thickness.
 1. Place in strips not less than 10' wide, unless otherwise acceptable.
 2. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips.
 - g. Joints:
 1. Make joints between old and new pavements, or between successive days work, to ensure continuous bond between adjoining work.
 2. Construct joints to have same texture, density and smoothness as other sections of asphalt concrete course.
 3. Clean contact surfaces and apply tack coat.
 - f. Rolling:
 1. General: Begin rolling when mixture will bear roller weight without excessive displacement.
 2. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
 3. Breakdown Rolling:
 - a. Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge.
 - b. Check surface after breakdown rolling and repair displaced areas by loosening and filling, if required, with hot material.
 - g. Second Rolling:
 1. Follow breakdown rolling as soon as possible while mixture is hot.
 2. Continue second rolling until mixture has been thoroughly compacted.
 - h. Finish Rolling:
 1. Perform finish rolling while mixture is still warm enough for removal of roller marks.
 2. Continue rolling until roller marks are eliminated and course has attained maximum density.
 3. Patching:
 - a. Remove and replace paving areas mixed with foreign materials and defective areas.
 - b. Cut out such areas and fill with fresh, hot asphalt concrete.
 - c. Compact by rolling to maximum surface density and smoothness.
 - i. Protection:
 1. After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

- j. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.03 ASPHALTIC PAVEMENT QUALITY CONTROL

- a. General:
 - 1. Match thickness of existing pavement layers.
 - 2. Repair or remove and replace unacceptable paving.
- b. Thickness:
 - 1. In-place compacted thickness will not be acceptable if exceeding following allowable variation from required thickness:
 - a. Base Course: 1/2"±.
 - b. Surface Course: 1/4"±.
- c. Surface Smoothness:
 - 1. Test finished surface of each asphalt concrete course for smoothness, using 10' straightedge applied parallel with and at right angles to, centerline of paved areas.
 - 2. Surface will not be acceptable if exceeding the following tolerances of smoothness:
 - a. Base Course: 3/8" in 10'.
 - b. Surface Course: 1/4" in 10'.
- d. Check surface areas for proper drainage. Ponding areas larger than three (3) feet in any dimension shall be corrected.

3.04 INSTALLATION CONCRETE

- a. Install sub-base course per the plans and compact on properly graded subgrade.
- b. Batching and Mixing:
 - 1. Aggregate and cement accurately measured by weight. Weights corrected for varying aggregate moisture.
 - 2. Water accurately measured by volumetric float control.
 - 3. Mix at least 60 revolutions in modern power mixer.
 - 4. Transit mixed concrete from an established company shall conform to ASTM C-94, and to this specification.
 - 5. In winter, heat water and aggregates; concrete temperature at placement shall range between 60°F and 80°F.
- c. Forms:
 - 1. Formwork shall conform to recommendations in ACI 318. The contractor shall construct suitable and adequate forms of wood or plywood. Responsibility for adequacy and safety of forms rests with the contractor. All shoring shall be properly braced to withstand all lateral forces during the construction period.
 - 2. Construction of Forms:
 - a. All forms shall be set true to line, plumb, and properly braced so as to maintain the desired position and shape during and after pouring concrete.
 - b. Walks 4'-0" wide or less, shall be 4" thick. Walks over 4'-0" wide, shall be 5" thick.
 - c. Reinforcing mesh shall be in the center of the slab thickness.
- d. Concrete Placement:
 - 1. Thoroughly wet sub-base course before placing concrete. Forms shall be tight and true to line and grade.
 - 2. "Re-tempering" of mix not permitted. Vibrate or spade concrete as needed to eliminate voids.
 - 3. Concrete Finishing:
 - a. After striking off and consolidating concrete, smooth the exposed surface by screeding and floating. Adjust floating to compact the surface and produce a uniform texture.
 - b. After floating, test surface for trueness with a 10' straightedge. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous, smooth finish.
 - c. Work edges, back top edge of curb, transverse joints and weakened plane joints with an edging tool, and round to 1/4" radius, unless otherwise indicated.

- e. Concrete Finish: After completion of floating and when excess moisture or surface sheen has disappeared, complete surface finishing as follows:
 - 1. Fine Broom Finish:
 - a. Finish all walks and steps by drawing a fine hair broom across the concrete surface, perpendicular to the line of traffic to provide non-slip surface.
 - b. Repeat operation if required to provide a fine line texture acceptable to the Engineers.
 - 2. Trowel Finish (retaining wall cap):
 - a. Finish concrete using a steel trowel to provide a smooth uniform texture and appearance, free of trowel marks.
 - 3. Form Removal:
 - a. Do not remove forms within 24 hours after concrete has been placed.
 - b. After form removal, clean ends of joints and point up minor honeycombed surface areas.
 - c. Remove and replace sections of major honeycombing, as directed by the Engineer.
- f. Curing:
 - 1. Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at a relatively constant temperature for a period of time necessary for hydration of cement and proper hardening.
 - 2. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 72 hours.
 - 3. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.
 - 4. Curing Methods: Perform curing of concrete by moist curing, by moisture retaining cover curing, by membrane curing, and by combinations thereof, as herein specified.
 - a. Moisture Retaining Cover Curing:
 - 1. Cover concrete surfaces with a moisture retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive.
 - 2. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - 3. Membrane Curing:
 - a. Apply compound in strict conformance to manufacturer's recommendations to freshly placed damp concrete at a rate of not less than 1 gallon per 150 square feet.
 - b. Do not apply if temperature in below 40°F.
- g. Joints:
 - 1. Expansion Joints:
 - a. Install expansion joint filler between concrete walk sections at juncture of walks to building, to steps, curbs, manholes, catch basins, and as otherwise indicated at intervals no greater than 20 linear feet.
 - b. Protect top edge of joint filler during concrete placement with metal or plastic cap material.
 - c. Remove protection after concrete is placed.
 - 2. Weakened Plane (Contraction) Joints: Provide joints at 4' o.c. unless otherwise indicated.
 - 3. Construction Joints: Place construction joints at the end of pours and at locations where placement operations are stopped for a period of 1/2 hour or more, except where pours terminate at expansion joints. Continue reinforcement across joints.
- h. Spalling Protection:
 - 1. After a 30-day curing period, sweep walks clean and dry.

- b. Anti-Spalling Treatment:
 - 2. Apply compounds to concrete surfaces no sooner than 30 days after placement, to clean, dry concrete free of oil, dirt, and other foreign material.
 - 3. Apply anti-spalling compound in one application at the rate of 100-150 sq. ft./gallon.
 - 4. Apply anti-spalling compound per manufacturer's recommendations.
- i. Concrete Repair and Protection:
 - 1. Repair or replace broken or defective walks and caps as directed by the Engineer.
 - 2. Protect the walk and caps from damage until acceptance of the work.
 - 3. Exclude traffic from walks and caps for at least 14 days after placement.
 - 4. When construction traffic is permitted, maintain walks and caps as clean as possible by removing surface stains and spillage of materials as they occur.
- j. Concrete Clean Up:
 - 1. Sweep concrete walks and caps free of stains, discoloration, dirt and other foreign material just prior to final inspection.

3.06

CLEAN UP

- a. Entire site shall be left in a clean and orderly condition, with all construction materials, debris, tools and equipment removed.

END OF SECTION

PART 1 GENERAL

1.01 DESCRIPTION

- a. Work Included:
Furnish all labor, materials and equipment required for clean-up of the site on a daily basis and for final clean-up as specified herein and as directed by the Engineer.
- b. The Contractor shall employ at all times during the course of the project adequate clean-up measures and safety precautions to prevent injuries to persons or damage to property. The Contractor shall immediately, upon direction by the Engineer, provide adequate material, equipment and labor required for clean-up of all areas deemed necessary by the Engineer.
- c. The cost of clean-up work required for or incidental to clean-up shall be included in the lump sum cost established in the bid form.
- d. During the course of the project and at completion of work, the site is to be in an attractive state, neat and clean from all debris, to the satisfaction of the Engineer.

PART 2 PRODUCTS

Not applicable to this Section.

PART 3 EXECUTION

3.01 DAILY CLEAN-UP

- a. The Contractor shall clean up, at least daily, all refuse, rubbish, scrap and surplus material, debris and unneeded construction equipment resulting from the construction operations. The site of the work and the adjacent areas affected thereby shall at all times present a neat, orderly and workmanlike appearance.
- b. Upon written notification by the Engineer, the Contractor shall, within 24 hours, clean up those areas, which in the Engineer's opinion are in violation of this section and the above-referenced sections of the specifications.
- c. If, in the opinion of the Engineer, the referenced areas are not satisfactorily cleaned up, the Engineer reserves the right to withhold payment equal to ten (10) percent of the total amount requested for pay estimate purposes until such time as clean-up has been completed.

3.02 DRAINAGE FACILITIES

- a. Where material or debris has washed or flowed into or has been placed in existing watercourses, ditches, gutters, drains, pipes and/or structures, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the work, and the ditches, channels, drains, pipes, structures and work shall, upon completion, be left in a clean and neat condition.

3.03 TEMPORARY STRUCTURES, BUILDINGS, OR EQUIPMENT

- a. Prior to completion of the work, or as directed by the Engineer, the Contractor shall remove all temporary structures constructed, as required for completion of the project.
- b. This work shall include the removal of temporary buildings or structures, tools, machinery or construction equipment, siltation fences and hay bales used for erosion control including trapped sediment, and all rubbish and debris from the project site.

3.04 RESTORATION OF DAMAGED PROPERTY

- a. The Contractor shall restore or replace all property damaged by the Contractor to a condition equal to that existing immediately prior to the start of construction.

3.05 FINAL CLEAN UP

Prior to final acceptance by the Owner, the Contractor shall clean up the site to its original or specified condition. Clean-up shall include removing all trash and debris off of the premises and the removal of all construction material, excess excavation, equipment and debris remaining on the site as a result of construction operations.

PART 4 SPECIAL CONDITIONS

4.01 EROSION CONTROL

- a. Erosion control devices shall be inspected before and after each rainstorm. Sedimentation shall be removed immediately.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- a. Drawings and general provisions of contract, including general and supplementary conditions, apply to this section.

1.02 QUALITY ASSURANCE

- a. Reference Standards:
 1. ACI 302 "Guide for Concrete Floor and Slab Construction."
- b. Provide protection from precipitation for the slab subbase/base prior to slab-on-grade placement. Provide protection for the slab-on-grade from direct exposure to the sun, wind, precipitation, and excessive cold or hot temperatures starting during placement and lasting until the end of the curing period.
 1. After the curing period, provide protection from precipitation for any slab openings to prevent moisture from entering the slab subbase/base.
 2. Contractor shall be responsible for the cost of repairing slab defects due to deficient protection methods.

1.03 SUBMITTALS

- a. Mix Designs: Submit proposed mix designs for concrete at least 15 days before start of concreting.
- b. Submit data and installation instructions for proprietary material.
- c. Submit the material certificates certifying that each material complies with specifications.
- d. Submit chloride ion content of all proposed admixtures prior to mix design submission.

1.04 STRUCTURAL TESTS AND INSPECTIONS

- a. Coordinate with the Engineer to provide the following.
 1. Inspect reinforcing steel and placement.
 2. Verify the use of the required design mix.
 3. Sample and test concrete for quality assurance during placement as follows (tests shall be taken at point of discharge into structure):
 - a. Location: Record specific location(s) where the concrete was placed.
 - b. Record time concrete is batched as shown on truck ticket, time placement begins, time concrete is sampled, and time truck is emptied.
 - c. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 - d. Slump: ASTM C 143, one for each concrete truck, two if concrete is pumped; measure at point of discharge from truck and at point of discharge from pump line.
 - e. Air Content: ASTM C 231, pressure method, one for each truckload of ready-mixed concrete (air-entrained or non-air-entrained).
 - f. Temperature: One test for each concrete truckload. Test in-place concrete temperature hourly when ambient temperature is 40 degrees F and below and when 80 degrees F and above.
 - g. Weather: Record air temperature and general conditions (cloudy, windy, sunny, etc.).
 - h. Concrete Compressive Test: One set of six standard cylinders for each 5 cubic yards or fraction thereof of each concrete class placed in any one day for each compressive strength test.
 1. Prepare compressive test specimens in accordance with ASTM C 31. Store undisturbed in an insulated box during cold weather. Deliver to laboratory between 16 and 32 hours after making. Perform compressive tests in accordance with ASTM C 39: two specimens tested at 7 days, two specimens tested at 28 days, and two specimens retained in reserve for later testing if required.

4. Inspect concrete placement for proper techniques.
5. Inspect for maintenance of specified curing temperature and techniques.
6. Forward all test reports to Engineer and Contractor on same day that tests are made.
7. Reports shall be specific in description and location of testing.

PART 2 - PRODUCTS

2.01 MATERIALS

- a. Portland Cement: ASTM C 150. Type I/II only.
- b. Reinforcement: ASTM A 615, Grade 60, for uncoated deformed bars.
- c. Supports for Reinforcement: Use wire-bar type supports complying with CRSI specifications. Use chairs with sand plates or horizontal runners where base material will not support chair legs.
 1. Concrete bricks may be used to support reinforcing; stagger brick locations.
 - a. Do not use clay bricks.
 - b. Do not use bricks to support epoxy-coated or galvanized reinforcing.
- d. Meet requirements of ASTM C 33 or nonconforming aggregate that by test or actual service produces concrete of required strength and conforms to local governing codes. The aggregates shall be uniformly graded by weight as follows:
 1. Fine Aggregate: Clean, hard, strong, durable and impermeable particles, resistant to wear and frost, inert to cement and water, reasonably free from structurally weak grains, organic matter, loam, clay, silt, salts, mica or other fine materials that may affect bonding of the cement paste. Sand shall be taken from a natural deposit. The sand particles shall be relatively spherical in shape, and shall have gritty surfaces.

<u>Sieve Size</u>	<u>Percent Passing</u>
3/8 inch	100
No. 4	95 to 100
No. 16	55 to 80
No. 50	10 to 25
No. 100	2 to 8
No. 200	0 to 3
 2. Coarse Aggregate: Crushed rock or screened gravel composed essentially of clean, hard, strong, and impermeable particles, resistant to wear and frost, and free from deleterious amounts of organic matter, loam, clay, salts, mica, and soft, thin, elongated, laminated or disintegrated stone, and inert to water and cement.

<u>Sieve Size</u>	<u>Percent Passing</u>
1-1/2 inch	90 to 100
3/4 inch	35 to 60
3/8 inch	10 to 25
No. 4	0 to 5
- e. Water: Clean, fresh, drinkable.
- f. Air Entraining: ASTM C 260.
- g. High-Range, Water-Reducing Admixture (Superplasticizer): "Eucon 37" by the Euclid Chemical Co. or "Sikament" by Sika Chemical Corp. The admixture shall conform to ASTM C 494, Type F or G, and not contain more chloride ions than are present in municipal drinking water.
- h. Water-Reducing Admixture: ASTM C 494, Type A.
- i. Mid-Range, Water Reducer/Finish Enhancer: ASTM C 494, Type A/F. "Daracem 55" or "Daracem 65" by W.R. Grace or accepted equivalent.
- j. Premolded Joint Filler: Provide resilient and non-extruding premolded bituminous fiberboard units complying with ASTM D 1751; 1/2-inch-thick, full-slab depth.
- k. Construction Joint Form: Square edge form only. Keyed joint not permitted.
- l. Joint Sealant for Interior Slabs: "Sikadur 51SL" by Sika; "Spec-Joint CJ" by Conspec Manufacturing Co.; "Masterfill CJ" by Master Builders, Inc.; "Euco 600" by Euclid Chemical Co.; or accepted equivalent.
- m. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per square

- yard, complying with AASHTO M 182, Class 2.
- n. Curing Sheet Materials: ASTM C 171; One of the following: waterproof paper, polyethylene film, or polyethylene-coated burlap. "HydraCure S16" by PNA Construction Technologies or accepted equivalent.
- o. Evaporation Retarder: Monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss. "Aquafilm" by Conspec Manufacturing Co.; "Eucobar" by Euclid Chemical Co.; "Confilm" by Master Builders, Inc.; or accepted equivalent.
- p. Crack Repair Material: "Sika Pronto 19" by Sika; "Crack-Fill 4" by Metzger/McGuire; or accepted equivalent.

2.02 PROPORTIONING AND MIX DESIGN

a. CONCRETE QUALITY

Location	Required 28-Day Compressive Strength (psi)	Approximate Cement Content (pounds)	Maximum Water/Cement Ratio	Percent Entrained Air
Interior slabs on grade	4,000	530	0.50 (265 pounds maximum total water)	2*

* Do not add air-entraining admixtures. Air entrainment occurs as a result of mixing.

- b. Slump: 5 inch maximum for normal and mid-range, water-reduced mixes.
- c. Concrete containing a high-range, water-reducing admixture (superplasticizer) shall have a maximum slump of 7 inches unless otherwise accepted by Engineer. Concrete shall arrive at job site at a slump of 2 to 3 inches, shall be verified, then high-range, water-reducing admixture added to increase slump as required for placement and workability.
- d. Use maximum of 6.0 sacks of cement per cubic yard for interior slabs and minimum sand content.
- e. The quantity of coarse aggregate in pounds must be in the range of 1.25 to 1.5 times the quantity of fine aggregate in pounds. Provide a minimum of 1,800 pounds of coarse aggregate per cubic yard of concrete.
- f. Pumping of concrete is permitted only if mix designs specifically prepared and used previously for pumping are submitted. Mix designs not previously used for the anticipated pump line lengths shall be tested by the Contractor to verify suitability for the Project before use at the site. Pump line shall have a 5-inch-minimum inside diameter and shall be used with 5-inch pumps.

PART 3 – EXECUTION

3.01 GENERAL

- a. Examine conditions under which work shall be performed. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 PRECONCRETE PLACEMENT

- a. Just before concrete placement, the slab subbase/base shall be dry.
- b. Whenever possible, air temperatures should be rising after concrete placement. Attempt to schedule slab placements according to favorable weather reports.
- c. Subgrade shall be frost-free.

3.03 EDGE FORMS AND SCREED STRIPS FOR SLABS

- a. Set edge forms, bulkheads, and intermediate screed strips for slabs to obtain required elevations and contours in finished slab surfaces. Provide secure edge forms or screed strips to support strike-off templates or compacting vibrating-type screeds. Wet screeding will not be permitted.

3.04 REINFORCEMENT PLACEMENT

- a. Place slab reinforcing one-third of slab thickness below top surface of slab. Support reinforcement by metal chairs, runners, bolsters, or concrete brick, as required.
- b. Offset laps to prevent continuous laps in either direction.
- c. Dedicate workers to placement of reinforcement to continuously monitor and adjust location of reinforcement during concrete placement.

3.05 ISOLATION JOINTS

- a. Construct isolation joints in slabs on grade at points of contact with vertical surface and elsewhere as indicated.

3.06 CONSTRUCTION JOINTS

- a. Locate and install construction joints, which are not shown in drawings so as not to impair strength and appearance of structure as acceptable to Engineer.
- b. Continue half of the bar reinforcement through construction joints in concealed slabs.

3.07 CONTRACTION JOINTS

- a. Saw cut contraction joints as soon as possible after finishing, generally within 4 to 16 hours. Make sample cut to determine if concrete surface is firm enough so that it is not torn or damaged by the blade.
- b. Use soft-cut contraction joints. Depth of cut shall be 1/5 of the slab thickness with a minimum of 1 inch.
- c. Obtain permission from Engineer if diamond blade cutting is to be used.
- d. Continue half of the bar reinforcement through contraction joints in concealed slabs.

3.08 PLACING CONCRETE SLABS

- a. A maximum of 2 1/2 gallons per cubic yard of total mix design water can be added in field.
- b. Use strip pour methods and mechanical vibratory screed whenever possible.
- c. Deposit and consolidate concrete in a continuous operation within limits of construction joints until placing of panel or section is completed.
- d. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
- c. Bring slab surfaces to correct level with a straightedge and strike off. Use darbies to smooth surface, leaving it free of humps or hollows. Do not sprinkle water or portland cement on plastic surface. Do not disturb slab surfaces before beginning finishing operations.
- d. Maintain reinforcement in proper position during concrete placement operations. See requirements for reinforcement placement.
- e. Slab thicknesses shown in drawings are the minimum allowable. Maximum allowable thickness shall be 1 inch greater than specified thickness.

3.09 MONOLITHIC SLAB FINISHES

- a. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed to view and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or other thin-film finish-coating system. After floating, begin first trowel-finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation. Surface shall be free of trowel marks, uniform in texture and appearance, and leveled. Grind smooth surface defects that would telegraph through applied floor-covering system. Exposed surfaces are to be overtrowelled to "burn" the surface to a dense, hard, dark finish.
- b. Delay finishing as long as possible. Allow bleed water to evaporate before finishing.

- c. Finish slabs to specified tolerances given. Patching of low spots will not be permitted. Grinding shall be done as soon as possible, preferably within 3 days, but not until concrete is sufficiently strong to prevent dislodging coarse aggregate particles.

3.10 COLD-WEATHER CONCRETING

- a. Comply with ACI 306.
- b. Provide temporary heat with vented heaters only.
- c. Use foggers to maintain humidity at 50 percent minimum.

3.11 HOT-WEATHER CONCRETING

- a. Comply with ACI 305.

3.12 CURING AND PROTECTION

- a. Protect freshly placed slabs from premature drying and excessive cold or hot temperature and maintain without drying at a relatively constant temperature for a period of time necessary for hydration of cement and proper hardening.
- b. Cure interior slabs by sheet-curing by covering slabs with curing sheet material for at least 7 days and avoiding rapid drying at end of curing period. Place curing cover in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair holes or tears in cover during curing period.
- c. Do not allow foot or other traffic over slabs during 7-day curing period.
- d. Cure slabs or pads a minimum of 14 days before placing equipment.

3.13 JOINT SEALANT

- a. Install joint sealant in all exposed construction, isolation, and contraction joints in accordance with manufacturer's recommendations.
- b. Clean joints thoroughly before applying sealant.
- c. Apply sealant after slabs have cured a minimum of 90 days.

3.14 REPAIR OF SURFACES

- a. Contractor shall be responsible for cost of repairing slab defects.
- b. Correct flatness and levelness defects by grinding or removal and replacement of slab. Patching of low spots will not be permitted. Repair areas shall be remeasured and accepted by Owner.
- c. Repair cracks only when slab is more than 90 days old. Use crack repair material. For cracks over 1/8 inch, fill crack with oven-dried sand prior to application of crack repair material, as recommended by manufacturer. Contractor also has option to remove and rebuild areas of cracking. Mask cracks to limit crack repair material to crack only.
- d. Repair edge spalls which occur from shrinkage cracking or from Contractor's operations with methods acceptable to Engineer.

END OF SECTION 03320

PART 1 GENERAL

1.01 CORRELATION OF DOCUMENTS

- a. All work under this title, on drawings or specified, is subject to the Contract Documents for the entire project and the contractor for this portion of the work is required to refer especially thereto.
- b. Drawings and specifications are complementary and must be so interpreted to determine the full scope of work under this heading. Wherever any material, article, operation or method is either specified or shown on the drawings, this contractor is required to provide each item and perform each prescribed operation according to the designated quality, qualification or condition, furnishing all necessary labor, equipment and incidentals.

1.02 SCOPE

Specifically included, without limiting the generality of specifications and drawings, are:

- a. Mortar for concrete unit masonry.
- b. Grout for masonry reinforcement and where noted.

1.03 RELATED SECTIONS

Related work specified elsewhere:
04200 - Unit Masonry

1.04 SUBMITTALS

- a. Material specifications and data for mortar and grout, certifying compliance with specification requirements. Submit test reports.

PART 2 PRODUCTS

2.01 QUALITY OF MATERIALS

- a. Comply with ACI 530 Building Code Requirements for Masonry Structures.
- b. Comply with ACI 530.1 Specifications for Masonry Structures, except as otherwise indicated.
 1. Revise ACI 530.1-92 to exclude Section 1.4 and 1.7; Parts 2.1.2, 3.1.2, and 4.1.2; and Articles 1.5.1.2, 1.5.1.3, 2.1.1.1, 2.1.1.2, and 2.3.3.9 and to modify Article 2.1.1.5 by deleting requirement for installing vent pipes and conduits built into masonry.
- c. Mortar:
 1. ASTM C270 Proportion Specification for Job-Mixed Mortar.
 2. Cementitious materials, water and aggregate complying with requirements specified in this article, combined with set-controlling admixtures to produce a ready-mixed mortar complying with ASTM C1142.
- d. Grout for Unit Masonry: ASTM C476 proportion specification, fine and course grout; slump of 8" to 10".
- e. Portland Cement: ASTM C150, Type 1, of natural color or white as required to produce the desired color.
- f. Fly Ash: ASTM C168 Type F. Use for 20% replacement of portland cement in grout.
- g. Hydrated Lime: ASTM C207, Type S.
- h. Aggregate for Mortar: ASTM C144.
- i. Aggregate for Grout: ASTM C404..
- j. Water: Clean and potable.
- k. Admixtures: Do not add admixtures including coloring pigments, air-entraining agents, accelerators, retarders, water repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
- l. Single-Source Responsibility for Mortar and Grout Materials: Obtain mortar and grout ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.
- m. Match existing mortar color.

PART 3 EXECUTION

3.01 INSTALLATION

- a. See Section 04200 Unit Masonry.
- b. Where mortar types are not indicated on drawings or specified, use the following types:
 1. TYPE S:
 - a. For exterior masonry.
 - b. For interior wythe of exterior walls.
- c. Mixing Mortar and Masonry Grout:
 1. Materials and equipment clean and watertight.
 2. Measuring by positive methods, determined at start of job.
 3. Mortar and grout shall only be mixed in mechanical mixer for a minimum period of 5 minutes, after all materials are in mixer, with amount of water required to produce desired workability.
 4. Mortar shall be used and placed in final position within 2 hours after initial mixing and shall not be left standing more than 1 hour without remixing; otherwise it shall be discarded. Mortar that has begun to set shall also be discarded.
 5. Store cement and lime in raintight shed with floor; or indoors. Store sand on planks and covered, kept free of contaminating substances.

END OF SECTION

PART 1 GENERAL

1.01 CORRELATION OF DOCUMENTS

- a. All work under this title, on drawings or specified, is subject to the Contract Documents for the entire project and the contractor for this portion of the work is required to refer especially thereto.
- b. Drawings and specifications are complementary and must be so interpreted to determine the full scope of work under this heading. Wherever any material, article, operation or method is either specified or shown on the drawings, this contractor is required to provide each item and perform each prescribed operation according to the designated quality, qualification or condition, furnishing all necessary labor, equipment and incidentals.

1.02 SCOPE

Specifically included, without limiting the generality of specifications and drawings, are:

- a. Concrete unit masonry.
- b. Exterior masonry walls.
- c. Masonry reinforcing, ties, anchors, and control joints.
- d. Installation of sills, lintels, anchors, bolts, flashing, and sleeves.
- e. Miscellaneous masonry accessories.

1.03 RELATED SECTIONS

Related work specified elsewhere:

04100 - Mortar and Masonry Grout

1.04 REFERENCE STANDARDS

- a. Comply with the following Codes and Standards:
 1. ACI 530 Building Code Requirements for Masonry Structures.
 - a. Revise ACI 530.1-99 to exclude Sections 1.4 and 1.7; Parts 2.1.2, 3.1.2 and 4.1.2; and Articles 1.5.1.2, 1.5.1.3, 2.1.1.1, 2.1.1.2 and 2.3.3.9 and to modify Article 2.1.1.5 by deleting requirement for installing vent pipes and conduits built into masonry.
 2. ACI 530.1 Specifications for Masonry Structures.
 4. ASTM C-90 Load-Bearing Concrete Masonry Units.
 5. ASTM C-140 Sampling and Testing Concrete Masonry Units.
 6. National Concrete Masonry Association (NCMA) Manual. (TEK number references in this specification are new TEK numbers.)
 7. New York State Concrete Masonry Association TEK-SPEC #1.
 8. ASTM E 119 Fire Test of Building Construction and Materials.

1.06 SUBMITTALS

- a. Manufacturer's specification and data for each type of masonry unit.
- c. Manufacturer's test reports for concrete masonry unit.
 1. Test concrete masonry units in accordance with ASTM C 140 and ASTM C 426.
- d. Manufacturer's specifications and data sheets for joint reinforcing and accessories.

1.07 DELIVERY, STORAGE AND HANDLING

- a. All units shall be delivered on pallets; poly wrapped.
- b. Store masonry units off the ground on platforms, which allow air circulation under stacked units.
- c. Cover and protect units against wetting prior to use.
- d. Handle units on pallets or flat bed barrows.
- e. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.08 PROJECT CONDITIONS

- a. Cold Weather Requirements: Comply with NCMA-TEK 3-1.
- b. At temperatures below 40°F maintain mortar temperature between 40°F and 120°F. If necessary, heat mixing water and sand to produce the required results.
- c. At temperatures between 40°F and 32°F, protect masonry from rain and snow for 24 hours after laying.
- d. At temperatures between 32°F and 20°F, provide wind breaks and cover masonry to prevent wetting and freezing. Maintain masonry above freezing for not less than 24 hours using auxiliary heat or insulating blankets.
- e. At temperatures below 20°F, provide heated enclosures for laying the masonry. At the end of the workday, maintain the enclosures and keep the work from freezing for not less than 24 hours.
- f. Do not lower freezing point of mortar by use of anti-freeze, calcium chloride or other additives.
- g. Do not use frozen materials or materials coated with ice or frost.
- h. During construction, cover tops of walls, copings, sills and other openings and projections with a waterproof sheeting at the completion of each day's work. Cover partially completed masonry when construction is not in progress. Extend sheeting a minimum of 24" down both sides of masonry and hold securely in place.
- i. Prevent and remove immediately any mortar, grout, and soil droppings that come in contact with masonry units.
- j. Protect base of walls from rain-splashed mud and mortar by means of coverings on ground and over wall surface.
- k. Protect surfaces of windows, door frames and other finished products from mortar droppings.

1.09 LEVELS AND LINES

- a. Levels: From benchmark and elevations shown. Vertical course layout.
- b. Lines: Both sides of walls.

1.10 HEIGHT OF WALLS

- a. All walls to underside of floor.

PART 2 PRODUCTS

2.01 GENERAL

- a. Obtain masonry units from one manufacturer of a uniform blend of texture and within acceptable color ranges for style required. Provide appropriate shapes and sizes where required for special conditions.
- b. Obtain horizontal joint reinforcement, anchors and ties from one manufacturer.
- c. Quality and texture to Engineer's satisfaction. Masonry units to be free of cracks, chipped edges and handled in a manner to prevent same.
- d. See Section 04100 for mortar and masonry grout.

2.02 CONCRETE MASONRY UNITS

- a. ASTM C-90, Type I, Normal Weight, Load-Bearing with nominal face dimensions of 8" high x 16" long x required widths, as manufactured in standard color and matching texture.
- b. Special Shapes: Units of shape and size required for lintels, corners, jambs, sash, control joints, headers, bonding and all other special conditions indicated. Square edge outside corners unless otherwise shown.

2.03 CONCRETE MASONRY SCHEDULE

- a. Hollow Load-Bearing Units (Normal Weight): Use for all exterior work, unless otherwise scheduled or noted on the drawings.

2.04 HORIZONTAL JOINT REINFORCING

- a. Truss or ladder design, minimum 9 gauge deformed welded steel wire per ASTM A-82.
- b. Provide mortar coverage 5/8" to 1" for exterior exposed faces. Provide mortar coverage of 1/2" to 1" elsewhere.
- c. Provide welded wire units prefabricated in straight lengths of not less than 10 feet, with matching corner ("L") and intersecting ("T") units for all wall intersections.
- d. For single walls, or vertically reinforced walls provide Ladur Type by Dur-O-Wal, Inc. or accepted equivalent.
- e. For reinforcing and ties, provide mill galvanized finish to comply to ASTM A-641, Class 1 (.40 oz. per sq. ft.) except, for exterior walls, hot-dip galvanize after fabrication to comply with ASTM A-153, Class B-2 coating (1.5 oz. per sq. ft.).

2.05 REINFORCING STEEL

- a. Steel Reinforcing Bars: Billet steel complying with ASTM A-615, Grade 60.
- b. Deformed Wire: ASTM A-496.
- c. Plain Welded Wire Fabric: ASTM A-185.

2.06 TIES

- a. Provide bars fabricated from not less than 3/8" diameter rod stock, unless otherwise indicated. Ties shall be located 16" o.c. maximum horizontally and vertically unless otherwise noted. Corrugated wall ties are not acceptable.
- b. In exterior wythe of exposed walls, fabricate from steel with hot-dip galvanized coating, ASTM A-153, Class B-2.

2.07 MASONRY CLEANING SOLUTION

- a. As recommended by NCMA- 8-2A.

2.08 STEEL LINTELS

- a. Steel shall be A36 Grade.
- b. Lintels shall bear a minimum of 8" on each side past opening.
- c. Cores beneath and 8" past bearing area shall be grouted solid for at least (2) units below bearing area.

PART 3 EXECUTION

3.01 GENERAL FOR ALL MASONRY

- a. Shoring:
 1. GC shall provide and install and be solely and fully responsible for adequate shoring of all walls during construction.
 2. GC shall conform to this provision without further or specific directions from the Engineer, and all responsibility and all costs for damage, and claims for injury or death because of failure to walls during construction shall be borne by the GC.
- b. Verify all dimensions before installing masonry.
- c. Protect finish surfaces of masonry from staining. Remove any mortar from finish surfaces immediately.

3.02 CONCRETE MASONRY UNIT WORK

- a. General:
 1. Set units plumb, true to line with level courses accurately spaced. Set all block with cells vertical.
 2. Finish joints flush that will not remain exposed. Use concave tooled joints for work that will remain exposed. Tool vertical joints first. All joints shall be approximately 3/8" thick.
 3. Cut and fit units including those required to accommodate work of other sections using masonry saws having carborundum or diamond blade. Dry cut units with saw and then

- thoroughly clean to remove cementitious sawings. Install to fit adjoining work neatly; all with clean, sharp, unchipped edges.
4. Lay all masonry in running bond unless noted otherwise. Match existing coursing and joints at infill or adjacent to existing walls.
 5. Bond or key intersections of walls and partitions neatly. Butt and point vertical joints.
 6. Use no broken units. Avoid use of less-than-half size units also.
 7. Fill solid with grout all spaces around door and window frames or other built-in items.
 8. Where fresh masonry joins partially or totally set masonry, clean exposed surfaces of set masonry and remove loose mortar and foreign material before laying fresh masonry. If necessary to stop a horizontal run of masonry, rack back one-half block length in each course. Tothing is not permitted.
 9. If units are displaced after mortar has stiffened, remove units, clean joints and units of mortar, and re-lay units with fresh mortar.
 10. Provide raked joints for caulking on the exterior face at control joints, ends of slip sills, around window and door frames, and at other locations where caulked joints are indicated. Rake and tool smooth to a uniform depth of 3/4".
 11. Install materials supplied by others which are to be built in as masonry work progresses. Avoid cutting and patching.
 12. Mortar and grout shall only be mixed in mechanical mixer for a minimum period of 5 minutes after all materials are in mixer, with amount of water required to produce desired workability.
 13. Do not wet concrete masonry units.
- b. Mortar:
1. Lay with full mortar coverage on horizontal and vertical face shells and webs.
 2. Retempering:
 - a. Mortar shall be used and placed in final position within 2 hours after initial mixing and shall not be left standing more than 1 hour without remixing; otherwise it shall be discarded. Mortar that has begun to set shall also be discarded.
 - b. Mortar that has stiffened due to evaporation of water within 2 hour period shall be retempered by adding water and remixing thoroughly as frequently as required to restore required consistency.
- c. Joint Reinforcement:
1. Install masonry wall reinforcement at 16" o.c. unless noted otherwise.
 2. Provide additional reinforcement in the 3 courses above and below openings. Extend reinforcement 2 feet beyond jambs.
 3. Continue reinforcing at intersections using prefabricated corners and tees.
 4. Lap reinforcement a minimum of 6" at splices.
 5. Embed reinforcement completely in mortar.
 6. Do not continue reinforcement through expansion joints.
 7. Discontinue 1/2 of reinforcement at control joints.
- d. Reinforced Unit Masonry:
1. General: Install reinforcement to comply with requirements of reference standards.
 2. Lap vertical reinforcement 30-bar diameters at splices.
 3. Lap horizontal reinforcement 24-bar diameters at splices. Where possible, stagger splices.
- e. Lintels and Bond Beams:
1. Install loose lintels of steel where shown. Provide 8" (minimum) bearing at each end.
 2. Bond Beams: For hollow concrete masonry unit walls, use specially formed "U" shaped lintel units with reinforcing bars placed as shown and filled with grout of consistency required to completely fill space between reinforcing bars and masonry units.
- f. Grouting:
1. Comply with low-lift grouting method in NCMA-TEK 3-2 "Grouting for Concrete Masonry Walls".
 2. Place grout in lifts not to exceed 4 feet; puddle in place.
 3. Stop grout 2" from top of block at the end of each lift.

4. Fill cores of blocks solid with grout as shown on drawings.
5. Provide solid bearing for lintels and beams by filling cores with grout for not less than 16" vertically and not less than 24" horizontally.
6. Do not use grout which has begun to set or if more than 2 hours has elapsed since initial mixing.
- g. Thermal Requirements:
 1. Hot Weather Conditions: Upon completion of day's work, protect masonry construction from direct exposure to wind and sun when erected in a temperature greater than 80°F.
 2. Cold Weather Conditions: Comply with NCMA-TEK 3-1.
- h. Protection of Work:
 1. During erection, cover top of walls with waterproof sheeting at end of each day's work. Cover partially completed structures when work is not in progress.
 2. Extend cover a minimum of 24" down both sides and hold cover securely in place.
 3. Do not apply uniform floor or roof loading for at least 12 hours after building masonry walls or columns.
 4. Do not apply concentrated loads for at least 3 days after building masonry walls or columns.
 5. Staining:
 - a. Prevent grout or mortar or soil from staining the face of masonry to be left exposed or painted.
 - b. Remove immediately grout or mortar in contact with such masonry.
 - c. Protect base of walls from rain-splashed mud or mortar splatter by means of coverings spread on ground and over wall surface.
 6. Protect sills, ledges and projections from droppings of mortar.
- i. Repair, Pointing and Cleaning:
 1. Rake and repoint defective joints.
 2. Dry brush masonry surface after mortar has set, at end of each day's work, and after final pointing.
 3. Remove and replace concrete masonry units that are loose, chipped, broken, stained or otherwise damaged if units do not match adjoining units. Install new units to match adjoining units in fresh mortar, pointed to eliminate evidence of replacement.
 4. When pointing, tool all joints required to enlarge any voids or holes, except weep holes, and then completely fill with mortar. Point-up all joints including corners, openings and adjacent construction to provide a neat, uniform appearance, prepared for application of sealants.
 5. Upon completion of work, clean exposed masonry using methods indicated in NCMA-TEK 8-2A.
- j. Tolerances:
 1. Maximum variation from plumb in vertical lines and horizontal and vertical surfaces of walls, 1/4" in 10 feet.
 2. Maximum variation from plumb for exterior corners, expansion joints and other conspicuous lines, 1/4" in any story.

3.03 CLEANING MASONRY

- a. Exterior: After roof work is complete, if any.
- b. Interior: Before installation of other finishes.
- c. Brush and water.

END OF SECTION

PART 1 - GENERAL

1.01 REFERENCES

- a. Except as shown or specified otherwise, the Work of this Section shall meet the requirements of the following:
 - 1. Design, Fabrication, and Erection: "Specification for Structural Steel Buildings, Allowable Stress Design and Plastic Design" adopted by the American Institute of Steel Construction, June 1, 1989 (AISC Specification).
 - a. Design and Fabrication of Cold-Formed Shapes: "Specification for the Design of Cold-Formed Steel Structural Members", by the American Iron and Steel Institute (AISI Specification).
 - 2. Welding: "Structural Welding Code - Steel, AWS D1.1", or "Structural Welding Code - Sheet Steel, AWS D1.3", by the American Welding Society (AWS Codes).

1.04 SUBMITTALS

- a. Shop Drawings: Show application to project. Furnish setting drawings and templates for installation of bolts and anchors in other Work. Indicate shop and field welds by standard AWS welding symbols in accordance with AWS A2.4.
- b. Product Data: Catalog sheets, specifications, and installation instructions for each fabricated item specified, except submit data for fasteners only when directed.

1.05 QUALITY ASSURANCE

- a. Galvanizing: Stamp galvanized items with galvanizer's name, weight of coating, and applicable ASTM number.

1.06 DELIVERY AND STORAGE

- a. Coordinate delivery of items to be built into other construction to avoid delay.
- b. Promptly cover and protect steel items delivered to the Site.

PART 2 - PRODUCTS

2.01 MATERIALS

- a. Steel Shapes, Plates, and Bars: ASTM A 36.
- b. Steel Plates to be Bent or Cold-Formed: ASTM A 283, Grade C.
- c. Hot-Rolled Carbon Steel Sheet and Strip: ASTM A 569, pickled and oiled.
- d. Cold-Rolled Carbon Steel Sheet: ASTM A 366, oiled.
- e. Galvanized Steel Sheet: ASTM A 526, with G90 hot-dip process zinc coating complying with ASTM A 525.
- f. Cast Iron Castings: ASTM A 48, gray iron castings, Class 30.
- g. Malleable Iron Castings: ASTM A 47, grade as selected by fabricator.
- h. Steel Castings: ASTM A 27, grade and class as required by use of item.
- i. Steel Pipe: ASTM A 53, type as selected, Grade A; black finish unless galvanizing is required; standard weight (Schedule 40), unless otherwise shown or specified.
- j. Anchors: Except where shown or specified, select anchors of type, size, style, grade, and class required for secure installation of metal fabrications. For exterior use anchors shall be galvanized or of corrosive-resistant materials.
 - 1. Threaded-Type Concrete Inserts: Galvanized ferrous casting, internally threaded to receive 3/4 inch diameter machine bolt; either malleable iron or cast steel.
 - 2. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in

concrete, as determined by testing per ASTM E 488, conducted by a qualified independent test agency.

- a. Carbon Steel: Zinc-Plated; ASTM B 633, Class Fe/Zn 5.
- b. Stainless Steel: Bolts, Alloy Group 1 or 2; ASTM F593, Nuts; ASTM F 594.
- h. Fasteners: Except where shown or specified, select fasteners of type, size, style, grade, and class required for secure installation of metal fabrications. For exterior use and where built into exterior walls, fasteners shall be galvanized.
 - 1. Standard Bolts and Nuts: ASTM A 307, Grade A, regular hexagon head.
 - 2. Stainless Steel Fasteners: ASTM A 666; Type 302/304 for interior Work; Type 316 for exterior Work; Phillips flathead (countersunk) screws and bolts for exposed Work unless otherwise specified.
 - 3. Machine Bolts: ASME B18.5 or ASME B18.9, Type, Class, and Form as required.
 - 4. Machine Screws: ASME B18.6.3.
 - 5. Plain Washers: Round, ASME B18.22.1.
- i. Shop Paint (General): Universal shop primer; fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
 - 1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- j. Shop Paint for Galvanized Steel: Epoxy zinc-rich primer; complying with MPI#20 and compatible with topcoat.
- k. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

2.06 STEEL PIPE RAILINGS

- a. Fabricate railings of 1-1/2 inch (nominal) diameter steel pipe, unless otherwise shown.
- b. Railings: Unless otherwise shown, railings shall consist of top rail and intermediate rails, with posts spaced not more than 4 feet oc. Close ends of rails which do not terminate with a flange or continuous return.
 - 1. Space rails so that a sphere 4 inches in diameter cannot pass through the openings between the rails.
 - 2. Join posts, rails, and corners by one of the following methods:
 - a. Flush-type steel railing fittings, continuously welded and ground smooth, with railing splice locks secured with 3/8 inch hexagonal-recessed-head setscrews.
 - b. Coped and welded joints made by fitting post to top rail and intermediate rail to post, mitering corners, continuously groove welding joints, and grinding joints smooth. Butt railing splices, and reinforce by a tight-fitting interior pipe sleeve not less than 6 inches long secured in place.
 - 3. Railings may be bent at corners instead of joining, provided the bends are uniformly formed in jigs, with cylindrical cross-section of pipe maintained throughout the entire bend.
 - 4. Unless otherwise shown, fabricate railings and accessories as necessary to secure posts and rail ends to construction as follows:
 - a. Anchor posts in concrete by means of post sleeves preset into the concrete.
 - b. Anchor posts to steel with steel flanges, angle type or floor type as required by conditions, welded to posts and bolted to the steel supporting members.
 - c. Anchor rail ends into concrete and solid masonry with round steel flanges welded to rail ends and anchored into the wall construction with expansion anchors.
 - d. Anchor rail ends to steel with oval or round steel flanges welded to rail ends and bolted or welded to the steel supporting members.
 - 5. Post Sleeves: Galvanized steel pipe not less than 6 inches long, and having an inside diameter not less than 1/2 inch greater than the outside diameter of the pipe post.

Sleeve shall have a plate closure, sized to extend not less than 1 inch beyond the outside diameter of the sleeve, secured to the bottom of the sleeve.

- a. Cover Flange: Round steel flange, sized to closely fit post and cover the sleeve.
- 6. Fabricate removable railing sections as indicated on the Drawings.
- c. Galvanize all exterior railings including pipe, flanges, fittings, brackets, fasteners, and other ferrous metal components.

2.08 FABRICATION

- a. Use materials of size and thickness indicated. If not indicated, use material of required size and thickness to produce adequate strength and durability for the intended use of the finished product. Furnish suitable, compatible anchors and fasteners to support assembly.
- b. Fabricate items to be exposed to view of material entirely free of surface blemish, including pitting, seam marks, roller marks, rolled trade names, and roughness. Remove surface blemishes by grinding or by welding and grinding prior to cleaning, treating, and finishing. Ease exposed edges to a radius of approximately 1/32 inch unless otherwise shown.
- c. Joints: Fabricate accurately for close fit. Weld exposed joints continuously unless otherwise indicated or approved. Dress exposed welds flush and smooth.
- d. Connections: Form exposed connections with flush, smooth, hairline joints. Use concealed fasteners wherever possible. Use Phillips flathead (countersunk) bolts or screws for exposed fasteners, unless otherwise shown or specified.
 - 1. Furnish flat washer under connections requiring raised bolt heads.
- e. Punch, reinforce, drill, and tap metal Work as required to receive hardware and other appurtenant items.
- f. Galvanizing:
 - 1. In addition to specific items specified or noted to be galvanized, galvanize items attached to, embedded in, or supporting exterior masonry (including interior wythe of exterior masonry walls) and concrete Work.
 - 2. Unless otherwise specified or noted, items indicated to be galvanized shall receive a zinc coating by the hot-dip process, after fabrication, complying with the following:
 - a. ASTM A 123 for plain and fabricated material, and assembled products.
 - b. ASTM A 153 for iron and steel hardware.
- g. Shop Painting:
 - 1. Cleaning Steel: Thoroughly clean all steel surfaces. Remove oil, grease, and similar contaminants in accordance with SSPC SP-1 "Solvent Cleaning". Remove loose mill scale, loose rust, weld slag and spatter, and other detrimental material in accordance with SSPC SP-2 "Hand Tool Cleaning", SSPC SP-3 "Power Tool Cleaning", or SSPC SP-7 "Brush-Off Blast Cleaning".
 - 2. Galvanized Items:
 - a. Galvanized items which are to be finish painted under Section 099101 shall be rinsed in hot alkali or in an acid solution and then in clear water.
 - b. Welded and abraded areas of galvanized surfaces shall be wire brushed and repaired with a coating of cold galvanizing compound.
 - 3. Apply one coat of shop paint to all steel surfaces except as follows:
 - a. Do not shop paint steel surfaces to be field welded and steel to be encased in cast-in-place concrete.
 - b. Apply 2 coats of shop paint, before assembly, to steel surfaces inaccessible after assembly or erection, except surfaces in contact.
 - c. Do not paint galvanized items which are not to be finished painted.
 - 4. Apply paint and compound on dry surfaces in accordance with the manufacturer's printed instructions, and to the following minimum thickness per coat:
 - a. Shop Paint (General): 4.0 mils wet film.
 - b. Shop Paint for Galvanized Steel: 3.0 mils wet film.

- c. Cold Galvanizing Compound: 2.0 mils dry film.

PART 3 EXECUTION

3.01 PREPARATION

- a. Temporarily brace and secure items which are to be built into concrete, masonry, or similar construction.
- b. Isolate non-ferrous metal surfaces to be permanently fastened in contact with ferrous metal surfaces, concrete, or masonry by coating non-ferrous metal surface with bituminous mastic, prior to installation.

3.02 INSTALLATION

- a. Fit and set fabricated metal Work accurately in location, alignment, and elevation. Securely fasten in place. Cut off exposed threaded portion of bolts flush with nut.
- b. Set loose items on cleaned bearing surfaces, using wedges or other adjustments as required. Solidly pack open spaces with bedding mortar or grout.
- c. Attached Work: Fasten to concrete and solid masonry with expansion anchors and to hollow masonry with toggle bolts in cells, unless otherwise indicated. Drill holes for fasteners to exact required size using power tools.
- d. Railings: Adjust railings prior to securing in place to insure alignment and proper matching at joints. Plumb posts in each direction. Secure posts and rail ends to construction as follows:
 - 1. Anchor posts in concrete with post sleeves preset into the concrete. After the posts have been inserted into the sleeves, fill the annular space between post and sleeve solid with molten lead or an exterior quick-setting hydraulic cement. Cover anchorage joint with a cover flange.
 - 2. Anchor posts to steel with steel flanges, angle type or floor type as required. Weld flanges to posts, and bolt to the steel supporting members.
 - 3. Anchor rail ends to concrete and masonry with round steel flanges. Weld flanges to rail ends, and anchor into the wall construction with expansion anchors.
 - 4. Anchor rail ends to steel with steel oval or round flanges. Weld flanges to rail ends, and weld or bolt to the steel supporting members.

END OF SECTION 05500

PART 1 - GENERAL

1.01 SUMMARY

- a. Includes But Not Limited To:
 - 1. Furnish and apply bituminous dampproofing to exterior foundation walls and top of footings as described in Contract Documents.

1.02 DELIVERY, STORAGE, AND HANDLING

- a. Maintain dampproofing at 40 deg F or above before application.

1.03 PROJECT CONDITIONS

- a. Project Environmental Requirements: Do not apply when ambient temperature is below 40 deg F, surface temperature is below 33 deg F, or when rain is expected before applied dampproofing will dry.

1.04 SCHEDULING

- a. Do not backfill against bituminous dampproofing for 24 hours after application.

PART - 2 PRODUCTS

2.01 MATERIALS

- a. Type Two Acceptable Products:
 - 1. Ecomul-11 by Epro Waterproofing Systems, Derby, KS www.eproserv.com.
 - 2. Karnak 100 by Karnak Chemical Corp, Clark, NJ www.karnakcorp.com.
 - 3. Sealmastic Asphalt Emulsion Dampproofing Type I by W R Meadows, Hampshire, IL www.wrmeadows.com.
 - 4. Equal as approved by Engineer before application.

PART 3 - EXECUTION

3.01 APPLICATION

- a. Spray Application: Spray to a thickness of 10 mils minimum.
- b. Brush / Roller Application: Apply two coats of dampproofing at rate recommended by Manufacturer. Apply coats in cross hatch method so coats are applied perpendicular to each other. Before applying second coat allow first coat to dry in accordance with Manufacturer's recommendations.
- c. Apply dampproofing to cover area from 6 inches below finish grade line down to and including top of footings.

END OF SECTION 07100

PART 1 - GENERAL

1.01 SUMMARY

- a. This Section includes standard hollow-metal steel doors, frames, and hardware.

1.02 SUBMITTALS

- a. Product Data: Include construction details, material descriptions, core descriptions, certified thermal resistance ratings, label compliance, and finishes for each type of steel door, frame and hardware specified.
- b. Shop Drawings: Provide a complete schedule of standard steel doors, frames and hardware for Owner approval.

1.03 DELIVERY, STORAGE, AND HANDLING

- a. Deliver doors and frames palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
- b. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- c. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

1.04 COORDINATION

- a. Templates: Distribute door hardware templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- b. Existing Openings: Where new hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide for proper operation.

1.05 WARRANTY

- a. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door and hardware that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of operators and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
 - 2. Warranty Period: Three years from date of Substantial Completion

1.06 MAINTENANCE SERVICE

- a. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.01 DOOR/FRAME MANUFACTURERS

- a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Ceco Door Products; an ASSA ABLOY Group Company.
 - 2. Republic Builders Products Company.
 - 3. Steelcraft; an Ingersoll-Rand Company.
 - 4. Approved Equal.

2.02 MATERIALS

- a. Cold-Rolled Steel Sheet: ASTM A 1008/ A 1008M, Commercial Steel {CS}, Type B; suitable for exposed applications.
- b. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel {CS}, Type B; free of scale, pitting, or surface defects; pickled and oiled.
- c. Metallic-Coated Steel Sheet: ASTM A 653/ A 653M, Commercial Steel (CS), Type B; with minimum A40 (ZF180) zinc-iron-alloy (galvannealed) coating designation.
- d. Electrolytic Zinc-Coated Steel Sheet: ASTM A 591/ A 591 M, Commercial Steel (CS), Class B coating; mill phosphatized.
- e. Inserts, Bolts, and Fasteners: Provide items to be built into exterior walls, hot-dip galvanized according to ASTM A 153/ A 153M.
- f. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching standard steel door frames of type indicated.
- g. Grout: Comply with Unit Masonry Specification Section.
- h. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 122lb/cu. ft. density; with maximum flame-spread and smoke developed indexes of 25 and 50 respectively; passing ASTM E 136 for combustion characteristics.
- i. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil (OA-mm) dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.03 STANDARD STEEL DOORS

- a. General: Provide doors of similar design and minimum thickness to match existing; fabricated with smooth surfaces, without visible joints or seams on exposed faces. Comply with ANSI A250.8.
 - 1. Core Construction: Manufacturer's standard vertical steel-stiffener core and manufacturer's standard polystyrene, or polyurethane insulation.
 - a. Steel-Stiffened Core: 0.026-inch- thick, steel vertical stiffeners extending full-door height with vertical webs spaced not more than 6 inches apart, spot welded to face sheets a maximum of 5 inches o.c. Spaces filled between stiffeners with manufacturer's standard thermal insulation.
 - 2. Vertical Edges for Single-Acting Doors: Square edge unless beveled edge is indicated.
 - 3. Top and Bottom Edges: Closed with flush or inverted 0.042-inch- thick end closures or channels of same material as face sheets.
- b. Exterior Doors: Face sheets fabricated from metallic-coated steel sheet.
- c. Provide doors complying with requirements indicated below by referencing ANSI A250.8 for level and model and ANSI A250.4 for physical-endurance level:
 - 1. Level 3 and Physical Performance Level A (Extra Heavy Duty), Model 2 (Seamless).

2.04 STANDARD STEEL FRAMES

- a. General: Comply with ANSI A250.8.
- b. Exterior Frames: Fabricated from metallic-coated steel sheet.
 - 1. Fabricate frames with mitered or coped and welded face corners and seamless face joints.

- 2. Frames for Level 3 Steel Doors: 0.067-inch- thick steel sheet, unless otherwise indicated.
- c. Supports and Anchors: Fabricated from electrolytic zinc-coated or metallic coated steel sheet.
- d. Jamb Anchors: Masonry, stud-wall, compression, or post installed expansion type; not less than 0.042 inch thick.
- e. Floor Anchors: Formed from same material as frames, not less than 0.042 inch thick.

2.05 STOPS AND MOLDINGS

- a. Fixed Frame Moldings: Formed integral with standard steel frames, minimum 5/8 inch high, unless otherwise indicated.

2.06 HINGES, GENERAL

- a. Quantity: Provide the following, unless otherwise indicated:
 - 1. Three Hinges: For doors with heights 61 to 90 inches.
- b. Hinge Weight: Unless otherwise indicated, provide the following:
 - 1. Entrance Doors: Heavy-weight hinges.
- c. Hinge Base Metal: Unless otherwise indicated, provide the following:
 - 1. Exterior Hinges: Stainless steel, with stainless-steel pin.
- d. Hinge Options: Where indicated in door hardware sets or on Drawings:
 - 1. Nonremovable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for outswinging exterior doors.
 - 2. Corners: Square.
- e. Fasteners: Comply with the following:
 - 1. Screws: Phillips flat-head; machine screws (drilled and tapped holes) for metal doors and frames. Finish screw heads to match surface of hinges.

2.07 HINGES

- a. Butts and Hinges: BHMA A 156.1.
- b. Template Hinge Dimensions: BHMA A 156.7.
- c. Available Manufacturers:
 - 1. Hager Companies (HAG).
 - 2. McKinney Products Company; an ASSA ABLOY Group company (MCK).
 - 3. Stanley Commercial Hardware; Div. of The Stanley Works (STH).
 - 4. Approved Equal.

2.08 LOCKS GENERAL

- a. Lock Trim:
 - 1. Levers: Cast.
 - 2. Escutcheons (Roses): Wrought.
 - 3. Dummy Trim: Match lever lock trim and escutcheons.
 - 4. Lockset Designs: Schlage; liD" Series, Rhodes.
- b. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
 - 1. Bored Locks: Minimum 1/2-inch latchbolt throw.
 - 2. Mortise Locks: Minimum 3/4-inch latchbolt throw.
- c. Backset: 2-3/4 inches, unless otherwise indicated.
- d. Strikes: Manufacturer's standard strike with strike box for each latchbolt or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, and as follows:
 - 1. Strikes for Bored Locks: BHMA A 156.2.
 - 2. Strikes for Mortise Locks: BHMA A 156.13.

2.09 KEYING

- a. Keying System: As provided by Owner.

2.10 THRESHOLDS

- a. Standard: BHMA A 156.21.
- b. Thresholds for Means of Egress Doors: Comply with NFPA 101. Maximum 1/2 inch (13 mm) high.
- c. Available Manufacturers:
 - 1. Hager Companies (HAG).
 - 2. Pemko Manufacturing Co. (PEM).
 - 3. Reese Enterprises (RE).
 - 4. Approved Equal.

2.11 DOOR GASKETING

- a. Standard: BHMA A 156.22.
- b. General: Provide continuous weather-strip gasketing on exterior doors. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.
 - 1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
 - 2. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
- c. Air Leakage: Not to exceed 0.50 cfm per foot (0.00011 4 cu. m/s per m) of crack length for gasketing other than for smoke control, as tested according to ASTM E 283.
- d. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- e. Gasketing Materials: ASTM D 2000 and AAMA 701/702.
- f. Available Manufacturers:
 - 1. Hager Companies (HAG).
 - 2. Pemko Manufacturing Co. (PEM).
 - 3. Reese Enterprises (RE).
 - 4. Approved Equal.

2.12 DOOR/FRAME FABRICATION

- a. General: Fabricate standard steel doors and frames to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- b. Standard Steel Doors:
 - 1. Exterior Doors: Provide weep-hole openings in bottom of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
- c. Standard Steel Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
 - 2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners, unless otherwise indicated.
 - 3. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
 - 4. Jamb Anchors: locate anchors not more than 18 inches (457 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm)o.c.
 - 5. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers. Provide plastic plugs to keep holes clear during construction.
- d. Hardware Preparation: Factory prepare standard steel doors and frames to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping, according to the Door Hardware Schedule and templates furnished as specified elsewhere in this Section.
 - 1. Comply with applicable requirements in ANSI A250.6 and ANSI/DHI A 115 Series specifications

for door and frame preparation for hardware. locate hardware as indicated on Shop Drawings or, if not indicated, according to ANSI A250.8.

2.13 DOOR/FRAME FINISHES

- a. Steel Finish: Factory priming for field-painted finish.
 - 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate free primer complying with ANSI A250.1 0 acceptance criteria.

2.14 HARDWARE FABRICATION

- a. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rated labels and as otherwise approved by Engineer.
 - 1. Manufacturer's identification is permitted on rim of lock cylinders only.
- b. Base Metals: Produce door hardware units of base metal, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A 156.18. Do not furnish manufacturer's standard materials or forming methods if different from specified standard.
- c. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
 - 1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
 - 2. Spacers or Sex Bolts: For through bolting of hollow-metal doors.

2.15 HARDWARE FINISHES

- a. Standard: BHMA A 156.18, as indicated in door hardware sets.
- b. Protect mechanical finishes on exposed surfaces from damage by applying a sfrippable, temporary protective covering before shipping.
- c. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.01 INSTALLATION

- a. Remove welded-in shipping spreaders installed at factory.
- b. Provide doors and frames of sizes and minimal thicknesses to match existing. Install standard steel doors and frames plumb, rigid, properly aligned, and securely fastened in place; comply with manufacturer's written instructions.
- c. Standard Steel Frames: Install standard steel frames for doors of size and profile to match existing.
 - 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. Apply bituminous coating to backs of frames that are filled with mortar and grout, containing antifreezing agents, and where frame abuts dissimilar metals subject to galvanic or corrosive action.
 - 2. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between

- frames and masonry with mortar as specified in Unit Masonry Specification Section.
- d. Standard Steel Doors: Fit hollow-metal doors accurately in frames. Shim as necessary.
 - e. Mounting Heights: Mount door hardware units at heights indicated as follows unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - f. Install each door hardware item to comply with manufacturer's written instructions.
 - g. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - h. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - i. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
 - j. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
 - k. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including standard steel doors or frames that are warped, bowed, or otherwise unacceptable.
 - l. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying primer.

END OF SECTION 08100

PART 1 GENERAL

1.01 CORRELATION OF DOCUMENTS

- a. All work under this title, on drawings or specified, is subject to the Contract Documents for the entire project and the contractor for this portion of the work is required to refer especially thereto.
- b. Drawings and specifications are complementary and must be so interpreted to determine the full scope of work under this heading. Wherever any material, article, operation or method is either specified or shown on the drawings, this contractor is required to provide each item and perform each prescribed operation according to the designated quality, qualification or condition, furnishing all necessary labor, equipment and incidentals.

1.02 SCOPE

Specifically included, without limiting the generality of specifications and drawings, are:

- a. Furnish and Install:
 1. Single hung windows.
- b. Furnish and install all aluminum panning, trim, shapes, as shown on drawings or required for a complete installation.
- c. Remove existing window systems where indicated

1.03 SUBMITTALS

- a. Manufacturer's specifications for each window type and related products.
- b. Shop drawings for each window type, showing sizes, locations and details. Shop drawings shall show full size details of the windows and surrounding building construction of all existing conditions.
- c. Warranty.

1.04 WARRANTY

- a. Windows shall be warranted against defects in material or workmanship under normal use for a period of TEN (10) YEARS from the date of installation.
- b. Insulating glass shall be warranted against visual obstruction resulting from film formation or moisture collection between the interior glass surfaces (excluding glass breakage) for period of TEN (10) YEARS from the date of manufacture.

PART 2 PRODUCTS

2.01 GENERAL

- a. All windows and related trim shall be provided from a single manufacturer.

2.02 SINGLE HUNG WINDOWS

- a. Manufacturer: Litex Single Hung Aluminum Windows L701T; or equal.
- a. System Description: Units shall be single hung aluminum windows conforming to AW-65 and SH-HC65 specifications in ANSI/AAMA 101-97 and ANSI/AAMA Publication GS-001. Additionally, the windows shall exceed SH-HC65 requirements by meeting the following requirements.
- c. Performance Requirements:
 1. Air Infiltration:
 - a. When tested in accordance with ASTM E283-91 on a test size of 5'-6" x 10'-0", the air infiltration rate shall not exceed .09 cfm/ft. of sash perimeter under a static pressure difference of 1.57 PSF. Additionally at 6.24 PSF the air infiltration shall not exceed .15 cfm/ft.
 2. Water Resistance:

- a. When tested in accordance with ASTM E331-86 on a test size of 5'-6" x 10'-0", there shall be no leakage under a static pressure of 10.0 PSF.
3. Uniform Load Structural Test:
 - a. With window sash closed and locked, the unit shall be tested in accordance with ASTM E330-90 on a test size of 5'-6" x 10'-0", at a static pressure difference of 100.00 PSF with first the exterior (positive) pressure applied, and then the interior (negative) pressure applied.
 - b. At conclusion of test, there shall be no glass breakage, permanent damage to fasteners, hardware parts, or actuating mechanisms, nor any other damage that would cause the window to be inoperable. Permanent deformation of any frame or sash member shall not exceed 0.4% of its span.
4. Condensation Resistance Factor (CRF):
 - a. When tested in accordance with AAMA 1503.1-88 on a test size of 4'-0" x 6'-0", the CRF shall not be less than 56.
5. Thermal Transmittance (U Value):
 - a. When tested in accordance with AAMA 1503.1-88 on a test size of 4'-0" x 6'-0", the thermal transmittance due to conduction (Uc) shall not exceed 0.48 BTU/HR.FT.².F.
- d. Quality Assurance:
 1. Valid test reports from an AAMA-accredited laboratory shall be provided certifying the performance for all items listed above.
 2. All references to aluminum wall thickness shall be nominal dimensions to which standard tolerances in AAMA "Aluminum Standards & Data" (1988) shall apply.
- e. Materials:
 1. Aluminum Extrusions: All frame and sash sections shall be extruded aluminum shapes produced from commercial quality 6063-T5 alloy and shall be free from defects impairing strength and/or durability.
 1. The frame depth shall be a nominal 3-3/4" and shall have a nominal .062" wall thickness. The frame sill shall have a nominal wall thickness of .093".
 - a. No extruded plastics shall be allowed in frame or sash members.
 3. Hardware:
 - a. The bottom sash shall operate on four (4) BSI balance systems or two (2) Caldwell Ultra-Lift window balances of appropriate size and capacity to hold the sash stationary at any open position. Balances shall be easily accessible and replaceable in the field.
 - b. Bottom sash to have two (2) automatic two point latches and keepers of cast aluminum, which engage to the sill when the bottom sash is closed. All locks shall be easily serviceable in the field without disassembling the sash.
 - c. For rescue windows, latch device shall not be higher than 54" above finish floor.
 4. Weatherstrip:
 - a. All sashes shall be double weatherstripped using silicone-treated pile with a polypropylene center fin conforming to AAMA 701.2.
 - b. All weatherstripping shall be held in extruded ports and secured to prevent loss when operating sash.
 4. Screens: Half screens shall consist of 18 x 16 fiberglass mesh secured by vinyl spline to a nominal 5/16" x 1-1/4" x .050" extruded tubular aluminum frame.
 6. Glass and Glazing:
 - a. Glass shall be set in glazing tape 1/8" thick at the exterior glazing leg and held in place with interior snap in stops.
 - b. All glass shall be set on 1/4" setting blocks.
 - c. Gasket type glazing requiring sash disassembly to reglaze is not acceptable.
 - d. All glass glazed into fixed framing shall receive a perimeter cap bead of silicone sealant between the glazing leg and glass surface.
 - e. Fabrication:

1. Construction:
 - a. Frame and sash members shall be extruded as a single section. The frame members shall have two (2) channels and the sash members shall have one (1) channel filled with polyurethane which shall be a rigid structural element. Connecting aluminum "bridge" of at least .250" wide shall be removed to establish interior and exterior sections separated by the polyurethane to prevent thermal transmittance. Windows having a single thermal break in the frame are not acceptable.
 - b. The thermal barrier shall be a structural and integral part of the aluminum extrusion, having strength exceeding the basic shapes. The thermal barrier shall be permanently bonded to the aluminum extrusion and there shall be no bridging of the thermal barrier at any corner or connection or by anchorage.
 - c. All frame and sash member shall be continuous extrusions. The window head shall be mitre cut and fastened to jambs with an 1/8" thick corner keys and 4 cadmium plated or stainless steel screws into integral screw ports. Frame jambs shall be angle cut to match the sill slope and fastened with 4 cadmium plated or stainless steel screws into integral screw ports.
 - d. All horizontal sash rails shall be tubular construction containing a hollow section of not less than 1 square inch. Sash corners shall be telescoped for maximum strength and fastened with stainless steel screws into integral screw ports.
 - e. The frame sill shall slope 10° to the exterior and contain integral offset weep holes that allow gravity water drainage and resistance to wind driven water and/or air.
 - f. Each operating sash shall be removable from interior for cleaning by raising the sash so that the sash balances engage retractable "take-out clips". After the balances have been engaged, the sash can be easily moved to the left side of the window frame which allows the right side of the sash to swing out into the interior for removal.
 - g. All frame joints shall be hairline and be factory sealed with a sealant conforming to AAMA 803.3-85.
2. Mullions or Other Structural Members:
 - a. When units are joined by independent mullions, the resulting member shall be capable of withstanding the design pressure. Evidence of compliance may be by mathematical calculations.

2.03 ALUMINUM PANNING AND TRIM

- a. Aluminum window manufacturer shall provide all aluminum panning, trim, and special shapes, at window heads, jambs, sills and mullions, as shown on the drawings or required for a complete installation.
- b. Extruded aluminum with 0.078" nominal wall thickness.
- c. Provide all components necessary for a complete installation.
- d. Provide receptors for jambs and head.

2.04 ALUMINUM WINDOW AND FRAMING SYSTEM FINISH

- a. All exposed surfaces of aluminum window frames, sash, panning, sills, mullion covers and trim shall have the same finish.
- b. The exposed surfaces shall not have blemishes, scratches, or tool marks.
- c. Finish: Anodized bronze. Color as selected by Owner.

2.05 FASTENERS

- a. Provide all necessary anchors, clips, shims and fasteners, to secure windows in the openings.
- b. Fasteners shall be stainless steel.

PART 3 EXECUTION

3.01 PREPARATION

- a. Existing windows shall not be removed until new windows are delivered and ready for immediate installation. Openings shall not be left uncovered at the end of the work day.
- b. Window openings shall be verified by the contractor, to be within allowable tolerances, plumb, level, clean, providing a solid anchoring surface, and in accordance with the shop drawings. Unsatisfactory conditions shall be corrected prior to installation.

3.02 INSTALLATION

- a. Window Installation:
 1. Windows shall be erected by skilled craftsmen in prepared openings in accordance with manufacturer recommendations and shop drawings. Frames shall be securely supported, fastened and set plumb, square and level without twist or bow.
 2. Set receptor of subframe plumb, square and level with out twist or bow.
 3. Fiberglass insulation shall be compressed between new window frame and wall construction, or between frame and blocking as applicable.
 4. Aluminum shall be insulated from direct contact with steel, masonry, concrete, or non-compatible materials by bituminous paint, zinc chromate primer or other suitable insulating materials.
 5. Exterior joints between window and surrounding construction shall be sealed per specifications and shop drawings.
 6. Joints and surfaces to receive sealants shall be dry, clean and free from loose material, efflorescence or mortar leaching. Sealants shall not be applied when the temperature is below sealant manufacturer recommendation.
 7. Aluminum panning and trim shall be cut to fit, and shall be size and shape shown on shop drawings.
 8. All fasteners shall be concealed unless otherwise allowed.

3.03 ADJUSTING AND CLEANING

- a. Frames and balances shall be adjusted, if necessary, after installation for smooth and watertight operations.
- b. Remove all labels from glass. Clean all glass surfaces.
- c. Clean all window tracks. Remove all debris such as metal pieces from drilling holes, etc.

END OF SECTION 08500

PART 1 - GENERAL

1.01 SUMMARY

- a. Includes But Not Limited To:
 - 1. General electrical system requirements and procedures.
 - 2. Temporary relocation of active electrical fixtures and circuits for other work.
 - 3. Coordination with Building Manager and removal of inactive electrical fixtures and circuits no longer in use.
 - 4. Replacement of temporarily relocated active electrical fixtures and circuits following completion of all other work.

1.02 QUALITY ASSURANCE

- a. Requirements of Regulatory Agencies:
 - 1. NEC and local ordinances and regulations shall govern unless more stringent requirements are specified.
 - 1. Material and equipment provided shall meet standards of NEMA or UL, or ULC, CSA, or EEMAC and bear their label wherever standards have been established and label service is available.

PART 2 - PRODUCTS: Not Used

PART 3 - EXECUTION

3.01 EXAMINATION

- a. All relocations, reconnections, and removals are not necessarily indicated on Drawings. All such work shall be included without additional cost to Owner.
- b. Coordinate with Building Manager in determining which electrical fixtures and circuits are no longer active and should be removed.

3.02 FIELD QUALITY CONTROL

- a. Ensure that all temporarily relocated, as well as all remaining (i.e., not removed) electrical fixtures and circuits are fully active at completion of project work.

END OF SECTION 16000