BID PACKAGE

PART IV

SPECIFICATIONS

DMH Project#2019-007
Passenger Elevator Upgrades
HC Solomon Mental Health Center
Lowell, Massachusetts 01854

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF HUMAN SERVICES
DEPARTMENT OF MENTAL HEALTH

S P E C I F I C A T I O N S

FOR

ELEVATOR UPGRADES
H. C. SOLOMON MENTAL HEALTH CENTER

AT

397 VARNUM AVENUE
LOWELL, MASSACHUSETTS

PROJECT 2019-007

DEPARTMENT OF MENTAL HEALTH
OFFICE OF ENGINEERING AND FACILITIES MANAGEMENT
167 LYMAN STREET
WESTBOROUGH, MA 01581

PREPARED BY: FRED BERGSTROM

REVIEWED BY: JOHN O'DONNELL
BRIAN KELLEY

DATE: AUGUST 29, 2018

TABLE OF CONTENTS

SECTION 011000
SUMMARY OF THE WORK

PART 1 – GENERAL

1.1 CONTRACT REFERENCES

A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within Division 1 – GENERAL REQUIREMENTS that are hereby made a part of this Section of the Specifications.

B. Equality of material, article, assembly or system other than those named or described in this Section shall be determined in accordance with the provisions of the CONTRACT and GENERAL CONDITIONS.

1.2 DEFINITIONS

A. The following terms shall be applicable to these Specifications:

1. **DMH Project Manager**: Refers to Fred Bergstrom, Massachusetts Department of Mental Health, Engineering and Facilities Management, 167 Lyman Street, Westborough, MA 01581. (508) 616-2245.
2. **DMH Site Director**: Refers to Eva Toscano, Massachusetts Department of Mental Health, 397 Varnum Avenue, Lowell, MA 01854. (978) 322-5059.
3. **DMH Facility Manager**: Refers to Brian Kelley, Massachusetts Department of Mental Health, 397 Varnum Avenue, Lowell, MA 01854. (978) 322-5076.
4. **Fire Alarm Company**: Refers to B.E.F., PO Box 223, Chelmsford, MA 01824. (978) 251-1284.
5. **Emergency Generator Company**: Refers to FM Generator, 35 Pequit Street, Canton, MA 02021. (781) 828-9926.
6. **Contractor**: Refers to the Contractor who has been awarded the overall contract for the work outlined by the Contract Documents.
7. **Subcontractor**: Refers to any contractor who is working under the direct supervision of the Contractor including but not limited to: electrician, carpenter, painter, and trucking/transport companies.
8. **Site**: Refers to H.C. Solomon Mental Health Center, 397 Varnum Avenue, Lowell, MA 01854.

B. The terms are provided to facilitate communication but do not supersede the legal definitions provided in the Contract.

1.3 WORK UNDER THIS CONTRACT

A. The work described under this Contract is for the upgrades to the passenger elevator located at 391 Varnum Avenue, Lowell, MA. The installation, modernization, replacement and refurbishment shall be in conformity with the American Standard Safety Code for Elevators, and Escalators (ANSI/ASME A17.1-Latest Edition) and the Commonwealth of Massachusetts Board of Elevator Regulations 524 CMR, including modifications; and to addressing *Americans with Disabilities Act* (ADA) requirements associated with the passenger elevator. The work also includes providing preventative maintenance services during the Contract period and for one year after substantial completion of the project for the passenger elevator and the freight elevator.

B. Scope of Work - The general scope of work under the bid includes but is not limited to the following:

1. Application of, paying for, and securing any and all permits required from local, state and federal agencies, and other authorities having jurisdiction over construction on the Site, including submitting, revising, and resubmitting all required plans, permits, and notifications.
2. Preparation and submission of project work plan and schedules. The Plan shall include all requirements necessary to keep all facilities open at all times for safe public access and use.
3. Mobilization to the Site including but not limited to establishment of the Contractor's space within the Building.
4. Establish work area perimeter and dust control measures.
5. Perform required selective demolition, including but not limited to, removal of main controller, floor landing system, and power door operator.
6. Salvage all parts removed from the existing elevator and move to a DMH-designated on-site location for storage and inspection by DMH. Non-salvageable materials to be disposed by the Contractor under the base contract.
7. Retrofit the elevator controller, landing system, necessary rewiring, power door operator, elevator landing door panels and refinish entrance frames.
8. Replace existing flooring with new rubber floor.
9. Provide and install specified *Americans with Disabilities Act* (ADA) signage as specified herein.
10. Request elevator inspection and address any deficiencies identified by the inspector such that a certification is provided.
11. Provide full preventive maintenance program for the passenger and freight elevator during the contract period and extending one year from substantial completion of the work for both elevators.

1.4 CONTRACT INTENT

A. Intent of these specifications is to cover modernization, rehabilitation work, and warranty and maintenance service complete and operable in every respect as well as standby and access for other contractor's completion of their work in proximity to the work specified under this Contract all related work. It is not intended to give every detail in specifications. DMH and DMH's Project Manager are not responsible for absence of wiring diagrams of existing equipment or any detail Contractor may require. Furnish all material and equipment usually furnished with such system and/or needed to make a complete and safe operating installation, whether specifically mentioned or not, omitting only such parts as are specific exceptions from the specifications.

B. The elevator control equipment for all elevators will be non-proprietary design and contain on board diagnostic capabilities required for the ease of complete maintenance of all aspects of the control, dispatch systems and solid-state motor drive units. The diagnostic system shall be an integral part of the controller and provide user-friendly interaction between the elevator technician and the controls.

1.5 EXISTING CONDITIONS

A. The project site is a two-story structure with a basement. The building was constructed in 1976 and the elevators are original to the Building. The elevators have current certificates. The Building is partially occupied, but does 24-hour seven days per week occupancy.

B. Data on the passenger elevator is as follows:

1.	Elevator :	163-P-393
2.	Elevator Manufacturer:	Otis
3.	Capacity:	4,000 lbs.
4.	Speed:	75 FPM
5.	Floors Served:	3 in line
6.	Classification:	Passenger
7.	Type:	Basement Traction

C. Data on the freight elevator is as follows:

1.	Elevator:	160-F-394
2.	Elevator Manufacturer:	Otis
3.	Capacity:	4,000 lbs.
4.	Speed:	75 FPM
5.	Floors Served:	2 in line
6.	Classification:	Freight
7.	Type:	Basement Traction

1.6 EXAMINATION OF SITE AND DOCUMENTS

A. A mandatory pre-bid conference will be held at the job site on the date and at the time indicated in the Invitation to Bid.

B. The bidders are expected to examine and to be thoroughly familiar with all contract documents and with the conditions under which the work is to be carried out. The Commonwealth will not be responsible for errors, omissions, and/or charges for extra work arising from the Contractors or Subcontractors failure to familiarize themselves with the contract documents, that he is familiar with the conditions and requirements of both where they require, in any part of the work a given result to be produced, that the contract documents are adequate and he will produce the required results.

1.7 CONTRACTOR QUALIFICATIONS

A. The Contractor shall be a Division of Capital Asset Management and Maintenance (DCAMM) certified elevator contractor with a current certification.

B. Within three business days from the bid opening, the apparent low bidder shall submit a certification in writing that it has successfully performed at least three recent (within last three years) projects of similar size, scope, and cost. The apparent low bidder shall submit the following information for each project:

1. Project Description
2. Project Value
3. Date was conducted
4. Reference with contact information for the Owner who was the recipient of the work.

C. It is the Bidder's responsibility to obtain the necessary forms from DCAMM and make application to DCAMM not less than three weeks prior to advertised bid opening for DCAMM to evaluate the application and issue a Certificate of Eligibility.

D. The Contractor's Updated Statement is not a public record as defined in M.G.L., Chapter 4, Section 7, and will not be open to public inspection.

1.8 CONTRACT METHOD

A. Work under this Contract shall be lump sum price, for the scopes of work as described in these Specifications.

B. Should additional work be required, the procedures specified in the Contract shall apply.

C. The Massachusetts Standard Labor Wage rates, as included in the Contract exhibits, will be used for base contract work, as well as any change order work.

1.9 SUPERVISION OF THE WORK

A. The Contractor shall be held directly responsible for the correct installation of all work performed under this Contract. The Contractor must make good repair, without expense to the Commonwealth, of any part of the new work, or existing work to remain, which may become inoperative on account of leaving the work unprotected or unsupervised during construction of the system or which may break or give out in any manner by reason of poor workmanship, defective materials or any lack of space to allow for expansion and contraction of the work during the Contractor's warranty period, from the date of final acceptance of the work by DMH.

B. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with his direct work.

1. Training certificates to be submitted on assigned employees prior to commencement of any work or services.

C. The DMH Project Manager shall have the right, at no cost to DMH to terminate the performance of any contractor’s employees on this contract with five (5) days written notice, in which event Contractor shall assign a substitute if continued performance shall be required.

1.10 CONTRACTOR’S USE OF THE PREMISES

A. The Contractor can gain access to the premises during the hours specified below. In addition the Contractor and his personnel will limit themselves to only within the working premises during working hours. If work needs to be scheduled during times other than those listed below, Contractor shall inform the DMH Project Manager one week prior to work.
1. Deliveries: 7:00 am to 8:30 am and after 1:00 pm.
2. General Access: 8:00 am to 4:00 pm.

1.10 CONTRACTOR'S USE OF THE PREMISES, (Cont'd.):

B. Confine operations at the site to areas permitted by:

1. Laws
2. Ordinances
3. Permits
4. Contract Documents
5. DMH Requirements

C. All on-site workers will be required to wear identifying name badges.

D. The Contractor shall supervise the use of the Site related to construction and be responsible for correcting any damage identified by DMH to DMH's satisfaction.

1. An existing conditions survey shall be conducted prior to any work being performed with the DMH Project Manager and the DMH Site Director or their representatives.

E. All available existing utilities adjacent to the construction site will be available for use during construction unless indicated otherwise. These utilities would include water, sewer, and electricity. Temporary connections to these utilities, all metering, transformers, removal, usage, and their associated costs will be the responsibility of the Contractor.

F. All apparatus, storage, and the operation of workmen in connection with activities under this Section shall be confined to limits of the Contract. Storage will not be permitted on the property without the approval of the DMH Project Manager.

G. All parking regulations shall be observed.

H. All vehicles carrying loose, dry material such as elevator parts or refuse, construction debris, etc., shall be covered by tarpaulins to prevent blowing away or spillage of contents. All spillage of whatever nature shall be promptly taken up and removed.

1.11 COORDINATION

A. The Contractor shall be responsible for the proper fitting of all the work and for the coordination of the operations of all trades, subcontractors or material and men engaged upon the work. The Contractor shall do, or cause his agents to do, all cutting, fitting, adjusting, and repair necessary in order to make the several parts of the work come together properly.

1.11 COORDINATION, (Cont'd.):

1. Examine Contract Documents in advance of start of construction and identify in writing questions, irregularities or interference to the DMH Project Manager in writing. Failure to identify and address such issues in advance becomes the sole responsibility of the Contractor.

B. Execute the work in an orderly and careful manner with due regard to the occupants of the facility, the public, the employees, and the normal function of the facility.

C. The work sequence shall follow planning and schedule established by the Contractor as approved by the DMH Project Manager. The work upon the site of the project shall commence promptly and be executed with full simultaneous progress. Work operations which require the interruption of utilities, service, and access shall be scheduled so as to involve minimum disruption and inconvenience, and to be expedited so as to insure minimum duration of any periods of disruption or inconvenience.

D. The Contractor shall review the tolerances established in the specifications for each type of work and as established by trade organizations. The Contractor shall coordinate the various trades and resolve any conflicts that may exist between trade tolerances without additional cost to DMH. The Contractor shall provide any chipping, leveling, shoring or surveys to ensure that the various materials align.

E. The Contractor shall coordinate all work that impacts the fire suppression and alarm system with the Fire Alarm Company including preparation, demolition, modernization, and testing. Costs associated with the Fire Alarm Company that are directly related to this Contract are to be included in the Contract price.

F. The Contractor shall coordinate all work that impacts the emergency generator system with the Emergency Generator Company including preparation, demolition, modernization, and testing. Costs associated with the Emergency Generator that are directly related to this Contract are to be included in the Contract price.

1.12 REFERENCE STANDARDS

A. For products specified by association or trade standards, comply with requirements for the standard, except where more rigid requirements are specified or are required by codes. Refer to the specific Specification for specific references.

1.12 REFERENCE STANDARDS, (Cont'd.):

B. Where reference is made in the Contractual Documents to Publications and Standards issued by Associations or Societies, the intent shall be understood to specify the current edition of such Publications or Standards (including tentative revision) in effect on the date of the contract advertisement notwithstanding any reference to a particular date.

1.13 PRECONSTRUCTION CONFERENCE

A. In accordance with Article V of the CONTRACT AND GENERAL CONDITIONS, a pre-construction conference to review the work will be conducted by the DMH Project Manager.

B. Representatives of the following shall be required to attend this conference:

1. DMH Project Manager
2. DMH Site Director
3. Contractor
4. All Subcontractors

C. The Contractor shall have a responsible representative at the pre-construction conference to be called by the DMH Project Manager following the award of the contract, as well as representatives of field or office forces and major subcontractors. All such representatives shall have authority to act for their respective firms. The pre-construction conference is to be held within five days of Notice to Proceed, or as otherwise determined by DMH.

1.14 WORK BY DMH

A. DMH will provide Site Access

B. DMH will designate parking and staging areas.

C. DMH will provide access to water, electrical, and sanitary facilities. Note that electrical service in the Building is ____. If the Contractor requires additional power, the Contractor is responsible to provide the additional power under the base contract fee.

1.15 SUBCONTRACTORS

A. After selection, the successful Bidder shall submit a list of subcontractors proposed for the performance of the Work to DMH for approval. The list shall include the name, address, contact person, and MA tax identification number for each subcontractor.

1.16 PROJECT MEETINGS

A. Project meetings shall be held on a weekly basis and as required subject to the discretion of the DMH Project Manager.

B. As a prerequisite for monthly payments, ordering schedules, shop drawing schedules, and coordination meeting schedules shall be prepared and maintained by the Contractor and shall be revised and updated on a monthly basis, and a copy shall be submitted to the DMH Project Manager.

C. In order to expedite construction progress on this project, the Contractor shall order all materials immediately after the approval of shop drawings and shall obtain a fixed date of delivery to the project site for all materials ordered which shall not impede or otherwise interfere with construction progress. The Contractor shall present a list and written proof of all materials and equipment ordered (through purchase orders). Such list shall be presented at the meetings and shall be continuously updated.

D. Scheduling shall be discussed with all concerned parties, and methods shall be presented by the Contractor which shall reflect construction completion not being deferred or foreshortened. Identify critical long-lead items and other special scheduling requirements. The project schedule is to include time for submission of shop drawing submittals, time for review, and allowance for resubmittal and review.

E. Project meetings shall be chaired by the DMH Project Manager.

F. Minutes of the project meetings shall be prepared by the DMH Project Manager and shall be distributed to all present within 72 hours of the Project Meeting.

1.17 PERMITS, INSPECTION AND TESTING REQUIRED BY GOVERNING AUTHORITIES

A. If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having any jurisdiction require any portion of the Work to be inspected, tested, or approved, the Contractor shall give the DMH Project Manager or his/her designated representative, and such Authority timely notice of its readiness so the DMH Project Manager may observe such inspecting, testing, or approval.

B. Prior to the start of construction, the Contractor shall complete application to the applicable Building Code enforcement authority for a Building Permit. Such Permit shall be displayed in a conspicuous location at the project site.

C. Unless otherwise specified under the Sections of the Specifications, the Contractor shall pay such proper and legal fees to public officers and others as may be necessary for the due and faithful performance of the work and which may arise incidental to the fulfilling of this Contract. As such, all fees, charges and assessments in connection with the above shall be paid by the Contractor.

1.18 CUTTING, CORING, AND PATCHING, UNLESS OTHERWISE INDICATED

A. The Contractor shall do all cutting, coring, fitting and patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of the Subcontractors as indicated in the Specifications.

B. The Contractor shall not endanger any work by cutting, coring, excavating or otherwise altering the work and shall not cut or alter the work of any other Subcontractor except with the written consent of the DMH Project Manager.

C. Submit a written request to the DMH Project Manager well in advance of executing any cutting or alteration which affects:

1. Work of DMH or separate contractor.
2. Structural value or integrity of any element of the Project.
3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
4. Efficiency, operational life, maintenance, or safety of operational elements.
5. Visual qualities of sight-exposed elements.

1.18 CUTTING, CORING, AND PATCHING, UNLESS OTHERWISE INDICATED, (Cont'd.):

6. Request shall include:
   a. Identification of the Project.
   b. Description of affected work.
   c. The necessity for cutting, alteration, or excavation.
   d. Effect on work of DMH or any separate contractor, or on structural or weatherproof integrity of Project.
   e. Description of proposed work:
   f. Alternatives to cutting and patching.
   g. Cost proposal, when applicable.
   h. Written permission of any separate contractor whose work will be affected.
7. Should conditions of Work or the schedule indicate a change of products from original installation, Contractor shall submit request for substitution to the DMH Project Manager.
8. Submit written notice to the DMH Project Manager designating date and time the work will be uncovered a minimum of three business days in advance.

D. Performance:
1. Execute cutting and patching by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
   a. In general, where mechanical cutting is required, cut work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through concrete work.
   b. Prior to cutting and structural steel or concrete work, contact the DMH Project Manager in writing. Do not cut any structural steel and concrete work until approval has been granted by the DMH Project Manager.
2. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.
3. Restore work which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
4. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
5. Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.

1.18 CUTTING, CORING, AND PATCHING, UNLESS OTHERWISE INDICATED, (Cont'd.):

6. Restore exposed finishes of patched areas; and, where necessary extend finish restoration onto retained work adjoining, in a manner which will eliminate evidence of patching.
    a. Where patch occurs in a smooth painted surface, extend final paint coat over the entire unbroken surface containing the patch.
7. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
    a. For continuous surfaces, refinish to nearest intersection.
    b. For an assembly, refinish entire unit.

E. Existing Utilities Services:
1. Interruptions to critical existing utility services will not be allowed.
2. The Contractor shall locate and record on Drawings all existing utilities along the course of the work by such means as the DMH Project Manager may approve, and shall preserve such marked locations until the work has progressed to the point where the encountered utility is fully exposed and protected as required. It shall be the Contractor's responsibility to notify the proper authorities and/or utility company before interfering therewith.
3. All exposed conduits, wires, and/or cables shall be provided with sufficient protection and support to prevent failure, fraying, or damage due to backfilling or other construction operations.
4. The Contractor shall not obstruct access to existing active utility system manholes and catch basins which continue to serve facilities other than the project construction site. The Contractor shall exercise measures as necessary to prevent the placement of impediments that limit continuous access by authorized utility company or DMH maintenance personnel and shall be required to reimburse the utility company or DMH for any expense incurred as a result of need to remove any such impediments to access.

1.19 PERMITS, INSPECTION AND TESTING REQUIRED BY GOVERNING AUTHORITIES

A. If the contract documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction required any portion of the work to be inspected, tested or approved, the Contractor shall give the DMH Project Manager notice of its readiness so the DMH Project Manager may observe such inspection and testing.

1.19 PERMITS, INSPECTION AND TESTING REQUIRED BY GOVERNING AUTHORITIES, (Cont'd.):

B. Prior to the start of construction, the Contractor shall complete application to the applicable Building Code enforcement authority for a Building Permit. Such Permit shall be displayed in a conspicuous location at the project site. The Contractor shall pay all costs associated with the Building Permit.

1.20 SECURITY REQUIREMENTS

A. The Contractor shall familiarize himself with DMH's security requirements and shall abide by and conform with such established regulations at all times. The Contractor shall submit a list of personnel who will be responsible for the rehabilitation work and the maintenance service. List shall be kept current by Contractor.

B. Proper identification must be worn at all times.

1.21 SAFETY REQUIREMENTS

A. OSHA Safety and Health Course Documentation Records: Chapter 306 of the Massachusetts Acts of 2004 requires that everyone employed at the jobsite must complete a minimum 10-hour long course in construction safety and health approved by the U.S. Occupational Safety and Health Administration (OSHA) prior to working at the jobsite. Compliance is required for the Contractor's and subcontractors' on-site employees at all levels. This requirement does not apply to home-office employees visiting the Site or to suppliers' employees who are making deliveries.

B. Documentation records shall be initially complied by the Contractor and subcontractors as part of certified payrolls, and the Contractor shall create and maintain a copy of the documentation on-site at all times.

C. Building will be occupied during execution of work. Work shall be conducted in a manner to afford maximum protection of building, facilities, employees and the public and to prevent unreasonable delay or interference with normal functioning of the building.

D. Provide fire extinguishers so that they shall be readily available at all times.

E. All accident reports are to be transmitted to the DMH Project Manager within 24 hours of occurrences.

1.22 SUBSTANTIAL COMPLETION

A. Substantial Completion shall be considered to be when the elevator has been inspected and a Certificate of Use has been issued by the State Elevator Inspector and provided to the DMH Project Manager.

****** END OF SECTION ******

SECTION 013300
SUBMITTALS

PART 1 – GENERAL

1.1 PROVISIONS INCLUDED

A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS which are hereby made a part of this Section of the specification.

B. Equality of material, article, assembly or system other than those named or described in this Section shall be determined in accordance with the provisions of the CONTRACT and GENERAL CONDITIONS.

1.2 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. The Contractor shall review and submit to the DMH Project Manager, shop drawings, product data and samples required by Specification Section.

B. Shop Drawings:

1. Original drawings shall be prepared by Contractor, Subcontractor, supplier or distributors, which illustrate some portion of the work; show fabrication, layout, setting or erection details.

    a. Shop drawings shall be prepared by a qualified detailer.
    b. Details shall be identified by reference to sheet and detail number shown.
    c. Maximum sheet size shall be 30 inch by 42 inch.
    d. Reproductions for submittals shall be reproducible with the required number of opaque prints specified herein.

C. Project Data:

1. Manufacturer’s standard schematic drawings:

    a. Modify drawings to delete information which is not applicable to project.
    b. Supplement standard information to provide additional information applicable to project.

1.2 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES, (Cont'd.):

2. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data:

    a. Clearly mark each copy to identify pertinent materials, products or models.
    b. Show dimensions and clearances required.
    c. Show performance characteristics and capacities.
    d. Show wiring diagrams and controls.

D. Samples: Physical examples to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged.

1. Office Samples: Of sufficient size and quantity to clearly illustrate:

    a. Functional characteristics of product or materials, with integrity related parts and attachment devices.
    b. Full range of color samples.
    c. After review, approved samples may be incorporated into the project construction if not retained for comparison.

1.3 CONTRACTORS RESPONSIBILITIES

A. The Contractor shall coordinate each submittal with requirements of work and contract documents.

B. The Contractor's responsibility for errors and omissions in submittals is not relieved by DMH Project Manager's review of submittals.

C. Notify DMH Project Manager in writing at time of submission, of deviations in submittals from requirements of contract documents or previous submissions.

D. Work that requires submittals shall not commence unless submittals have DMH Project Manager's stamp and initials or signature indicating review and approval.

E. After DMH Project Manager's review, the Contractor shall distribute required copies.

1.4 SUBMISSION REQUIREMENTS:

A. Make submittals promptly and in such sequence as to cause no delay in the work.

B. Submit four (4) opaque copies of shop drawings, and number of copies of product data which the Contractor requires for distribution, plus two (2) copies which will be retained by the DMH Project Manager.

C. Submit number of samples specified in each Specification Section.

D. Forward submittals with transmittal letter.

E. Submittals shall include:

1. Date and revision date.
2. Project title.
3. The names of:
   a. Contractor
   b. Subcontractor
   c. Supplier
   d. Manufacturer
4. Identification of product or material.
5. Relation to adjacent structure of materials.
6. Field dimensions, clearly defined as such.
7. Specification Section number.
8. Applicable standards, such as ASTM number.
9. A blank space 5 inches by 4 inch, for the DMH Project Manager's stamp.
10. Identification of deviations from contract document.
11. Contractors stamp, initialized or signed, certifying review and approval of submittals.

1.5 RESUBMISSION REQUIREMENTS

A. Shop Drawings:

1. Drawings, data or samples shall be designated approved, approved as noted, revise and resubmit or rejected.
2. Revise drawings as required and resubmit as specified for previous submittal.
3. Product Data and Samples: Submit new data and samples as required from previous submittals.

1.6 DISTRIBUTION OF SUBMITTALS AFTER REVIEW

A. Distribute copies of shop drawings and project data which display the DMH Project Manager's written approval to appropriate Subcontractors.

1.7 SCHEDULE OF VALUES

A. Prior to the first request for payment, the Contractor shall submit to the DMH Project Manager, a draft Schedule of Values of the various portions of the work in sufficient detail to reflect various major components of each trade, including quantities when requested, aggregating the total contract sum, and divided so as to facilitate payments for work under each Section.

B. The draft Schedule of Values shall be prepared in such form as specified or as DMH may approve, and it shall include data to substantiate its accuracy.

C. Each item in the Schedule of Values shall include its proper share of overhead and profit. This Schedule including breakdown and values, requires the approval of DMH and shall be used only as a basis for the Contractor's request for payment.

****** END OF SECTION ******

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

B. Equality of material, article, assembly or system other than those named or described in this Section shall be determined in accordance with the provisions of the CONTRACT and GENERAL CONDITIONS.

1.2 DESCRIPTION

A. The Contractor shall be responsible for providing and maintaining temporary construction facilities and controls as specified herein.

1.3 HOISTING EQUIPMENT AND MACHINERY

A. All hoisting equipment and machinery required for the proper and expeditious prosecution and progress of the work shall be furnished, installed, operated and maintained in safe condition by the Contractor for the use of all Subcontractor's material and/or equipment delivered to the designated hoisting area except that which is specifically required to be provided by the Subcontractors themselves and is so stated in each appropriately related Section of the Specifications. All costs for hoisting operating services shall be borne by the Contractor.

1.4 STAGING AND TEMPORARY LADDERS, RAMPS, RUNWAYS, ETC.

A. All staging, exterior and interior, required to be over eight feet in height, shall be furnished and erected by the Contractor and maintained in safe condition by him without change to, and for the use of all trades as needed by them for proper execution of their work.

1.5 DUST CONTROL

A. The Contractor shall provide adequate means for the purpose of preventing dust caused by construction operations throughout the period of the construction contract.

B. This provision does not supersede any specific requirements for methods of construction or applicable general conditions set forth in the contract articles with added regard to performance obligations of the Contractor.

C. The Contractor shall provide and maintain floor mats at access points to prevent the tracking of dust.

1.6 NOISE CONTROL

A. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum.

B. Execute construction work by methods and by use of equipment which will reduce excess noise.

1. Equip air compressors with silencers and power equipment with mufflers.

1.7 CLEANING DURING CONSTRUCTION

A. The Contractor shall perform clean-up operations during construction as herein specified.

B. The Contractor shall at all times during the progress of the work, keep the work area and other adjacent areas from accumulation of waste materials or rubbish.

C. Cleaning and removal of waste material and/or rubbish must be performed on a daily basis.

D. Control accumulation of waste materials and rubbish, periodically dispose of off-site. The general contractor shall bear all costs, including fees resulting from such disposal.

E. Store volatile wastes in covered metal containers, and remove from premises.

F. Prevent accumulation of wastes which create hazardous conditions.

G. Provide adequate ventilation during use of volatile or noxious substances.

1.7 CLEANING DURING CONSTRUCTION, (Cont'd.):

H. Conduct cleaning and disposal operation to comply with local ordinances and anti-pollution laws.

1. Do not burn rubbish and waste materials on site.
2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.

I. Use only those materials which will not create hazards to health or property and which will not damage surfaces.

J. Use only those cleaning materials and methods recommended by manufacturer of surface materials to be cleaned.

K. Provide on-site containers for collection of waste materials, debris and rubbish.

L. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas off the construction site.

****** END OF SECTION ******

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

B. Equality of material, article, assembly or system other than those named or described in this Section shall be determined in accordance with the provisions of the CONTRACT and GENERAL CONDITIONS.

1.2 PRODUCTS

A. Products include material, equipment and systems. Products shall be new, best of their respective kinds and free from defects.

B. Comply with Specifications and referenced standards as a minimum requirement.

C. Components required to be supplied in quantity within a Specification Section shall be the same, and shall be interchangeable.

D. Do not use materials and equipment removed from existing structures, except as specifically required, or allowed, by the contract documents.

E. Materials and equipment of similar application: same manufacturer, except as noted.

F. Secure approval of materials, equipment and installation

1.3 WORKMANSHIP

A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.

B. Perform work by persons qualified to produce workmanship of specified quality.

C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration and racking.

1.4 MANUFACTURER'S INSTRUCTIONS

A. When work is specified to comply with manufacturer's instructions, submit copies as specified in Section 013300 - SUBMITTALS.

B. Perform work in accordance with details of instructions and specified requirements.

1.5 TRANSPORTATION AND HANDLING

A. Refer to CONTRACT and GENERAL CONDITIONS and Specification Sections for requirements pertaining to transportation and handling of materials and equipment.

B. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.

C. Provide equipment and personnel to handle products by methods to prevent soiling or damage.

D. Promptly inspect shipments to assure that products comply with requirements, that quantities are correct and products are undamaged.

1.6 STORAGE AND PROTECTION

A. Refer to CONTRACT and GENERAL CONDITIONS and Specification Sections for requirements pertaining to storage and protection of materials and equipment.

B. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weathertight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.

C. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.

D. Arrange storage to provide access for inspection. Periodically inspect to assure that products are undamaged, and are maintained under required conditions.

****** END OF SECTION ******

SECTION 017000
CLOSEOUT PROCEDURES

PART 1 – GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

B. Equality of material, article, assembly or system other than those named or described in this Section shall be determined in accordance with the provisions of the CONTRACT and GENERAL CONDITIONS.

1.2 FINAL CLEANING

A. Upon completion of the work under this Contract, the Contractor shall leave the project site ready for use without the need for further cleaning or directly related painting of any kind and with all work in perfect order. The Contractor shall perform final cleaning operations as herein specified prior to final inspection.

B. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for occupancy.

C. Cleaning shall include all surfaces, interior and exterior in which the Contractor has had access whether existing or new.

D. Use only those materials which will not create hazards to health or property and which will not damage surfaces.

E. Use only those cleaning materials and methods that are recommended by the manufacturer of surface material to be cleaned.

F. Employ experienced workmen or professional cleaners for final cleaning operations.

G. Remove grease, mastic, adhesives, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior surfaces.

H. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.

1.2 FINAL CLEANING, (Cont'd.):

I. Polish glossy surfaces to a clear shine.

J. In addition, the Contractor shall remove from the site , all building rubbish, unused materials belonging to him or used under his direction during construction or impairing the use or appearance of the property and shall restore such areas affected by the work to their original condition

K. Prior to final completion or DMH Use and Occupancy, the Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces, and all work areas, to verify that the entire work is clean.

1.3 PROJECT DOCUMENTS

A. Record Drawings shall consist of **all** the contract drawings. Drawings shall be provided in electronic form and on CD.

B. Project Manuals:

1. Before requesting acceptance of work, furnish as required, copies of product manuals shall be provided to the DMH Project Manager. The Project Manual shall contain, but not be limited to:

    a. Final detail of all submittals: fixtures, doors, frame, etc.
    b. Product reference including Manufacturer's name and material description detail sheet for all major applicable components and parts; including but not limited to: solid state non-proprietary controller, VVVF-AC non-proprietary microprocessor based programmable simplex main elevator controller, leveling system, and roller guide.
    c. Controller detail and complete wiring detail corrected to incorporate any field or final changes.
    d. Copy of Certificates of Use.
    e. Product data on all related work.

2. Complete project manual and all detail and documentation to also be electronic and furnished on CD.

C. Operation And Maintenance Manuals: Should include cleaning, replacement parts information, warranties, all contact information of subcontractors and a formal warranty for all work completed.

D. Preventative Maintenance Checklist: Per recommendations of manufacturer's.

1.3 PROJECT DOCUMENTS, (Cont'd.):

E. Elevator Keys

1. Provide four sets of keys for DMH's use; namely, Independent Key, fan and light and any designated car access key as applicable.

1.4 GUARANTEES AND WARRANTIES

A. The Contractor shall submit to the DMH Project Manager all extended guarantees and warranties that have been specified in various, individual Sections of the Specifications.

B. The Contractor shall guarantee to DMH all work installed to be free from any and all defects in workmanship and/or materials and that all apparatus will develop capacities and characteristics specified and that if, during period of one year from date of certificate of completion and acceptance of work, unless a longer period is specified, any such defects in workmanship, material or performance appear, he will remedy them without cost to DMH.

C. Should Contractor fail to remedy such defects within the agreed length of time, to be specified in notice from DMH, DMH may have such work performed by another contractor and charge the entire cost to the Contractor.

****** END OF SECTION ******

SECTION 024119
SELECTIVE DEMOLITION

PART 1 – GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

B. Equality of material, article, assembly or system other than those named or described in this Section shall be determined in accordance with the provisions of the CONTRACT and GENERAL CONDITIONS.

1.2 DESCRIPTION

A. It is not the intent herein to describe all the items and work required to be removed under this Section. The Contractor shall assure himself that all of the work to be removed, not otherwise specified herein or described under other Sections shall be removed under this Section at no additional cost to the Commonwealth.

B. The Contractor shall also examine other Sections of these Specifications and familiarize himself with their provisions regarding the removal of existing items and work. He shall understand that all items and work not specifically mentioned to be removed by the requirements of other Sections of these Specifications shall be removed as part of the work under this Section.

C. The scope of work consists of material and services to be furnished under this Section, and without limiting the generality thereof, includes labor, equipment and services required for the removal of existing work, special protection and all work incidental thereto as specified herein and as shown on the Drawings.

1.3 RELATED WORK

A. The following work is not included in this Section and is to be performed under the contracted scope of work:

1. Movable items and items of DMH's equipment in the areas of the existing building affected by the work under this Contract will be removed by DMH.

1.3 RELATED WORK, (Cont'd.):

2. Cutting and core drilling for any possible new electrical work will be performed by these respective trades.

3. The patching and repair of ceilings, floors and walls caused by work performed under this scope of work is to be included under these Specifications describing similar construction. The Contractor shall do his utmost to keep such necessary patching and repairing to a minimum.

4. Disconnecting of existing services, as required, will be done by the respective contractor as described within their scope of work specifications.

1.4 PERMITS AND CODES

A. Work specified herein shall conform to Specifications and shall comply with all rules, regulations, laws and ordinances of the Commonwealth of Massachusetts.

B. The Contractor shall procure and pay for all permits and licenses required for the complete work specified or inferred under this Section.

1.5 SCHEDULING

A. Before beginning the removal of work and demolition, the Contractor shall consult jointly with the DMH Site Director and DMH Project Manager to determine the schedule of work, exact places, times and days during which the removal and demolition work may, or may not be carried on, and to determine further reasonable requirements, particularly in regards to noise prevention, dust prevention, weather protection, and safety precautions.

B. No work shall be started in existing building without prior approval of the Facility. The Contractor shall give the DMH Site Director adequate advance notice of his readiness to start such work in order that they may properly rearrange activities or evacuate the spaces to be affected.

1.6 EXAMINATION OF PREMISES

A. The Contractor will be held to have examined the premises before submitting proposals for the work and to have satisfied himself as to the existing conditions under which he will be obliged to operate or that will in any way affect the work.

1.6 EXAMINATION OF PREMISES, (Cont'd.):

B. The Contractor is responsible to determine the character and amount of materials and debris to be removed. No allowances will be made in this connection for error or negligence of the Contractor.

C. The Contractor will examine the proposed DMH-designated storage area for parts salvaged under this Specification and identify any issues with moving the salvaged equipment to this location and verifying that the space will accommodate the salvaged materials.

1.7 ENCLOSURES

A. Provide temporary partitions and ceilings as required to separate work areas from DMH's occupied areas, to prevent penetration of dust and moisture into occupied areas, to prevent damage to existing areas and equipment. Construction shall be framing and sheet materials with closed joints and sealed edges at intersections with existing surfaces.

B. Provide plastic sheet material and tape to seal HVAC supplies and exhaust. Insure that dust does not enter the ductwork.

1.8 PROTECTION

A. The removal of all portions of the structure to be removed shall be done with utmost care, using tools and methods that will not transfer any heavy shocks to the remaining portions of the existing building. All possible care shall be taken to avoid vibration and other disturbances.

B. All existing items directed by the DMH Project Manager to be retained as the DMH's property or noted herein, shall be handled and removed with full consideration for their preservation. It is the full responsibility of the Contractor to replace, without additional charge to the Commonwealth, all such items which are lost or damaged due to the removal operations or handling.

C. When removing materials and making openings in walls, floors, etc., the Contractor shall take all precautions and use whatever protective devices, shoring, guardrails, and the like as may be required to assure that the remaining and adjacent portions of the existing work which is to remain is substantially supported and/or not loaded beyond safe limits.

PART 2 – PRODUCTS

A. Plastic
B. Painters Tape
C. Wood

PART 3 – EXECUTION

3.1 PREPARATION

A. Before starting the removal of work, the Contractor shall arrange for the disconnection of active utility services in the areas where construction work is to take place. All work on existing utilities shall be accomplished by the respective subtrades or utility companies having jurisdiction.

3.2 REMOVAL OF EXISTING WORK

A. Removal of the existing obsolete main controller and floor landing system.

B. Removal of existing obsolete power door operator.

C. Salvage of all removed parts for inspection and possible reuse at freight elevator.

D. Provide dust protection to contain dust and debris to the work area.

E. Removal of existing floor in elevator for replacement.

F. Disconnect utilities as required.

3.3 CLEAN-UP

A. At the completion of work, all rubbish, debris, waste, materials, and salvaged materials shall be removed from the site. All tools, scaffolds, apparatus and appliances used in connection with work under this Section shall be removed by the Contractor, and the premises shall be left in clean condition, ready for the alteration work as described under other Sections of these Specifications.

3.4 DISPOSAL OF WORK REMOVED

A. All non-salvageable refuse and debris which accumulates as a result of work under this Section shall be removed. No refuse or debris of any nature shall be allowed to accumulate to the detriment of the work.

B. All existing items removed under this Section shall be salvaged for inspection by the DMH Project Manager to determine what parts might be used on the existing freight elevator. Whatever parts are determined to not be reusable will become the responsibility of the Contractor to be legally disposed of off-site at their expense. Salvaged items are to be relocated to a determined storage location where the DMH Project Manager will render the items over to remain property of the Commonwealth.

C. Remove debris in covered containers on a route designated by the DMH Project Manager.

****** END OF SECTION ******

SECTION 142100
ELECTRIC TRACTION ELEVATOR

PART 1 – GENERAL

1.1 GENERAL PROVISIONS

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

B. Equality of material, article, assembly or system other than those named or described in this Section shall be determined in accordance with the provisions of the CONTRACT and GENERAL CONDITIONS.

1.2 DESCRIPTION OF WORK

A. Work included: Provide labor, materials and equipment necessary to complete the work detailed in this Section to modernize and renovate the existing passenger elevator in accordance with all regulatory codes.

B. The Contractor shall bear the responsibility of coordinating the work specified herein including all related work and provide a complete elevator system in full accordance and compliance with all code authorities having jurisdiction.

C. The installation, modernization, replacement and refurbishment shall be in conformity with the American Standard Safety Code for Elevators, and Escalators (ANSI/ASME A17.1-Latest Edition) and the Commonwealth of Massachusetts Board of Elevator Regulations 524 CMR, including modifications.

D. The Contractor shall comply with all Electrical, Building, Fire and Local Codes that have jurisdiction and obtain all necessary permits to perform the work required.

E. Passenger elevator shall be arranged for the physically handicapped as required by the Specifications for making Buildings and Facilities Usable by the Physically Handicapped (ANSI A117.1-Latest Edition) Massachusetts Architectural Access Board 521 CMR and *Americans with Disabilities* ACT (ADA).

F. Due to the nature of the renovation work and the integration of new work with existing work, the Contract Documents do not show or may not fully specify all conditions and the entire scope of new to existing interfaces.

1.2 DESCRIPTION OF WORK, (Cont'd.):

G. General Contract Requirement: It is important Contract General Requirement for all work to be fully integrated and coordinated with existing conditions whether fully detailed or specified.

H. Transition: Provide a smooth, uniform transition between new and existing work.

I. At completion of Work, provide all final manuals, documentation and brochures.

J. The Contractor shall be responsible for but not limited to the following Work detailed within these specifications.

1. Work shall be conducted in first class workmanship manner and in full accordance with all codes and regulations to insure a complete, code compliant product.
2. Provide safety screen to separate hoistways from occupied areas during modernization
2. Work includes but is not limited to: new current code compliant VVVF-AC non-proprietary microprocessor, new car top mounted floor landing system with fixed steel tape in hoistway, new frequency drive power door operator system, elevator landing door panels, entrance frames and all necessary wiring.
3. Controller interfacing with the existing emergency generator service.
4. All cutting, patching and painting of all work affected by this Contract. Paint shall match existing locations.
   a. All painting shall be sufficiently extended to produce acceptable finish.
6. Provide fire extinguisher in accordance with code.

1.3 CONTRACTOR'S RESPONSIBILITY

A. Contractor will be held to have carefully examined existing building conditions and to have made all necessary investigations, to inform himself thoroughly and fully as to facilities for delivery of materials and equipment and with space floor loading limitations affecting delivery of equipment to and to have informed himself fully as to all difficulties that may be encountered in complete execution of all work.

B. Contractor will be held to have examined al specifications and all other data or instructions pertaining to work.

1.3 CONTRACTOR'S RESPONSIBILITY, (Cont'd.):

C. No consideration or allowance will be granted for failure to visit site, or for any alleged misunderstanding of materials to be furnished, or work to be done, it being understood that submission of Form of Proposal carries with it agreement to all items and conditions referred to herein.

1.4 LAWS AND PERMITS

A. Contractor shall comply with all Federal, State and Municipal Laws and Ordinances, prepare all documents, give all notices, obtain all permits necessary for the work, pay all costs and fees for permits and inspections and obtain all certificates of inspection and approval for the work and deliver same to the DMH Project Manager before requesting final acceptance.

B. All work and materials shall be in full accordance with the rules of all other departments or boards having jurisdiction.

C. This Contractor shall immediately inform the DMH Project Manager of any work or materials which violate any of the above laws and regulations and any work done by this Contractor causing such violations shall be corrected by this Contractor at his own expense.

1.5 CONFLICTS

A. The intent of these specifications is to include all items necessary for the proper execution and full completion of the work by the elevator contractor.

B. In the event that there is real apparent discrepancy between different sections of specifications concerning nature, quality or extent of work to be furnished, it shall be held that Contractor has based his bid on the requirement for the greater quantity or higher quality which shall take precedence and shall be contract requirement.

C. Final decision will be in accordance with the General Conditions of Contract.

1.6 SUBMITTALS AND SHOP DRAWINGS

A. Shop Drawings - Submit in accordance with provisions of Section 013300, SUBMITTALS, the shop drawings and all necessary information required to move forward upon notice to proceed. Contractor shall be responsible for submitting the following information which will include product data, project schedule, samples and schedules of values.

1.7 APPROVALS

A. Materials, workmanship, design and arrangement of work shall be subject to approval of the Project Manager.

B. Upon execution of Contract and prior to ordering of material, submit for approval list of all material and equipment proposed for use in ample time to avoid delay in schedule of work. Intention of using specified materials shall not relieve the Contractor's obligation of submitting this list.

C. Materials or products specified brand or trade name or catalog reference shall be the basis of the bid and furnished under the contract.

1.8 PERMITS AND FEES

A. Permits and fees shall be in accordance with the General Conditions for Construction Contracts. The Contractor shall pay for all elevator permits, licenses and fees.

B. The Contractor shall obtain and pay for all necessary elevator permits and inspections required for the elevator changes.

1.9 TESTS

A. Pay for Test Permits and conduct tests and adjustments of equipment as specified or necessary to verify performance requirements as required by Commonwealth of Massachusetts Elevator Regulations 524 CMR - Latest Edition and the ANSI/ASME A17.1.

B. Submit data taken during such tests to the DMH Project Manager as directed.

C. Acceptance test of elevator and one (1) annual state safety test during the warranty period, including freight elevator, is included in Specification Section 142101.

1.10 ACCEPTANCE TEST AND CERTIFICATION OF WORK

A. At the completion of the modernization of the elevator, the Contractor, after conducting all pre-testing of the elevator and the elevator systems, shall contact the Department of Public Safety to request a State Acceptance Test.

1.10 ACCEPTANCE TEST AND CERTIFICATION OF WORK, (Cont'd.):

B. The Contractor shall furnish all necessary labor, gauges, O.& M. manuals, equipment and measured test weights, equal to the capacity of the elevator, to make the test of the operating equipment. The test shall include but not limited to:

1. Inspection of operating and safety devices.

C. Upon notification by the State of the scheduled test date, Contractor shall advise DMH's Project Manager of same.

1. DMH Site Director to coordinate his personnel as required for testing of the fire alarm system and emergency generator system in relation to the operation of the elevator(s).
2. Acceptance test to be conducted during regular business hours.

D. At completion of the test witnessed by the Board of Elevator Regulations, the Contractor is to post the Certificate of Use in the certificate of frame.

E. Copy of Certificate of Use is to be provided by the DMH Project Manager.

1.11 ACCEPTANCE

A. The work shall be subject at all times to inspection by the DMH Project Manager. Any materials installed or work performed found not to be in accordance with the Specification requirements, shall be replaced or corrected at no additional cost to the Commonwealth.

1.12 PROTECTION OF PERSONS AND PROPERTY

A. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with his direct work.

B. The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

1. All employees on the Work and all other persons who may be affected thereby.
2. All the work and all materials and equipment to be incorporated therein, whether in storage on or off site, under the care, custody or control of the subcontractors.

1.12 PROTECTION OF PERSONS AND PROPERTY, (Cont'd.):

3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
4. Contractor to provide full roof protection for his direct work.

C. Provide screens, partitions or other approved barricades to effectively isolate building personnel and public from work areas of elevator while it is out of service. In addition, provide a safety screen between the elevators extending the full height of the hoistway.

D. It shall be the obligation of the elevator contractor to maintain a free and clear passageway in the elevator lobby. Parts, tools, etc., shall be kept within the confines of entrance barricades.

E. The Contractor shall comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards and protection, including barricades, posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.

F. The Contractor shall not load or permit any part of the work to be loaded so as to endanger its safety.

G. In any emergency affecting the safety of persons or property, the Contractor shall act top prevent threatened damages, injury or loss.

1.13 NOTICE

A. Contractors shall give all requisite notices to the proper authorities, obtain all official inspections, elevator permits and elevator licenses made necessary by the work and shall comply with all laws, ordinances, rules and regulations pertaining thereto. The Contractor shall provide the DMH Project Manager with any required inspection approval certificates. In addition, the Contractor shall conform to the rules and regulations of the National Boards of Fire Underwriters, the National Electrical Code, and the latest American National Standards Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks, where applicable. If the Contractor performs any work contrary to or not in conformity with such laws, ordinances, rules and regulations, Contractor shall bear all costs arising therefrom.

1.13 NOTICE, (Cont'd.):

B. The Contractor shall take whatever precaution may be necessary to render any portion of the work more secure in any aspect, to decrease the liability of accident from any cause, and to avoid contingencies which are likely to delay the completion of the work. Also, the Contractor shall conduct the work so as to cause the least possible interference with or obstruction to the grounds, roads and facilities on or near which the work covered hereby may be performed. Damage to such existing facilities shall be repaired or replaced at the Contractor's own expense.

1.14 ADDITIONAL REQUIREMENTS

A. In conformance with 524 CMR, Section 35.00: 17.07: Hoistway Doors: General:

1. On completion of the installation and safety testing of an elevator, the Elevator Contractor shall notify the local fire department to have an authorized representative available to receive instruction from the Elevator Contractor relative to the purpose, operation and use of the hoistway door unlocking device.
2. The unlocking device shall be secured at a location in the building that is readily accessible to the fire department.
3. The opening and closing of the elevator car doors and elevator landing doors shall be the sole responsibility of the fire department during firefighting or extrication operations.
4. The unlocking device is prohibited for use other than a MA licensed elevator technician, MA licensed state elevator inspector or firefights properly trained in the use of same.

1.15 RELATED WORK TO BE PERFORMED BY CONTRACTOR

A. Provide all cutting, patching, and painting required to perform all work specified.

B. The Contractor responsible to provide access and standby services, as required.

C. Other:

1. Furnish and install in elevator machine room, fire extinguisher, class "ABC" which shall be located convenient to the access door on a bracket, mounted to the wall as required by code. (Maintenance of extinguisher is to be provided by DMH.)

1.15 RELATED WORK TO BE PERFORMED BY CONTRACTOR, (Cont'd.):

D. Provide all required elevator controller tie-in for firefighters' recall service.

E. Elevator Emergency Power Operation

1. The Contractor shall provide elevator controller circuitry and connections for emergency power operation.
2. All circuitry shall automatically reset as normal supply becomes available for car.
3. The Contractor shall provide elevator controller circuitry so that after normal power failure and establishment of emergency power, the elevator shall operate. All work shall be in accordance with A17.1 (current code), as modified by 524 CMR.

F. Fire rate and enclose all holes in hoistway.

PART 2 – PRODUCTS

2.1 APPROVED MANUFACTURERS

A. Motion Control Managering, Inc.

B. SmartRise Engineering

C. G.A.L. Manufacturing Corp.

D. Approved equal or better.

2.2 CONTROLLER AND LANDING SYSTEM

A. Furnish and install one (1) new current code compliant VVVF-AC non-proprietary microprocessor base programmable simplex main elevator controller with complete on-board diagnostic features.

1. Disconnect and completely remove the existing controller and replace with new controller, installed and connected in place, all complete as hereinafter specified.
2. It is the intent of this specification to provide a fully non-proprietary solid state control system controller. The system shall utilize solid state input/output interface for the majority of signals. It is understood, where required by Code, relays and/or contacts are to be utilized for safety and power control considerations. The use of relays as input and/or output devices is not acceptable.

2.2 CONTROLLER AND LANDING SYSTEM, (Cont'd.):

a. All controller components shall be designed to provide the required operation as herein specified.
b. All assemblies, power supplies, switches, relays and other items shall be securely mounted on a substantial, self-supporting steel frame of angles or channels and shall be totally enclosed with covers in a floor mounted cabinet. Equipment shall not be mounted on any covers.
c. All controller switches and relays shall be magnet operated with contacts of design and material to ensure maximum conductivity, long life and reliable operation without overheating or excessive wear and shall provide a wiping action to prevent sticking due to friction.
d. Where time delay relays are used in the circuits, they shall be of an acceptable design that is reliable and consistent, such as condenser timing or electronic timing circuits. No dashpot time relays shall be used.
e. Each device on all panels shall be properly identified by name, letter, or standard symbol which shall be neatly stencil painted (or otherwise marked), in an indelible and legible manner, on device or panel. Identification markings used on wiring diagrams. The ampere rating shall be marked adjacent to all fuse holders. All spare conductors shall be neatly formed, laced and identified.
f. Control system shall be compatible with the selector.
    1) At completion of project, fully clean down selector tape and insure operation.
g. Safety switch shall cut off current, automatically apply brake and stop car upon failure and/or upon operation of any electrical safety device.
h. The system operation shall change continuously by demand and not rely on a forced method of program change.

3. Load Weighing Device - Provide car with automatic load-weighing device that shall:
    a. Operate at preset load of approximately 80 percent of full load.
4. Earthquake Protective Features:
    a. Elevator safety requirements for seismic risk zone 2 or greater shall be in conformance with 524 CMR, Section 35.00 Modifications, ASME A17.1 Section 8.4 and Section 15.00 (3) as it applies to existing and new components.

2.2 CONTROLLER AND LANDING SYSTEM, (Cont'd.):

5. Components - The microprocessor shall be designed and installed to meet the following requirements:
   a. Provisions shall be made in the computers so that the elevator system can be modified at a future time. The system shall be so designed that the modifications to the software shall be all that is required to revise the operation. It shall be further designed so that there will be minimum shut down time should changes be required.
   b. The latching circuitry (outputs) shall be fail-safe design which turns off all the outputs in the event of a processor malfunction.
   c. Power Supplies: All power supplies utilized shall be UL recognized. They shall all have short-circuited protection.
   d. Frame: All assemblies, power supplies, chassis, switches, relays, and other items shall be securely mounted on a substantial, self-supporting steel frame. The equipment shall be completely enclosed with covers. No equipment is to be mounted on covers.
   e. Wiring: All factory wiring shall utilize UL labeled copper wires. All wiring interconnections shall be neatly routed. All wiring connections to studs or terminals shall be made by means of solder or solderless lugs.
   f. Marking: All components shall be clearly and permanently identified adjacent to each device and shall be identical to the wiring schematic.
   g. All components (relays, fuses, P.C. board, etc.) shall be permanently marked with symbols as indicated on drawings.
   h. Provide extender boards when computing devices are used inside a computer chassis so as to have access to the printed circuit cards utilized.
   i. Electronic time delay devices shall use stable capacitor or crystals as the time base.
   j. Terminals shall be provided for a future connection to a computerized test system. An adequate number of terminals shall be provided so as to monitor all of the various functions of the elevator. These shall include but not limited to car positions, running functions up and down, door open and close, hall and car calls, door protective devices, safety circuits, elevator recapture, etc.

2.2 CONTROLLER AND LANDING SYSTEM, (Cont'd.):

6. Printed Circuits and Related Hardware:
   a. All printed circuit boards shall be fabricated with G10 glass epoxy material with a minimum equivalent one ounce copper.
   b. All printed circuitry shall be coated with tin-lead.
   c. All double sided boards shall have plated-through holes.
   d. All printed circuit board edge connections shall be gold plated.
   e. All solid state hardware and devices shall have built-in noise suppression devices which provide a high level of noise immunity.
   f. Power supplies shall have noise suppression devices provided.
   g. All inputs from external devices (such as indicators, relays) shall be isolated with opto-isolation modules.
   h. The use of relays as input and/or output devices are not acceptable.
   i. A separate regulated power supply shall be used for each computer chassis.
   j. The control circuits shall be designed so that one side of the power supply is grounded to provide for testing.
   k. Under no circumstances shall he safety circuits be affected by accidental grounding of any part of the system.
   l. In the event of a power failure or interruption, the system shall be designed so that it will start properly when power is returned.
   m. System memory shall be provided so that data shall not be lost in the event of a power failure or disturbance.

7. Required power will be furnished from existing power panels. The Contractor will coordinate location and requirements with the DMH Project Manager.

8. Speed Regulation:

   a. The rate of acceleration and deceleration of the car shall, under any condition of load, be as nearly constant as is possible with the method of control specified and employed and shall be independent of the operating device in the car.

2.2 CONTROLLER AND LANDING SYSTEM, (Cont'd.):

b. The acceleration, deceleration and velocity shall be computer controlled. The detection of velocity and position of the car shall be fed into the computer. The computer shall compare this information with the velocity profile and adjust as necessary to insure a fast and smooth acceleration and deceleration curve.

c. Entire elevator equipment including hoisting machines and controllers shall operate without noticeable irregularities and as quietly as can be obtained by use of high grade materials, first class workmanship and adjustments.

9. Fire Emergency Control Service

a. Phase I emergency recall operation:

1) A three (3) position key operated switch will be provided only at the designated level for the elevator, labeled "FIRE RECALL" and its positions marked "RESET," "OFF," and "ON" (in that order), with the "OFF" position vertical and in the center position. The key shall be inserted with the cut side facing up. The "FIRE RECALL" letters shall be a minimum of 5mm (0.25 in.) high in red or a color contrasting with a red background located in the lobby within sight for the elevator. *The key shall be removable only in the "ON" and "OFF" positions.*

2) If required, an additional key-operated "FIRE RECALL" switch, with two (2) positions, marked "OFF" and "ON" (in that order)shall be permitted only at the building fire control station.

3) All "FIRE RECALL" switches shall be provided with an illuminated fire hat visual signal to indicate when Phase I Emergency Recall Operation is in effect. Required signage at the designated level shall be provided. This signage shall be engraved (no applied signs permitted).

4) When the switch is in the "OFF" position, normal elevator service shall be provided.

5) When the switch is in the "ON" position, the elevator controlled by this switch and which is on automatic service shall return non-stop to the lobby level and the doors shall open and remain open.

6) If the elevator is traveling in the reverse direction it shall reverse at or before the next available floor without opening its doors.

2.2 CONTROLLER AND LANDING SYSTEM, (Cont'd.):

7) If the car stopped at a landing will have the in-car emergency stop switch rendered inoperative as soon as the door is closed, and the car starts toward the lobby level. If the car is traveling to or away from the lobby level it will have the in-car emergency stop switch rendered inoperative immediately.
8) If the car is standing at a floor other than the lobby level, with doors open and in-car emergency stop switch in the run position, will close the doors without delay and proceed to the lobby level.
9) Door opening devices for power-operated doors which are sensitive to smoke or flame shall be rendered inoperative. Mechanically actuated door opening devices not sensitive to smoke or flame shall remain operative. Car door open buttons shall remain operative.
10) The car and corridor buttons and all corridor door opening and closing buttons in the car operating panels will be rendered inoperative and call registered lights and directional lanterns shall be extinguished and remain inoperative. Position indicators, when provided, will remain in service.
11) The car shall be provided with a visual and audible signal system which shall be activated to alert the passengers that the car is returning non-stop to the lobby level.
    a) A fire alarm initiating device in the machine room, when activated, shall cause visual firefighter's jewel in car to illuminate intermittently.
    b) The controller interfacing included with the scope of the work.

b. Smoke Detectors:
    1) The Contractor is to provide the necessary elevator controls and connections for smoke detector operation as required by code for Phase I Firefighter's Emergency Return, designated and alternate and Firefighter's flashing hat signal.

2.2 CONTROLLER AND LANDING SYSTEM, (Cont'd.):

c. Phase II Emergency IN-Car Operation:

1) A Firefighter's Operation Panel, openable by the same key that operates the "FIRE OPERATION" switch, shall be provided in the car operating panel and shall be readily accessible in accordance with ASME A17.1-2004. The front cover shall contain the words "FIREFIGHTER'S OPERATION" in red letters 5mm (.25in) high.

a) "FIRE OPERATION" three positions ("Off" "Hold" and "On" – in that order) Key Switch, "CALL CANCEL" buttons, the additional visual signal and operating panel behind the locked cover. All buttons and switches shall be readily accessible, located not more than 72" above the floor and shall be arranged in accordance with A17.1:2.27.3.3.7.

b) Cover shall be openable by the MA 3502 key when car is on Phase I and at the recall level.

c) The label "FIRE OPERATION" lettering shall be a minimum of 5 mm (0.25 in.) high in red or a color contrasting with a red background. 'Fire Operation' shall become effective only when Phase I Emergency Recall Operation is in effect and the car has been returned to the recall or alternative level.

d) The Fire Service key shall be removable in each position. The "HOLD" position in the center shall be vertical. The key shall be inserted with the cut side facing up. The key shall be rotated clockwise to go from "OFF" to "HOLD" to "ON".

2) The possession of the Massachusetts Fire Fighters Key number 3502 shall be limited to fire department personnel, licensed elevator mechanics and elevator inspectors only. The key shall not be part of a building master key system.

2.2 CONTROLLER AND LANDING SYSTEM, (Cont'd.):

3) When the "FIRE OPERATION" switch is in the "ON" position, the operation shall be by authorized users only and shall be as follows:
   a) All corridor call buttons and directional lanterns shall remain inoperative.
   b) The opening of power-operated doors shall be controlled only by continuous pressure "Door Open" button. If the button is released prior to the doors reaching the fully open position, the doors shall automatically reclose. Open doors shall be closed by continuous pressure on "Door Close" button.
   c) When the switch is in the "Hold" position, the car shall remain at the floor with its doors open, and "Door Close" button shall be inoperative.
   d) Door reopening devices rendered inoperative shall remain inoperative.
   e) Means shall be provided to cancel registered car calls.
   f) Elevators shall only be removed from Phase II operation by moving the emergency key-operated switch in the car to the "off" position with the car at the designated or alternate level.
4) All keys for fire emergency service shall be as specified in 524 CMR.
5) Elevator shall be removed from Firefighter's Phase I Operation: Fire Recall switch shall be rotated first to "Reset" and then to the "Off" position.
6) Firefighter's key switch grooves shall be constructed and installed with the cut side facing down.

10. Standby/Emergency Power:
    a. Elevator Operation.

    1) The Contractor shall provide controller circuitry and connections for emergency power operation.
       a. All circuitry shall automatically reset as normal supply becomes available.

2.2 CONTROLLER AND LANDING SYSTEM, (Cont'd.):

2) The illuminated signal shall be provided in the Annunciator Panel and at the main floor designated level to indicate Elevator Emergency Power status.
3) Upon transfer to emergency power, the elevator will be operable.

2-03 HOISTWAY AND CAR EQUIPMENT

A. Car and counterweight Guide Rails:
1. Car and counterweight guide rails shall be reused and overhauled as follows:
a. Existing guide rails shall be reused in place but shall be realigned to +1/8 inch of plumb for travel distance. All high spots from previous safety applications shall be filed smooth.
b. All fishplates shall be solidly tightened.
c. The rails shall be cleaned completely with solvent.
d. All brackets will be reviewed for integrity and, as required, properly re-secured to the building structure.

B. Wiring:

1. Remove all existing wiring and conduit tied into the components being replaced, i.e. main controller to hoist motor, machine brake, car top, cab, hoistway, pit area, multi-wire traveling cables, and strain relief hardware.
a. Provide new wiring in the hoistway and machine room adequate for the proper operation of the equipment. Multi-conductor for light and signal circuits in the elevator and machine room and hoistway shall conform to the elevator traveling cable specified in the NFPA Standards for the particular type of location. Conductors shall be copper.
b. The minimum size of conductors, exclusive of those which form an integral part of control devices, shall be No. 14 for lighting circuits and No. 12 for operating, control, and signal circuits, except that for lighting conductors in traveling cable, No. 18 conductors may be used in parallel to provide a current carrying capacity to not less than No. 14 size.

2-03 HOISTWAY AND CAR EQUIPMENT, (Cont'd.):

c. In no case shall the maximum electrical current carried exceed that specified by the NFPA Standards for the wiring between the various items of elevator equipment and external wiring, ands wiring methods, shall conform with NFPA Standards. Wiring shall be in zinc-coated rigid steel conduit, intermediate electrical conduit, electrical metallic tubing (EMT), or metal wireways and outlet boxes, except for traveling cables.

d. Flexible metal conduit may be used for the short connections not subject to moisture, oil, or embodiment in concrete, but such runs shall contain a green equipment grounding conductor.

e. Connections to the controller shall be made in a manner that minimizes transmission of vibration or noise to the building. Hoistway raceway may be in rigid galvanized steel conduit.

f. From shaft riser to door interlocks, SF-2 type or equivalent, maximum operating temperature, 392 degrees F. Terminations shall be insulated to maintain integrity of wiring.

C. Traveling Cables:

1. Remove existing travel cables and replace with new traveling cables designed for elevator service in accordance with NFPA Standards.
2. The cables shall be sufficiently flexible to readily adapt to all charges in the position of the elevator car and hang straight without twist. The cables shall be capable of bending 360 degrees with an inside radius of one foot without any permanent set and without cracking of the outer covering. The open loop shall show no tendency to twist upon itself.
3. Traveling cables shall have non-metallic fillers and shall be suspended by Crosby clips or looping cable around supports.
4. In addition Kellum grips shall be provided to reduce slipping of jacketing and conductors.
5. The traveling cables shall include telephone cabling and shall be properly supported. The terminal boxes shall have approved connection strips for connecting conductors and, in addition to said devices for connecting conductors, approved strain devices for connecting the supporting strands and relieving the conductors of the traveling cables of all strain.

2-03 HOISTWAY AND CAR EQUIPMENT, (Cont'd.):

6. The swing of the traveling cables shall be checked when the elevator is running and all shields and pads necessary to prevent chafing shall be installed. The loop in the traveling cables shall not be less than 2 feet unless otherwise approved.
7. The traveling cables and the corresponding groups of conductors connecting these cables to the control, signal, and car operating panels shall each contain at least 10 percent spare conductors, but not less than two spare conductors of the same size and type.
8. Each traveling cable conductor shall have a distinctive color-ceded outer covering for identification. Terminal blocks shall have indelible identification numbers for each terminal connection.
9. Provide shielded wires for communication.

D. Hoist and Governor Cables:

1. Provide new hoist and governor cables as follows:
   a. Hoist Cables:
      1) Traction Steel
      2) Minimum 6 stands wound around hemp core.
      3) Terminate both ends in shackles.
      4) Equalize the tension on all hoisting ropes.
   b. Governor Cable:
      1) Minimum 3/8 inch steel.
      2) Secure ends to car safety operating mechanism.
      3) Pass over new governor sheave above and tension device in pit.

E. Compensation Cable:

1. Provide new compensation cables.
2. The existing compensation sheaves shall be retained. Clean and lubricate.
3. Provide new limit switches to prevent operation if the sheave approaches the upper and lower limit of travel.

F. Top-of-Car Operating Devices

1. Provide car leveling devices complying with the following:
   a. Car shall be equipped with a two-way leveling device to automatically bring the car to within +1/4-inch of exact level with any landing for which a stop is initiated regardless of load in car or direction of travel.
   b. Car shall, at all times, level into the floor and shall not stop above or below the floor and level back.

2-03 HOISTWAY AND CAR EQUIPMENT, (Cont'd.):

c. The automatic leveling device shall, within its zone, be entirely independent of the opening device and if the car stops short or travels beyond the floor, the leveling device shall automatically correct this condition and maintain the car within +1/4-inch of level with the floor landing regardless of the load carried and its stretching effect on the cables during loading and unloading.

d. A car-leveling device functioning through the medium of vacuum tubes or photo-electric tubes is not acceptable. Approved permanent magnet, electromagnetic or selector type leveling is required.

G. Retain Car Sling and Platform, New Safety:

1. Retain existing car sling, and platform.
   a. Car frame, auxiliary supports:
      1) Insure integrity of all structural steel members.
      2) Tighten to form rigid unit.
   b. Car Platform:
      1) Designed for Class of loading specified.
      2) Tighten steel frame or structural steel frame.
      3) Underside: Fire proofed with minimum No. __ USSG sheet steel.
      4) Mount on neoprene pads.
      5) Support pads with auxiliary steel, frame, fastened to car frame forming isolated cushion between car and frame.
      6) Substantial support member to prevent bowing.
   c. New self-setting safeties are required on the elevator as follows:
      1) Safety
         a) Type B, self-resetting.
         b) Activated by governor cable.
         c) Full load test and insure proper operation.
         d) Engage both sides of guide rails with equal force.

H. Load Weighing Device:

1. Provide new load weighing systems on the car crosshead deigned for a minimum of four load setting points.

2-03 HOISTWAY AND CAR EQUIPMENT, (Cont'd.):

2. Wire into door operator circuit the light and heavy point setting to distinguish between a heavily loaded with a lightly loaded. Heavily loaded car shall keep the door open longer to allow passengers in the rear of the car time to leave. Light and heavy point settings to be reviewed by Owner.

I. Guide Shoe Assemblies

1. Remove existing guide shoe assemblies for car and counterweight.
2. Provided new heavy duty, flexible spring loaded roller guide shoe assemblies for car and counterweight.
3. Provide protective covers on top guides.
4. Clean down all rails.
5. Balance each car for proper operation.

J. Worklights and Receptacles

1. Provide each elevator with suitable receptacle fitted with wire lamp guards on top of the car platform. A suitable plug receptacle shall be provided on top and bottom of car.

K. Counterweights

1. The present counterweight may be reused but shall be checked for proper counterbalance, car weight plus 40% of capacity, and weights shall be added or taken off as required to accommodate this additional weight. The Contractor shall modify the frame as required to accommodate the additional weight.
2. The counterweights shall be cleaned and all missing or damaged bolts, tie rods, frames, and members shall be replaced.
3. The Contractor shall perform all testing as required by Code to ascertain that the elevator is properly counterbalanced.

L. Pit Equipment

1. New stop switch for elevator shall be provided in elevator pit in accordance with ANSI 2.2.6.
2. Buffer: The existing car and counterweight buffer shall be retained, cleaned and tested.
3. All pit channel shall be retained, cleaned And painted.
4. Fully fill and enclose sump hole.
5. Pit area to be fully cleaned.

2-03 HOISTWAY AND CAR EQUIPMENT, (Cont'd.):

M. Door Timing Device

1. Provide a timing arrangement for door operation which is adjustable to conform to various types of traffic in and out of the elevator. Include the following requirements:
   a. Normal Operation: When the elevator stops in response to a corridor call, the door time shall be lengthened sufficiently to give the first waiting passenger time to reach opening before the door closes. Door open time shall then be reduced to accommodate all subsequent passengers. When the elevator stops in response to a car call, the door shall start to close immediately after the first passenger or a stream of passengers has left the car. The device shall distinguish between a heavily loaded and lightly loaded car by keeping the door open longer for heavy loads, to allow passengers in the rear of the car time to leave.

N. Electronic Door Safety Device

1. Electronic type with enclosed antenna located on leading edge of car door including tenite shield for entrance. Visual indication to be provided: 'green' on open; 'red' on close.
2. Three dimensional field detection zone option:
   a. Full height of door opening.
   b. Extend in from of car and hoistway doors.
   c. Diminishing with closing of doors when clear of obstruction.
3. When detection zone is interrupted, door:
   a. Shall be prevented from closing from fully open position.
   b. Shall stop and reverse from closing.
   c. Shall reopen only distance of detection zone.
   d. Shall resume normal closing speed when zone is cleared.
4. Door-open time: to be less for car button call stop than corridor button call stop.
5. Door prevented from closing for 20 seconds will cause buzzer to sound.
6. Detective operative when elevator is attendant operated.
7. Nudging shall be provided. <u>It shall not be activated unless at DMH's request.</u>

2-03 HOISTWAY AND CAR EQUIPMENT, (Cont'd.):

O. Electric Door Operator

1. Remove existing door operator, door clutch, contacts, hangers, tracks, etc. and replace with new equipment, conforming with the following:
   a. Provide car door with a high speed heavy duty, MOVFR electric door operator with hand held parameter unit and car door clutch, capable of operating a hoistway door and car door simultaneously from the closed to within 3-inches of full open position (or vice versa) at a speed of approximately one foot per second. The closing speed shall be slightly slower than the opening speed as herein before specified.
   b. The movement of the hoistway and car door shall be controlled simultaneously by the normal operation of the elevator controls. The door shall operate smoothly and without slam in both opening and closing directions. Each hoistway and car door shall be cushioned in its final movement in each direction of travel, either by regulated and adjustable power or by other equally effective approved devices.
   c. Electric power shall be required for proper door operation.
      1) Hand held parameter unit shall be property of the DMH and shall remain on site.
   d. The lever operating the door and support members such as header and tracks shall be constructed of heavy steel members. Al pivot points shall have ball or roller bearings of not less than 1-inch outside diameter with bronze brushed bearings of ample size with positive means of lubrication.
   e. In case of interruption or failure of the electric power from any cause, the mechanism shall be so designed that it shall permit manual operation of both the hatchway and car door and the corridor door shall continue during emergency operation to be self-locking.
   f. The door operators shall operate in conjunction with, or incorporate in their design, or be equipped with all interlocks or safety switches.
   g. Provide car entrance with an approved electrical contact arranged to prevent operation of elevator by normal operating devices, unless car doors are closed.
   h. Provide car door hangers and tracks of a design as specified for the hoistway door hangers.

2-03 HOISTWAY AND CAR EQUIPMENT, (Cont'd.):

i. Provide car door clutches compatible with the car door operator and hanger equipment.

P. Existing Cab

1. Floor, Car Sill and Toe Guard
   a. Flooring:
      1) Remove existing rubber floor and the sub-floor only if necessary.
      2) Substantial support members to be provided to prevent bowing.
      3) Sub-Floor (if required) minimum 3/4-inch thick marine grade plywood.
2. Floor covering:
   a. Non-slip rubber flooring.
   b. Approved underlayment material.
   c. Flooring to be a color as selected by the owner.
   d. Elevator Contractor to supply recommended brand samples.

3. Car sill:
   a. Remove existing car sill and replace:
      1) Install sill with approved nonslip surface.
      2) Extruded, aluminum finish.
      3) Length to accommodate door fully open position.
      4) Minimum thickness 7/16-inch.
      5) Grooves machine planed, minimum guide clearance.
      6) Machine rabbeted to receive new toe guard.
      7) Securely fastened to platform.
      8) Shimmed to level.
      9) Parallel to centerline of elevator guide rails.
4. Toe guard:
   a. Provide new toe guard
      1) Minimum No.16 USSG cold rolled sheet steel on entrance side.
      2) Full width of entrance.
      3) As required by code.

2-03 HOISTWAY AND CAR EQUIPMENT, (Cont'd.):

5. Existing cab doors:
   a. Refinish existing cab doors:
      1) Doors shall be sanded and cleaned in preparation for a new clean, smooth finish.
      2) Surfaces shall be electrostatically painted.
      3) Precautions shall be taken to prevent overspray.
      4) Color confirmed by owner.

Q. Hoistway Entrances:

1. The existing entrance frames and sills will be reused.
2. Existing frames shall be electrostatically painted.
   a. Included is entire frame including head jamb.
   b. Color confirmed by the DMH Project Manager.
3. Upgrades to door panels.
   a. Bottom of doors; with two demountable, adjustable, non-metallic guides to fit sill grooves.
   b. Provide hoistway safety retainers, top and bottom, in accordance with code. (A17.1: 2.11.11.8)
      1) The top and bottom of horizontally sliding doors shall be provided with a means of retaining the closed door panel in position if the primary building means fail, and preventing displacement of the door panel is subjected to a force of 1,125 lbf in the direction of the hoistway.
      2) The retaining means shall also withstand, without detachment or permanent deformation, a force of 225 lbf applied downward at any point along the width of the door panel.
      3) The retaining means shall not be subjected to wear or stress during normal door operation or maintenance.
   c. Install rubber bumpers on side opening doors and recessed astragals on center opening doors.
   d. Sight guards on door formed of No. 16 USSG cold rolled furniture steel. Finish to match doors.

2-03 HOISTWAY AND CAR EQUIPMENT, (Cont'd.):

R. Door Components:

1. Remove the present interlocks and replace. Provide each hoistway entrance with a new approved positive electro-mechanical interlock. Interlock shall prevent operation of elevator by normal operating devices, unless all hoistway doors are locked in closed position. Interlock shall also prevent opening of hoistway doors from landing side, unless car is within the landing zone and is either stopping or stopped. Interlocks shall be unlockable from elevator car in case of power failure. The interlock is to be as approved by Local Code.

2. Remove the present car and hoistway door hangers. Provide new hangers for car doors and hoistway doors of the heavy duty sheave type, consisting of two ball bearings sheaves not less than 1-1/4" diameter enclosed in heavy steel housings. Sheave wheels for hoistway door hangers shall be made of steel, complete with suitable sound reducing material other than rubber. All sheave wheels shall rotate in grease packed precision ball bearing. Each hanger shall be equipped with two ball bearings up thrust rollers not less than 1-1/2" diameter with eccentric adjustment.
3. Remove existing tracks and replace with new tracks. Tracks shall be of high carbon rolled or drawn steel, shaped and finished to permit free movement of sheaves.
4. Provide each hoistway entrance with a new sill mounted, spring type door closer.
5. Remove the present door guides and replace. The bottom of the doors shall be furnished with new demountable roller guides to run in the sill grooves with a minimum clearance to insure quietness of operation. A minimum of two guides shall be placed on each door panel. The guide mounting shall permit the easy replacement of guides without removing the door from the door hangers. Guide inserts shall be provided with metal retainers to hold doors in position if synthetic guides are destroyed by fire. Guides to be mounted on both the car and hall door panels.
6. All missing door cover plates shall be replaced. Cover plates shall be made of minimum No. 14 USSG steel and shall match the existing. All other existing cover plates shall be cleaned and painted.

2-03 HOISTWAY AND CAR EQUIPMENT, (Cont'd.):

S. Hoistway Access Switches

1. Provide new key-operated top and bottom of hoistway access switches which shall permit limited movement of the car at top and bottom landings for hoistway and car door opening and car positioning as dictated by code.
2. The switch shall be operative only when the inspection switch in the car operating panel is in "INSPECTION" position.
3. Car travel provided by the access switch shall be limited to the extent of hoistway door opening. Automatic operation of the elevator, or car and hoistway doors, shall be inoperative when the hoistway access switch is in use.
4. The access key switch fixture shall be located in door frame. Finish shall be satin stainless steel. Switch shall be cylinder type having at least five pins or discs and shall be spring return to the "OFF" position.
5. Key shall be different from all building keys and shall be keyed identical to elevator inspection switch key.

T. Identification:

1. Identification of equipment.
   a. Provide in accordance with ANSI 17.1, Section 2.29.
2. Identification of Floors
   a. Provide floor numbers on the hoistway side of the hoistway doors and/or walls at every floor.
3. Data Plates:
   a. All data plates and tags shall be provided as required by code.

U. Cleaning, Patching and Painting

1. All hoistways, pits and machine rooms shall be thoroughly cleaned.
2. All holes left as a result of the rehabilitation work shall be neatly patched and painted.
3. All existing holes in machine room shall be patched and filled and where required, properly fire rated.
   a. All contractors are responsible for work affected by their contract.
4. At the completion of all work paint machine room floor.

2.04 OPERATION AND PANEL FIXTURES

A. The existing car operating stations, as noted, shall be removed and replaced with new equipment and comply with the following. Main and Auxiliary shall be identical in size. All lights for buttons and signals to be LED. All fixtures and buttons to be tamperproof, vandal resistant design. There shall be no plastic lenses. Buttons shall contain center jewel illumination.

1. Faceplates:
   a. The faceplates of all hall fixtures shall be designed for flush mounting, as applicable (surface mount acceptable). All levels shall be stainless steel Class 302 with a No. 4 satin finish, beveled edge design, and not less than 1/8-inch thick. Car operating panels shall be No. 4 satin stainless steel finish.
   b. Attach faceplates with spanner type security screws.
   c. All unused or obsolete elevator boxes in lobby shall be removed and area shall be patched and painted.
   d. Provide on all faceplates, engraved signage. There shall be no applied signage.
2. Pushbuttons:
   a. Pushbuttons in hall button stations shall have contacts and wearing parts of materials sized to meet requirements of elevator service. Buttons shall be so designed that a spring will take up the initial pressure when contact is made further pressing shall seat the button on or in the faceplate. (Note: car operating panel to be updated only as necessary to meet the proposed standards.)
   b. Landing call buttons shall also serve as registered call signal indicators, and shall have their function indelibly and legibly identified.
   c. Landing call buttons shall contain UP and DOWN indications. When a landing call button is operated, the button shall illuminate to indicate that the call has been registered. The signal shall be extinguished when the car has served the registered call.
   d. All lights shall be LED.
   e. Hall buttons shall be tamperproof vandal resistant type, positive stop design as approved. (Car buttons shall be upgraded if they do not meet this standard.)
3. Boxes:
   a. Provide a sheet metal containing box for each fixture with sufficient knockouts, and grommets to receive cable. Box shall be minimum No. 12 USSG and adequately reinforced.

2.04 OPERATION AND PANEL FIXTURES, (Cont'd.):

4. Provisions for the Handicapped:
   a. Arabic numerals and Braille Symbols: Provide raised Arabic numerals 5/8" in height and Braille Symbols corresponding to the numerals on the elevator buttons located immediately left thereof. The Braille Symbols shall be placed to the left of the corresponding raised Arabic numerals, or where space does not permit, the Braille symbols, including door open, door close, emergency alarm, emergency bell, emergency stop and telephone. (Note: This applies only in areas where this system does not already currently exist.)

B. Car Position Indicator

1. Existing car position indicator will be removed only if it doesn't meet the new standards.
2. Furnish new digital indicators in car operating panels as required.

C. Car Lanterns

1. New car traveling lanterns, vandal proof and provided with LED lighting.
   a. No plastic lenses.
   b. Lanterns to be provided and flush mounted in each location where there is currently a fixture.
   c. Finish to be #4 Satin "Stainless Steel.

D. Voice Annunciation:

1. Provide voice annunciation for floor and direction of travel as standard requirements.

E. Hall Pushbutton Stations:

1. The existing hall pushbutton station faceplate and box on all floors shall be removed and replaced with new. New Call buttons shall be centered at 42" above the finished floor. All lights to be LED.
   a. All non-used button and fixture stations shall be removed from existing location.
      1) All wiring shall be removed.
      2) Any non-used areas shall be covered with #4 satin stainless steel panels.
   b. New hall stations shall be located between elevators.

2.04 OPERATION AND PANEL FIXTURES, (Cont'd.):

c. One (1) Station at Main Landing shall include push button, Firefighter's service and emergency generator jewel.
   1) One station at each landing for the elevator.
d. Existing Firefighter's Service Key Switch panel at first floor landing shall be removed.

2. Pushbuttons are to be tamperproof, vandal resistant design. Fixtures at all levels shall be finished in No. 4 satin stainless steel.
   a. Fixtures to be surface mount, satin stainless steel finish beveled edges.

3. All faceplates to be sufficiently over-sized to fully cover openings. It is the intent to eliminate any patching.
4. Firefighters' key switch, visual signal for firefighter's service and engraved signage shall be provided in the hall station at first floor level. Include visual indicator for emergency power.
5. Provide 'In case of Fire' signage in each fixture.
   a. Signage to be engraved.
   b. Provide in accordance with MA 534 CMR.

F. Firefighters' Recall Key Switch

1. Three position fire service key labeled "Fire Recall" shall be provided within one new hall pushbutton station as the main, designated level.
   a. Included also is illuminated fire hat visual signal and required signage, properly engraved.

G. Emergency Power

1. An illuminated signal engraved "Elevator Emergency Power" shall be provided on main floor push button station fixture to indicate that the normal power supply has failed and the emergency standby power is in effect.
   a. Lettering to be in accordance with code.
   b. Lettering to be engraved.
2. Illuminated visual signal to be provided in Annunciator Panel.

H. Unused fixtures:

1. Any unused fixtures shall be removed.
2. Wall areas to be covered with #4 satin stainless steel plates.
3. As applicable, all holes in lobby areas as a result of the completion of the work shall be neatly patched.
4. Painting shall blend into existing wall area.

PART 3 – EXECUTION

3.1 INSTALLATION

A. All work performed shall be by competent, licensed and experienced personnel in their respective trades. All workmanship and materials shall meet the Commonwealth of Massachusetts Board of Elevator Regulations 524 CMR, including modifications as well as ASME A17.1 and all applicable codes.

B. Lobby areas, hoistway and adjoining areas shall be properly guarded and protected during modernization.

C. Painting

1. Paint:
    a. Best grade for purpose; rust inhibitive.
    b. Deliver in original sealed containers.
    c. Provide SDS sheets.
    d. Apply in accordance with manufacturer's instructions.
    e. Color: as directed by DMH Project Manager.
2. Preparation:
    a. Clean, de-grease, de-burr.
    b. Repair scratches and other damage in field. Use same prime and finish materials.
        1) Touch up painting shall be extended sufficiently to insure neat appearance.
            a) Entire wall area to be painted if necessary to produce proper results.
        2) Paint shall be in a color to blend and match existing.
3. Structural steel, miscellaneous iron or sheet metal:
    a. Factory paints one shop coat of manufacturer's standard rust-resistant primer.
    b. Remove all rust, dirt, etc.
    c. Prime as required. Provide two finish coats of brushed on industrial enamel paint. Galvanized metal need not be painted.
4. All unused or obsolete equipment such as wiring, conduit, electrical boxes, etc. is to be removed. All remaining holes shall be neatly patched and painted in a color to blend and match existing paint finish.
5. All holes in elevator lobbies resulting from removal of fixtures, and boxes shall be neatly patched and painted.

3.1 INSTALLATION, (Cont'd.):

6. Holes left in walls and/or floors as a result of removal of existing equipment shall be neatly patched and painted as noted below:
   a. Painted surfaces of any existing wall and ceiling which are damaged by work of this project shall be touched-up with at least two coats of paint in color to blend and match existing paint finish.
7. All areas including walls, elevator frames and finishes to be fully wiped clean.
8. Machine room floor to be painted.
9. Provide MSDS for all paint and solvents.

3.2 ADJUSTING AND CLEANING

A. All equipment shall be adjusted and tested, prior to final testing, to insure peak operation from all equipment.

B. Cleaning:
   1. Brush, clean work prior to concealing and painting. Perform in stages, if directed.
   2. Remove debris, from inside and outside, of materials and equipment.
   3. All equipment shall be cleaned prior to final inspection.

3.3 FIELD QUALITY CONTROL

A. Tests:
   1. Perform as required by Code and as hereinafter noted and in presence of:
      a. State Elevator Inspector.
      b. Authorities having jurisdiction.
   2. Provide required labor, material, equipment and connections.
   3. Document results and submit for approval.
   4. Repair or replace defective work, as directed.
   5. Pay for restoring or replacing damaged work of others, due to tests, as a result of the Contractor's negligence.

3.3 FIELD QUALITY CONTROL, (Cont'd.):

B. Final Inspection:

1. When all work is completed, and tested to the satisfaction of the Contractor, the Contractor shall notify DMH Project Manager in writing that the elevator is ready for final inspection and acceptance test. The Contractor shall notify the Department of Public Safety of the completion of all work. A testing and inspection date shall then be arranged by the state who will notify the Contractor of the same. The proper operation of every part of the elevator system and compliance with contract requirements, including compliance with all applicable requirements by Code, shall be demonstrated to the State Elevator Inspector. Furnish all test instruments and materials, required for inspection. The Contractor shall perform the following tests on the elevator at the time of final inspection:

   a. Test period:
      1) The elevator shall be subjected to a test for a period of one hour continuous run, with full specified load in the car. During the test run, the car shall be stopped at all floors in both directions of travel for a standing period of 10 seconds per floor.

   b. Speed Load Tests:
      1) The actual speed of the elevator car shall be determined in both directions of travel with full contract load and with no load in the elevator car. Speed shall be determined by applying a tachometer to the car hoisting cables. The actual measured speed of the elevator car with full load in the UP direction shall be within 5 percent of rated speed. The maximum difference in the actual measured speeds obtained under the various conditions outline between the "UP" and the "DOWN" directions shall be checked.

   c. Car Leveling Tests:
      1) Elevator car leveling devices shall be tested for accuracy of landing at all floors with no load in car, symmetrical load in the car, and with full load in car, in both directions of travel. Accuracy of floor landing (plus or minus 1/4 in.) shall be determined both before and after the full-load run test.

3.3 FIELD QUALITY CONTROL, (Cont'd.):

d. Dynamic System Balancing Test:
   1) The car and counterweight suspension system shall be dynamically balanced so that the total weight of the counterweight and its frame shall be equal to the total weight of the unloaded car and its sling plus 40 percent of the contract load with an accuracy of plus or minus 50 pounds.

e. Full-Load Elevator Safety Test:
   1) Full-Load elevator safety test shall be performed as required by Code. A metal tag shall be attached to the safety-releasing carrier and the governor in a permanent manner, giving the date of the safety test, type of safety test and the name of the firm who performed the test.

f. After completion of the required safety test as hereinbefore specified, submit and post Certificate of Use.

C. Pre-test and final System Tests for Smoke Detection/Elevator Recall and Emergency Generator Operation: After work is completed, conduct a pre-test, as well as a final test of entire system as related to the elevators with Fire Alarm Company for the Building Alarm System. The final test shall be conducted in the presence of the State Elevator Inspector.

1. The Contractor is responsible for his direct costs associated with the pre-test and final test including but not limited to labor, permits and all testing equipment.
2. Contractor shall be responsible for building fire alarm contractor and emergency generator contractor (for new generator system).

D. Re-inspection:
1. If any equipment is found to be damaged or defective, or if the performance of the elevator does not conform to the requirements of the contract specifications or the Safety Code, no approval or acceptance of elevators shall be issued until all defects have been corrected. When the repairs and adjustments have been completed and the discrepancies corrected, the DMH Project Manager shall be notified and the elevator will be re-inspected. The rejected elevator will not be used until it has been re-inspected and approved.

3.3 FIELD QUALITY CONTROL, (Cont'd.):

2. If deficiency is due to the elevator or elevator operation or related work under the direct jurisdiction of the Contractor, the Contractor shall be responsible for all related re-inspection fees and labor including costs for DMH's related work contractors.

******END OF SECTION******

SECTION 142101
CONTRACTUAL MAINTENANCE SERVICE

PART 1 – GENERAL

1.1 CONTRACT REFERENCES

A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within Division 1 – GENERAL REQUIREMENTS that are hereby made a part of this Section of the Specifications.

B. Equality of material, article, assembly or system other than those named or described in this Section shall be determined in accordance with the provisions of the CONTRACT and GENERAL CONDITIONS.

1.2 DESCRIPTION OF WORK

A. Work included: Provide labor, materials and equipment necessary to maintain the passenger and freight elevators under a full preventive maintenance program during the Contract period and for one year after substantial completion.

1.3 WORK UNDER CONTRACT

A. The full preventive maintenance service contract included in this specification will cover the elevators and shall take effect 30 days after the Signing of the Contract or on a date as mutually agreed upon by the Contractor and DMH.

B. The Contractor shall be required to make monthly inspections of the passenger and freight elevators. Such inspections shall take place on the first and third Wednesday of each month, a minimum 1-1/2 hours for each inspection.

C. Elevator Contractor shall furnish full preventive maintenance/warranty service and 24-hour emergency call-back service on her elevator equipment continuing without interruption for a period up to and including the final one (1) year full preventive maintenance/warranty period after completion of the elevator upgrades.

D. During the term of the warranty period, prior to the expiration of the Certificate of Use, annual state safety testing and posting of the new Certificate of Use issued by the Department of Public Safety shall be completed.

1.3 WORK UNDER CONTRACT, (Cont'd.):

1. Included in the scope of work after modernization acceptance testing and issuance of the Certificate of Use, is one (1) annual state test of both elevators during the final one year warranty period.

E. All regular maintenance work shall be performed during regular working hours of regular working days. The full preventive maintenance/warranty period covering the elevators is included in the scope of this contract.

F. The contractor shall furnish full maintenance service and 24-hour emergency call-back service on the elevators. All regular maintenance work shall be performed during regular working hours of regular business days.

1. This elevator maintenance shall include systematic examinations and adjustments and lubrication of all elevator equipment. The Contractor shall also repair or replace electrical and mechanical parts of the elevator equipment whenever this is required, and shall use only genuine standard parts produced expressly for the equipment concerned. Renewals or repairs necessitated by reason of negligence or misuse of the equipment or by reason of any other cause beyond the control of the Contractor, except ordinary wear and tear, shall not be the responsibility of the Contractor.

2. All work under this maintenance provision shall be performed by MA licensed elevator personnel under the supervision and in the direct employ of the Elevator Contractor. Work shall be performed during the regular working hours and days of the Contractor. Emergency straight-time call-back service shall be available at all times at no additional cost to the Owner. The Contractor shall respond to an emergency call-back service within one hour on site. The Contractor shall respond to entrapments in less than or no more than one hour on site.
    a. This contract includes emergency and minor adjustment call back service during normal business hours and during overtime.
3. The Contractor shall be able to show that he has had successful experience in the complete maintenance of elevators, employs competent personnel to handle this service, locally maintains an adequate stock of parts for replacement or emergency purposes, and has qualified MA licensed personnel available at such places to insure the fulfillment of this service without unreasonable loss of time in reaching the job site.

1.3 WORK UNDER CONTRACT, (Cont'd.):

4. This maintenance service shall be performed solely by the Contractor and shall not be assigned or transferred to any agent or sub-contractor.
5. Response time to regular call-backs during regular work days shall be two (2) hours.
6. Response time to all emergency call-backs shall be one (1) hour.
   a. One (1) hour or less response time, 24 hours/7 days a week, for Emergency Calls due to entrapments.
      1. Contractor to maintain regular communication with Owner or Agent to report on status of arrival at site.

G. Full Service Preventive Maintenance Program on both Elevators detailed in these specifications shall consist, but not be limited to the following:

1. Monthly, a minimum of three (3) hours, and systematically examine, adjust, lubricate, clean and when conditions warrant, repair or replace, including but not limited to, the following items and all other mechanical or electrical equipment:

   a. Machine: geared components drive sheave, deflector sheaves, brake, brake liners, brake pulley, brake coil, brake pins, brake contacts, linings, and other machine brake components.
   b. Properly maintain Rope Gripper and replace brake liners in accordance with Manufacturer's recommendations. Security set screws to be in place when performing maintenance on or working on an opened Rope Gripper. Security set screws to be properly stored when Rope Gripper is active.
   c. Motor and Drive: motor windings, rotating elements, commutators, brushes, brush holders, bearings, field coils, rotators, stator slip rings.
   d. Solid state drive components and isolation transformers.
   e. Controller, Selector, and Dispatching Equipment: all components, resistors, condensers, transformers, contacts, leads, dashpots, computer devices, selector switches, mechanical or electrical driving equipment, coils, magnet frames, contact switch assemblies, springs, solenoids, resistance grids, hoistway vanes, magnets and inductors.
   f. Governor, tension sheave and governor rope.
   g. Hoistway door interlocks and locks and contacts, hoistway door hangers, and tracks, bottom door gibs, cams, rollers, and auxiliary door closing devices. Chains, tracks, cams and sheaves.

1.3 WORK UNDER CONTRACT, (Cont'd.):

h. Hoistway unlocking components and hoistway safety retainers.

i. Hoistway limit switches, slowdown switches, leveling switches and associated cams, vanes, and electronic components.

j. Guide shoes including rollers or replaceable gibs.

k. Automatic power operated door operators, door protective devices, car door hangers, tracks, door clutch, car door contacts, and door rollers.

l. Traveling cables.

m. Compensation.(As required).

n. Elevator control wiring in hoistway and machine room.

o. Under car safety system.

p. Buffers.

q. Fixture contacts, push buttons, key switches, locks, lamps and sockets of button stations (car and corridor), lanterns, position indicators (car and corridor), direction indicators.

r. Emergency lighting including battery replacement.

s. The guide rails shall be kept free of dust. Where roller guides are used rails shall be kept dry and properly lubricated when sliding guides are used. Renew guide shoe rollers and gibs as required to insure smooth and satisfactory operation.

t. Examine, and make necessary adjustments or repair to the following accessory equipment including relamping of signal equipment: hall lanterns, car position indicators, car stations, electric door operators, interlocks, door hangers, door safety equipment.

u. Visually examine monthly all safety devices and governors and conduct an annual no load test. All tests shall be performed in accordance with the provisions of the American National Safety Code for Elevators and Escalators, ANSI/ASME A17.1, Current Edition and MA 524 CMR, including all modifications.

1) During the warranty period, conduct one (1) annual state safety test for each elevator.

v. Replace all wire ropes in accordance with the provisions of the American Standard Practice for the Inspection of Elevators – ANSI A17.2, Current Edition – to maintain an adequate factor of safety. Equalize the tension on all hoisting ropes. Shorten ropes as required.

w. Emergency telephone: Telephone should be tested monthly.

1.3 WORK UNDER CONTRACT, (Cont'd.):

x. Repair or replace conductor cables and hoistway and machine room elevator wiring.

y. Monthly firefighters' testing in accordance with A17.1-2004, 8.6.10.1: "All elevators provided with firefighters' emergency operation shall be subjected monthly to Phase I Recall by use of the key switch and a minimum of one-floor operation on Phase II." Results of test are to be maintained and provided to Owner if requested.

z. Maintain all elevator equipment in hoistways, machine room, and pits in a clean and orderly condition, free of direct dust and debris.

aa. Furnish lubricants compounded specifically for elevator usage.

bb. All bulb replacement for indicators and signals.

cc. The Contractor shall check the dispatching system and make necessary tests to insure that all circuits and time settings are properly adjusted and that the system performs as designed and installed.

H. Schedule of Preventive Maintenance Work for Traction Elevators

1. The required full preventive maintenance detailed herein is considered the minimum for all equipment. The reference utilized for the basic preventative maintenance tasking is A17.1 Section 8 as modified by MA 524 CMR Section 35.00.
2. If specific equipment covered by this contract requires additional preventive maintenance for safe reliable operation, as specified by the manufacturer, the Contractor shall perform the required additional preventive maintenance without cost to the Owner.

I. The elevator Contractor shall be required and shall receive additional compensation to install new attachments or to make any replacements with parts of a different design on the elevator as recommended or directed by insurance companies or by governmental authorities. The contractor shall not be required to make renewals or repairs necessitated by reason of negligence or misuse of the equipment or by reason of any other cause beyond the Contractor's control except ordinary wear and tear unless the Contractor receives just compensation.

J. All work is to be performed during regular working hours of regular working days. Emergency calls shall be answered at all hours of the day or night and emergency call back response to be within one (1) hour on-site from dispatch of call. Entrapments will be handled with highest priority with response one (1) hour or less.

1.3 WORK UNDER CONTRACT, (Cont'd.):

K. The Contractor shall check the dispatching system and make necessary tests to insure that all circuits and time settings are properly adjusted and that the system performs as designed and installed.

M. Repair Work.

If either elevator requires major repairs, the Contractor must bring to the attention of the Owner the necessary repairs and submit a written estimate outlining the costs of the materials, parts and labor broken down separately, along with the proposed time requirement to complete the repair work. The Contractor must receive approval of the proposed repair work, from the Owner, before moving forward with the scope of work. The Owner does retain the right to call for additional quotations from other vendors based upon the projected costs to do the repairs and has the option of awarding the work to the lowest bidder.

N. Maintenance Responsibility

1. The Contractor shall keep the elevators maintained to operate at the original contract speed, keeping the original performance time, including acceleration and retardation as designed and installed by the manufacturer. The door operation shall be adjusted as required to maintain the original door opening and door closing times, within legal limits. The freight elevator shall be maintained at a similar performance level as it has in the past based upon as designed and installed by the manufacturer.
2. The Owner reserves the right to make inspections and tests as and when deemed advisable. If it is found that the passenger elevator and associated equipment, that was part of the upgrades, are deficient either electrically or mechanically, the Contractor will be notified of these deficiencies and it shall be his responsibility to make the necessary corrections within thirty days of notice. The freight elevator will need to be fully inspected if there are electrical or mechanical deficiencies found and there will need to be an assessment made as to how to proceed forward. In the event that the deficiencies pertaining to the passenger elevator have not been corrected within the thirty days, the Owner may terminate the contract and employ a Contractor to make corrections at the original bidder's expense.

1.3 WORK UNDER CONTRACT, (Cont'd.):

3. Approximately three months prior to the end of the warranty and/or contract term, the Owner may make a thorough maintenance inspection of all elevators covered under the contract. At the conclusion of this inspection, the Owner shall give the Contractor written notice of any deficiencies found. The Contractor shall be responsible for correction of these deficiencies within 30 days after receipt of such notice.

O. General Reporting Requirements

1. The Contractor shall maintain a log of all preventive maintenance services performed and submit a copy of same to the Director of Maintenance on a monthly basis, including the time spent on such services.
   a. The Contractor shall maintain a master log of all reported trouble calls and shall submit a copy of same to the Director of Maintenance on a weekly basis.
2. The Contractor's mechanic(s) shall sign in at the maintenance office prior to commencing repair and/or call-back service. When work is completed and mechanic is leaving the facility, he will sign out at the maintenance office and leave a copy of the work voucher describing the nature of the work performed.

******END OF SECTION******