

ELEVATORS

NOTE: General and Special Conditions govern all work specified herein.

1. SCOPE

a. The work to be performed under this section of the specification shall consist of the complete furnishing and installation of Passenger Elevators #1 and #2 in the Nottingham Building, Towson, Baltimore County, Maryland. Include all labor, materials, tools, equipment and services necessary.

2. GENERAL

- a. These specifications are intended to cover the complete installation of the elevator equipment except as specified under "Work Not Included", in a first-class workmanlike manner and to include all work and material in accordance with the drawings, specified and to the approval of the Architect and Engineer.
- b. This work shall be done in accordance with the requirements of the National Electrical Code and the American Standard Safety Code for elevators, Dumbwaiters and Escalators including all revisions and authorized changes in effect on date of this specification, and any local codes which may govern the requirements of the installation.
- c. In all cases where a device or part of the equipment is herein referred to in the singular number, it is intended that such reference shall apply to as many such devices as are required to complete the installation.
- d. The submission of a proposal will be considered as an acceptance of all the requirements of the general conditions, drawings, specifications and conditions at the building site unless the proposal is accompanied by written exceptions.
- e. All terms in these specifications shall have the meaning as defined in the American Standard Safety Code for Elevators as approved by the American Standards Association and referred to as the A.S.E. Code, including all revisions and authorized changes in effect on the date of this specification.

3. DRAWINGS

- a. Before beginning work prepare all drawings necessary to show general arrangements, space requirements, loads imposed on the building structure by the equipment, and such other drawings as are deemed necessary.
- b. The Contractor shall submit shop drawings to the Architect and Engineer for approval before fabrication of all equipment to be furnished.
- c. Approval of shop drawings will be general and shall not relieve the Contractor from the responsibility for proper fittings and construction of the work, nor from furnishing materials and work required by the Contract which may not be indicated on the shop drawings when approved.
- d. Any equipment to be approved as an equal to the equipment specified shall meet the specified requirements in all aspects of design, space requirements, electrical characteristics, power consumed and function.
- e. Drawings shall be submitted in sets of six (6).

4. PAINTING

a. All exposed metal work furnished under this specification, unless otherwise specified, shall be properly painted one shop coat and one coat after installation.

5. INSPECTION FEE AND PERMITS

- a. Obtain and pay for all necessary Municipal, County or State Elevator Inspection and Permits as required; also make such tests as called for by the regulations of such authorities. Certificate of the Board of Fire Underwriters shall also be included.
- b. Furnish all necessary certificates other than the operating certificate required by all authorities having jurisdiction.

6. GUARANTEE

a. The Contractor shall guarantee that the materials and workmanship of the apparatus installed by him under this specification are first-class in every respect and that he will make good any defects not due to ordinary wear and tear or improper use or care, which may develop within one year from date of acceptance, for temporary or permanent use.

7. WORK AFFECTING OTHERS

a. Report to the Architect and Engineer errors or deficiencies which affect the installation of this work in proper time to prevent delay. Furnish and designate the location of all necessary rope sleeves in all concrete forms prior to pouring, and furnish and designate inserts for brick or concrete walls. Mark or otherwise properly locate any chases or openings required in masonry work when being laid or opened.

8. WORK NOT INCLUDED UNDER THIS SECTION

- a. Preparatory work in conjunction with the elevator installation which is not a part of this section is as follows:
- (1) Suitable access to the building.
 - (2) A complete legal and plumb hoistway.
 - (3) Elevator pits with drains or waterproofing.
 - (4) Properly lighted and ventilated fire resistive machine room or penthouse including concrete floors and access doors to same.
 - (5) Supports to carry the loads for all equipment.
 - (6) Grouting under hoistway entrance sills.
 - (7) Concrete machine foundations where required.
 - (8) Electric feed wires to elevator control panel including main line circuit breakers.

- (9) Hoistway outlets for car light and machine room outlet for elevator signal equipment.
- (10) Power for construction, testing and adjusting elevator equipment.
- (11) Guarding and protecting the hoistway.
- (12) All cutting of walls, floors, partitions, together with any repairs made necessary thereby.

9. MAINTENANCE:

- a. Furnish maintenance on the entire elevator equipment described herein for a period of twelve (12) months after the completion of the work. This maintenance shall include weekly systematic examination, adjustment and lubrication of all elevator equipment. Repair or replace electrical and mechanical parts of the elevator whenever this is required and shall use only genuine standard parts produced by the manufacturer of the equipment concerned. All wire ropes shall be replaced as often as necessary to maintain an adequate factor of safety. 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 Supplier, except ordinary wear and tear, shall not be the responsibility of the Supplier.
- b. All work under this maintenance provision shall be performed by competent personnel. Emergency call back service shall be on a 24-hour basis, 365 days per year. No charge shall be made for Emergency Call Back Service except for premium time expended, that is in excess of two hours for one mechanic.
- c. The maintenance service shall be performed solely by the manufacturer and shall not be assigned or transferred.
- d. In addition, the Contractor shall furnish during this period all required verbal and written instructions to the Owner's operators and maintenance men. Notice of each inspection shall be given so that Owner's personnel may be present. Complete wiring diagrams, repair parts catalogs, instruction manuals and lubrication charts shall be furnished and left on the job for use by the Owner's personnel.

10. QUALIFICATIONS

- a. All elevator machines, controllers and associated equipment shall be in strict accordance with specification requirements and of highest quality and grade of new materials. Elevators shall be smooth and safe in operation and the product of individuals, firms, or corporations regularly engaged in the business of manufacturing high grade elevators, and possessing sufficient financial responsibility, technical ability, shop equipment and technical organization, etc., and who have demonstrated their ability to design and construction elevators of the type covered by these specifications.
- b. Controlling apparatus, including motors, motor generators and control panels, must be products of the elevator manufacturer except that use of motors and motor generators which are products of another manufacturer of established reputation will be permitted provided such items are constructed at direction of, or are based on specifications of the elevator manufacturer to insure proper and coordinated operation of above-mentioned items in connection with elevators.
- c. Shop facilities of elevator manufacturer whose machinery is proposed to be used must be such as to insure manufacture and installation of elevators in sufficient time to insure completion within contract time.
- d. The elevator manufacturer must also have and maintain as of the date of this specification a fully organized and competent Maintenance and Service Department in the City of Baltimore.

11. TEMPORARY USE

- a. Should the service of any elevator be required before final completion, the Contractor shall be reimbursed for any additional work or equipment required for temporary use. This shall include costs for power, operation, maintenance of the equipment and any required replacements or repairs to restore the elevator equipment to new condition.
- b. Such temporary use shall be done in accordance with requirements of governing Code. The Contractor shall make such available for temporary use after the manufacturers temporary acceptance form has been signed by a duly authorized party.
- c. Include also the cost of furnishing and installing temporary wood linings on walls, floors and ceiling, suitable entrances to elevator enclosures and erection of any additional barriers.
- d. Cars, equipment, rails and shafts shall be cleaned and put in new condition to the satisfaction of the Engineer after temporary use.

12. POWER SUPPLY

- a. The power supply will be 480 volts, 3-phase, 60 cycles. The lighting supply will be 120 volts, single phase, 60 cycles.
- b. Control supply will be 480 volts, three phase, three wire, 60 cycles.

13. OUTLINE OF EQUIPMENT

- a. Passenger Elevators #1 and #2.
- Quantity: Two (2)
Capacity and Speed: 2500# @ 300 F.P.M.
Travel: Ground floor to 6th floor about 71'-0"
Stops and Openings: Seven (7) stops, seven (7) openings in line.
Control: Generator field control with two-way automatic self-leveling.
Operation: Duplex, selective, collective automatic push button, without attendant and with independent service.
Machine: Overhead geared traction.
Car Platform: 7'-0" wide by 5'-0" front to back.
Car Enclosure: As specified herein.
Safety & Buffers: Flexible guide clamp safety, oil buffer or Type "C" with Type "A" safety with oil buffer.
Hoistway Doors: Single speed center opening, clear opening 4'-2" wide x 7'-0" high.
Door Operation: Automatic power operation for car and hoistway doors.

Push Button Riser: One (1) between cars.
Signals: Illuminated car and hall push buttons, hall position indicators first floor, car position indicator car direction arrow fixture each car, telephone cabinet, alarm bell.

14. MACHINE BEAMS, BUFFER BRACES, ETC.

- a. Furnish necessary beams for machine, governors, rope hitches, and necessary braces for buffers and compensating cable sheaves when used.
- b. Furnish ladders to pit and buffer platforms as required by Code.
- c. Furnish and install inserts as required for guide rails.

15. SLEAVES AND SUPPORTING BEAMS

- a. Provide all deflector sheaves necessary to obtain the proper lead of the ropes to car and counterweight. Sheaves shall be cast iron, accurately machined and grooved for the diameter of ropes used and supported by steel beams or channels furnished in place by the Contractor.
- b. When deflector sheave extends below the bottom of machine beams, a substantial metal guard shall be provided below the sheave and attached to the sheave supports.

16. MACHINE LOCATION AND FOUNDATIONS

- a. The elevator machines shall be placed directly over the hoistway, mounted on structural steel beams or channels furnished in place, with any necessary bearing plates, by the Contractor. These beams or channels shall be securely fastened to the supports which will be provided by others.

17. MACHINES

- a. The machines shall be of the single worm geared traction type with motor, brake, gearing and driving sheave mounted in proper alignment on a cast iron or structural steel bedplate. The brake shall be spring applied, electrically released and designed to be instantly and automatically applied in the event of power failure. The worm shall be of steel, integral with the worm shaft and provided with a ball bearing thrust designed to take the end thrust of the worm in both directions. The worm gear shall be hobbled from a bronze rim which shall be accurately fitted and bolted to the gear spider. The driving sheave shall be grooved for the proper number and size of hoist ropes and so designed as to maintain constant traction. The roller or anti-friction metal bearings shall include adequate means for lubrication.

18. SOUND REDUCING

- a. The Contractor shall provide necessary sound reducing materials, preferably rubber pads of proper density, to effectively isolate the machine from the machine beams or flooring.

19. DRIVE MOTORS

- a. The motors shall be direct current type designed to develop high starting torque with a low starting current. The motor shall be suited in all respects to the generator field control used and capable of meeting the requirements of elevator service.
- b. The motors shall be rated in accordance with IEEE standards for 50°C, 30 min. rated motors and shall have capacity to operate with contract load at rated contract speed without overheating.

20. CONTROL SYSTEM

- a. A control system shall be furnished to govern the starting, stopping and direction of travel of the elevator. The system shall be of the generator field control type in which control is primarily accomplished by the use of an individual generator for each elevator with which the voltage applied to the hoisting motor is adjusted by varying the strength and direction of the generator field.
- b. Control equipment shall be full magnetic, shall be suitable for the motor specified and the type of operation specified herein after and shall provide smooth acceleration and retardation.
- c. In stopping, the elevator shall be slowed down by regenerative or dynamic braking before the brake is applied.
- d. The control system shall include a motor generator set, electro-magnetic starter and suitable controller which shall apply uniformly varying direct current voltage to the hoisting motor. The motor generator set shall consist of a separately excited generator of proper characteristics for the hoist motor, a motor suitable for the supply voltage specified above and an exciter (if required). The armature of the motor, generator and exciter, where used, shall be mounted on a single forged steel shaft and the entire armature assembly shall be statically and dynamically balanced to insure a smooth running, quiet motor generator set.
- e. Excitation for the hoist motor and the generator shall be supplied by an exciter or other suitable means. The exciter if used may be part of the motor generator set or a separate exciter set may be applied.
- f. The requirements of the A.I.E.E. rules for Class insulation 50°C. rise and Class B insulation 60° rise continuous sets shall be followed.
- g. The motor generator set shall be equipped with two sleeve type or ball bearings with automatic lubrication and properly designed seals to prevent oil leakage.
- h. The motor generator set shall be mounted on rubber isolation pads to minimize transmission of vibration to the building.
- i. The motor generator starter shall be full magnetically operated reduced voltage type Wye-delta with the necessary accelerating and running switches and three overload relays. Protection shall also be provided against phase failure and phase reversal. The starter may be separate or incorporated in the controller.

j. For automatic operation of the elevator the control system shall be equipped with a timing device which shall automatically shut down the motor-generator set a predetermined time after the elevator has answered the last registered call. The subsequent pressing of a car or corridor button shall automatically start the motor-generator set.

k. The difference in speed of the elevator between full load and no load shall be limited to not more than 5% of the contract speed, which shall be the specified speed at full load.

21. CONTROLLER

- a. The controller shall be designed to give the required operation as hereinafter specified. Panels, where used, shall be non-hygroscopic ebony asbestos or other approved material, and shall be securely mounted on a substantial self-supporting steel frame designed for floor mounting.
- b. The switches handling power circuits shall be equipped with contacts designed to prevent fusing and relays shall be constructed so dust and dirt will not materially interfere with their operation.
- c. Controller shall also apply the brake if any of the safety devices operate or the power fails from any cause.
- d. All panel wiring shall be neatly formed and tied. All leads except for control and signal circuits shall be provided with either solder or solderless lugs. Control and signal wires shall be brought to accessible washer type or soldered terminals or studs. The wiring on the back of the panel shall be the flame-resisting type.

22. CONTROLLER CABINET

a. The controller shall be enclosed in a ventilated sheet metal cabinet finished in black enamel. Openings shall be provided in the cabinet for easy access.

23. DIRECT CURRENT BRAKE AND CONTROL SUPPLY

a. A suitable rectifying unit shall be provided on each controller to supply a source of direct current for the elevator machine brake and the control switches. Proper switching equipment shall be furnished to control this operation and obtain positive brake action.

24. GUIDE RAILS

- a. Planed steel tees shall be provided as guides for the car and counterweight. These tees shall be erected plumb and fastened securely to the hoistway framing by heavy steel brackets. The guide rails shall be connected by steel splice plates. The rail contact surfaces of these plates and the back of the guide rail ends shall be accurately machined to form smooth joints. The ends of all guides shall be tongued and grooved to provide matched joints.
- b. Car guides shall have a section of not less than 15 lbs. per lineal foot and counterweight guides shall have a section of not less than 8 lbs. per lineal foot.
- c. Rails shall be suitably bottomed in pit and shall extend to the underside of the overhead slab or grating.
- d. Rails shall be thoroughly cleaned and smoothed before car is put in operation. When car is tested, it must be free from any grinding noise due to rough or rusty guides and the guides must be free from any signs of abrasion.

25. ROLLER GUIDES

- a. The car and counterweight shall be equipped with roller guides. These guides shall be mounted on the top and bottom of the car frame and counterweight frame. Each roller guide shall be equipped with quiet, rubber-tired ball bearing rollers of ample diameter to run on the three finished rail surfaces. The roller guides shall run on dry unlubricated guide rails and each roller of the respective guides shall be maintained in uniform contact with the rail surfaces.
- b. The car shall be properly balanced.

26. CAR PLATFORM


- a. The platform shall consist of a steel frame and stringers and a substantial wood floor or shall be constructed entirely of steel suitably reinforced. The underside of wood platforms shall be fireproofed with sheet steel. A car sill of aluminum shall be included with necessary groove for car door. The support frame shall carry rubber pads on which the platform proper shall rest without any connection to the steel frame. Where the upper part of the cab is braced to the frame, rubber pads shall effectively isolate the cab from the frame.
- b. Platform shall be arranged to receive carpet of thickness as directed later. Carpet will be furnished by others but shall be installed under this section.

27. CAR FRAME, SAFETY AND GOVERNOR

- a. The car frame shall consist of structural steel members which are securely riveted or bolted together and the frame shall be so reinforced and braced as to relieve the car enclosure of undue strains.
- b. A mechanical safety shall be mounted under the car platform and securely bolted to the frame. It shall be actuated by a centrifugal governor mounted in the overhead and connected to the safety tripping mechanism by a continuous governor cable attached to the car frame, passing over the governor sheave and a weighted tension sheave in the pit.
- c. The governor jaws shall grip the cable in a minimum time after the governor reaches tripping speed and shall be held in engagement with the cable by springs and the tension of the governor rope. The governor jaws shall be so designed that the governor rope may slide through them after the safety has set without damage to the rope.

REVISIONS

NO.	DATE	ITEM	REF.

FIRM H.A. INC.	SEAL H.A. JOB NO. N-16
DESIGNED BY	
DRAWN BY	
CHECKED BY CTA	Christie, Niles & Andrews
APPROVED BY CTA	

STRUCTURAL ENGINEERING
VAN RENSSLAER P. SAXE
1701 ST. PAUL ST. BALTO, MD. 21202

MECHANICAL-ELECTRICAL ENGINEERING
HENRY ADAMS, INC.
2315 ST. PAUL ST. BALTO, MD. 21218

22 A. Pennsylvania Ave.
Towson, Maryland 21286
1647 31st Street, N.W.
Washington, D.C. 20007

601 524-7411
707 472-0012
ARCHITECTS

OFFICE BUILDING

FOR

NOTTINGHAM
FARMS INC.102 W. PENNSYLVANIA AVE.
TOWSON, MARYLAND 21204

SPECIFICATIONS

JOB NO. 6522
DATE
LAST REV.

ME
11

MICROFILMED