

**SECTION 14 24 15**  
**MECHANICAL PARKING LIFTS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION OF WORK:**

- A. This section specifies the, engineering, furnishing and installation of the complete Mechanical Parking Lift Systems, (Two Vehicle Standard Lift) as described herein and shown on the drawings.

**1.2 QUALITY CONTROL:**

A. Qualifications:

1. Approval by the Contracting Officer is required of products or services of proposed manufacturer, suppliers, and installers and will be contingent upon submission by Contractor of a certificate stating the following:
  - a. Manufacturer is currently and regularly engaged in manufacturing of mechanical parking lift equipment as one of his principal products.
2. Manufacturer Qualifications:
  - a. Minimum 5 years of successful experience manufacturing parking lifts of type required for this project.
  - b. Minimum of 100 platforms of the same model (or earlier versions of the same model) installed in other projects.
  - c. Manufacturer is currently and regularly engaged in the manufacturing of mechanical parking equipment as one of its principle products
3. Installation and Maintenance Qualifications:
  - a. Minimum 3 years successful experience installing and servicing the same or similar model lifts.
  - b. Must offer annual maintenance and an extended warranty and be able to provide follow up service as needed. Service base of operations must be located within 50 miles of the site location.
  - c. Installer must have technical qualifications of at least 5 years of successful experience, trained supervisory and installation personnel, and facilities to install parking lift equipment specified herein.

- d. Contractor must submit a list of two or more prior installations where all of the parking equipment the contractor proposes to furnish on this project has performed satisfactorily together under conditions of normal use and in climates similar to VAMC-Manhattan. The list shall include projects that have been in operation for a period of not less than two years preceding the date of these specifications.
- B. All Hydraulic and Mechanical parking lift systems shall be the product of a qualified manufacturer. If different manufacturers' products are provided each supplier must meet the minimum qualifications for this specification.
  1. Approval of manufacturer's equipment will be contingent upon having a permanent and satisfactory maintenance service branch which shall render services within 24 hours of receipt of notification. Manufacturer shall submit the name and address of the authorized branch or service department which will render service to this installation. Service provider must have replacement parts on hand sufficient to provide warranty and general service.
    - a. Contractor shall submit a list of two or more prior installations where all the mechanical parking lift equipment the contractor proposes to furnish on this project has performed satisfactorily together under conditions of normal use and similar climate. The list shall include projects that have been in operation for a period of not less than one year preceding the date of these specifications; include the name and addresses of the project and the project Administrators/owners.
  2. Approval will not be given to any mechanical parking lift Contractor and/or manufacturer who has established on prior projects, either Government, municipal, or commercial, a record for unsatisfactory mechanical parking lift installations, or has repeatedly failed to complete contracts awarded to him within the contract time, or has not the requisite record of satisfactorily performing mechanical parking lift installations of similar type and magnitude.

### **1.3 SUBMITTALS:**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

- B. Provide Catalog cuts of all equipment to be supplied and installed for the lifts.
- C. Provide warranties in compliance with the specifications.
- D. Provide user manuals.
- E. Provide maintenance and diagnostic guides for the lift systems.

**1.4 WIRING DIAGRAMS:**

- A. Provide three (3) sets of schematic wiring diagrams for the as delivered systems.
- B. Diagrams shall be delivered to the Resident Engineer within 30 days of final acceptance.

**1.5 ADDITIONAL EQUIPMENT:**

- A. Furnish and install any additional equipment required to operate specified equipment manufactured for this installation.
- B. Special equipment not required by specification, but manufactured by mechanical parking lift contractor, which would improve the operation as a whole, may be installed on or in conjunction with the specified equipment by the contractor at his option at no additional cost to the Government, provided prior approval is obtained from the Contracting Officer.

**1.6 PERFORMANCE STANDARDS:**

- A. The mechanical parking lifts shall be capable of meeting the standards of the industry as specified herein.

**1.7 WARRANTY:**

- A. Submit all labor and materials furnished in connection with Mechanical Parking Lift systems and installation to terms of "Warranty of Construction" articles of FAR clause 52.246-21. Warranty shall commence upon final inspection and completion of performance test and upon full acceptance of the installation and shall concur with the length of the maintenance contract.
- B. If it becomes evident during warranty period that any device is not functioning properly or in accordance with specification requirements, or if in the opinion of the Contracting Officer, excessive maintenance and attention must be employed to keep device operational, device shall be removed and a new device meeting all requirements shall be installed as part of work until satisfactory operation of installation is

obtained. Period of warranty shall start anew for such parts from date of completion of each new installation performed, in accordance with foregoing requirements.

C. Provide written warranty agreeing to repair or replace defective parking lifts, and repair, restore, or replace defective work within specified warranty period.

1. Definition of Defective Parking Lift Operation: Operation or control systems failure, performance below manufacturer's ratings, excessive wear, unusual deterioration or aging materials or finishes, the need for excessive maintenance or abnormal noise or vibration.
2. Warranty Period: One year after date of Substantial Completion for all parts and labor. Manufacturer's warranty: two years all parts and five years manufacturer's structural integrity warranty to protect against defective materials and workmanship.

## **PART 2 - PRODUCTS**

### **2.1 TWO VEHICLE STANDARD HYDRAULIC LIFT:**

#### **A. Manufacturers**

Acceptable Products: All Vehicle Lift Systems supplied for this procurement must be manufactured and presented based on approved New York City Department of Buildings MEA numbers listed with the Department of Buildings for approved mechanical parking equipment installed in New York City. Subject to compliance with requirements, provide Harding Steel SUV lift (model SUV XL) or American Custom Lifts (model DP003-SUV MOD.) or comparable, complete and ready to operate.

#### **B. Required Mechanical Parking Lift Specifications**

1. General: Provide manufacturers standard parking lift construction for type and capacity of units indicated. Lift system framing shall consist of structural and formed steel. All necessary bolts, nuts, and washers must be in accordance with machine design and included as a component of an installation kit. Platforms should be constructed of all hot-dipped galvanized steel. Platforms must be solid plate or formed steel so as to prevent the dripping of fluids from the lifted vehicle. Design and fabricate assembly such that no permanent deformation occurs during normal use of the equipment. Structural design shall conform to NYC Department of Buildings registered MEA number.

2. Structural designs permitted shall include stand alone units. Lifting may only be accomplished by hydraulic cylinders. The design of these cylinders may incorporate lifting chains or direct drive design. Cable-based systems are specifically excluded.
3. Finish: All structural elements and vehicle platforms shall be hot-dipped galvanized steel.
4. Operation: Retrieving cars shall be performed by using a universal key inserted into the control box attached to an overhead control arm bolted to the lift frame. The control box should consist of individual up and down control buttons requiring constant pressure for operation. A universal key will be required to operate each individual lift. The control box should be mounted such that the user is not underneath the moving lift system or of an adjacent lift system during operation. The control box should be mounted such that users of average height can reach the controls and safely operate the lift system, but not so low as to cause a driving hazard or impediment to the loading or unloading of the lift. Each lift unit shall be equipped with a mechanical locking system that automatically engages when the lift is raised to its designated upper limit. The lock system must not be dependent on the hydraulic or electrical systems to remain engaged or to safely support the fully loaded vehicle platform at all times. The locking mechanism must be deliberately and positively released by the user before the lift will lower. Provide electric motor and hydraulic pump assembly of proper size, type, and operation for the capacity of lifts indicated (see below). Include means for manually lowering vehicle lifts in the event of a power failure.
  - a. Power Units: Provide manufacturer's power units for lifts located as shown on the approved shop drawings. Power units should consist of an electric motor/pump with control devices. Oil reservoir should be integrated into power unit and be double walled steel for containment. Power units must have a hand pump for manual retrieval of vehicles. Pressure gauge should be located in plain sight. A safety over-pressure valve shall be required on all power units.
  - b. "Central Power Units," configured to support multiple lifts from the locations indicated on the shop drawings.

- c. Pumps are to be electrically powered, with hydraulic operation for the lift systems. Electronic/electrical control panels are to be built and installed in compliance with local electrical code and carry a UL approval sticker indicating that they were manufactured by a UL certified panel builder.
- i. Capacity and performance of the central pump units must meet the operational specifications of the equipment (number of lifts, time to raise/lower).
  - ii. Power: three-phase, 208-220V power source. Amperage to be indicated by the supplier of the lifts.
  - iii. Manual override in the event of electrical failure or motor failure. This can be a manually operated pump or other subsystem that allows vehicles to be lowered (not raised) from the lifts by a trained operator or technician in the event of a protracted power failure.
  - iv. All pump units must have a visible pressure gauge and an internal electric heater to keep the oil reservoir at an acceptable operating temperature.
  - v. All pump units must have an adjustable safety pressure valve (a.k.a. over pressure valve) that prevents the pump from operating at a pressure level that exceed the system component limits (hoses, fitting, cylinders).
  - vi. The system is required to use "Green" oil. This can be "vegetable" based oil similar to Hyrdo-Safe ISOVG-32 biodegradable oil. ([www.hydrosafe.com](http://www.hydrosafe.com)) or approved equal.
  - vii. Spill Containment - containment tubs calculations shall be developed by the lift manufacturer to determine the size. Calculations shall be provided to the resident engineer for review.
    - 1) Spill containment is to be provided by the lift manufacturer at all pumps,
    - 2) Spill containment can be in the form of plastic tubs that go under the pump tanks,

- 3) Spill containment to comply with local, state and federal codes.
- d. Hydraulic Tubing and hoses: Provide size, type, and weight as recommended by manufacture. All tubing should be stainless steel with all stainless connections. Hoses connecting to hydraulic cylinders may be rubber approved by the manufacturer. All hoses must be rated for installation and operation in underground raceways or conduit..
- e. Platform Speed: Vertical movements shall be a 25 second maximum from ground to maximum set level according to manufacturer specifics. Lowering the lifts shall not exceed 15 seconds in order to maintain safe operation.
- f. Low voltage wiring shall be run in conduit where required and be approved for underground runs.
5. Rated Capacity: Provide parking lifts capable of supporting 6,000 pounds per platform without permanent deflection of distortion.
6. Dimensions:
  - a. Overall Width (measured at outside of leg structure): 8' 3" to 8' 6"
  - b. Overall Vehicle Platform Length: 12' 4" to 13' 0"
  - c. Minimum Total Vertical Rise (distance of underside of raised vehicle platform above the pavement surface): 78"
  - d. Minimum lower car clearance underneath the raised and locked platform in its highest lockable position: 75"
  - e. Upper limit stop position shall be adjustable (at time of installation) such that the platform can be locked at heights ranging from 55" to 78".
7. Anchorage Provisions: Provide anchors and fasteners for installation. Provide types and capacities recommended by manufacturer for support loads and conditions of service and exposure.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION:**

- A. Examine work of other trades on which the work of this Section depends. Report defects to Resident Engineer in writing which may affect the work of this trade or equipment operation, dimensions from site for preparation of shop drawings.
- B. Before fabrication, take necessary job site measurements, and verify where work is governed by other trades. Check measurement of space for equipment, and means of access for installation and operation. Obtain dimensions from site for preparation of shop drawings.
- C. Ensure the following preparatory work, provided under other Sections, has been properly completed to receive the lift work:
  - 1. Ensure supply of electric feeder wires to pump and control panel locations are in accordance with this specification.
- D. Supply in ample time for installation by other trades, inserts, anchors, bearing plates, brackets, supports and bracing including all setting templates and diagrams for placement.

### **3.2 INSTALLATION:**

- A. Perform work with competent mechanics skilled in this work and under the direct control and supervision of the lift manufacturer's experienced foreman.
- B. Install machinery, guides, controls, and all equipment and accessories in accordance with manufacturer's instructions, applicable codes, and standards, to provide a quiet, smooth operating installation, free from side sway, oscillation or vibration.

### **3.3 CLEANING:**

- A. Prior to final acceptance, remove protection from finished or ornamental surfaces, and clean and polish surfaces with due regard to type of material.

### **3.4 SPACE CONDITIONS:**

- A. Attention is called to overhead clearance, overall space in pump room, and construction conditions at building site in connection with lift work. Addition or revision of space requirements, or construction changes that may be required for the complete



installation of the lifts, must be arranged for and obtained by the Contractor, subject to approval of Contracting Officer. Include cost of such changes in bid, and form a part of the contract. Provide proper, satisfactory code legal installation of equipment as a whole, including all construction, accessories and devices in connection with lift, mechanical and electrical work specified herein.

**3.5 ARRANGEMENT OF EQUIPMENT:**

- A. Clearance around lift, mechanical and electrical equipment shall comply with applicable provisions of NEC.
- B. Arrange equipment in machine room so that major equipment components can be removed for repair or replacement, without dismantling or removing other equipment in same pump room.

**3.6 WORKMANSHIP AND PROTECTION:**

- A. All installations shall be made in a first class, neat and skillful manner by mechanics experienced in the trade involved. Mechanically and electrically correct all details of the installation. All materials and equipment shall be new, and without imperfections.
- B. Include recesses, cutouts, slots, holes, patching, grouting, refinishing and the like, to accommodate installation of equipment in the lift contractor's work.
- C. No structural members shall be cut or altered. Restore work in place, which has been damaged or defaced, equal to original condition.
- D. Finish work shall be straight, level and plumb, with true, sharp surfaces and lines. Protect all machinery and equipment against dirt, water or mechanical injury. Thoroughly clean all work at final completion, and deliver in perfect unblemished condition.

**3.7 PRE-TESTS AND TEST:**

- A. The contractor shall develop a detailed operational test procedure for each of the lift systems and submitted to the resident engineer for review and approval no less than 30 days prior to completion of installations.
- B. Pre-test the lifts and related equipment, in the presence of the Resident Engineer. Test for proper operation before requesting final inspection. Conduct final inspection at other than normal working hours, if required by the Resident Engineer's Representative. Test lifts in accordance with the approved test procedure in the presence of, and under the direction of, the Resident Engineer's Representative.

- C. Upon completion of lift installation, conduct operating and car testing for approval of Contracting Officer. Furnish test instruments and materials.

**3.8 INSTRUCTION OF PERSONNEL:**

- A. Provide competent instructors to train Veteran's Administration personnel in care and operation of all parts of equipment. Instruction on Mechanical Parking Lift installation shall be given during regular working hours. Instruction shall commence upon completion of all work required and upon initial operation before final acceptance of work. Instructors shall be qualified representatives, possessing complete knowledge of equipment.
- B. Instructors shall be available for one 8-hour working day minimum, with instruction period directed by the Resident Engineer.
- C. In addition to oral instruction, written instructions in triplicate relative to care and operation of all parts of equipment shall be furnished and delivered to the Resident Engineer in independently bound folders. Video cassette recording will also be acceptable. Written instructions shall include complete and comprehensive sequence of operations, main parts or components lists with descriptive literature and identification, diagrammatic cuts of equipment and parts, etc. Provide any supplementary instructions for adjustment and care of new equipment as may become necessary due to changes, modifications and/or replacement of equipment or its operation, under requirements of paragraph entitled, "Warranty of Construction".

**3.9 INSPECTIONS AND MAINTENANCE:**

- A. Furnish complete maintenance and inspection service on the entire parking equipment installation for a period of (1) year after completion and acceptance of the installation by the resident engineer. This maintenance service shall begin concurrently with the warranty. Maintenance work shall be performed by skilled parking lift personnel directly employed and supervised by the same company that furnished and installed the parking lift equipment.
- B. The maintenance service shall include the following:
  - 1. Quarterly systematic examination of equipment
  - 2. Cleaning, lubricating, adjusting, repairing and replacing of all parts as necessary to keep the equipment in first class operating condition and proper working order
  - 3. Furnishing all lubricant, cleaning materials and parts as required

4. Maintain smooth starting and stopping and accurate leveling at all times.
- C. Maintenance service shall not include the performance of any work required as a result of improper use, accidents, or negligence for which the contractor is not directly responsible.
- D. Provide 24 hour emergency call-back service which shall consist of promptly responding to calls within 2 hours for emergency service should a shutdown or emergency trouble develop between regular examinations. Overtime emergency call-back service shall be limited to minor adjustments and repairs required to protect the immediate safety of the equipment and property in the parking equipment.
- E. Service and emergency personnel shall report to the resident engineer or his authorized representative upon arrival at the hospital and again upon completion of the required work.

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