

# Division 14 20 00.11 (14235) Residential Elevator Winding Drum

January 2007

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Residential elevator with inverter controlled winding drum.

### 1.02 WORK INCLUDED

A. Furnish all labor and materials, equipment and incidentals necessary to assemble and erect a residential elevator, complete with a power unit and all rails, brackets, connections and controls essential for proper operation.

### 1.03 WORK BY OTHERS

A. Construct a hoistway of the size required by the manufacturer, complete with all demolition, additional framing, headers and framing components necessary to prepare the existing building to receive the elevator.

1. Hoistway size: Dependant upon car size.
2. The hoistway shall be vertical to within 1/8" throughout the entire height.
3. Provide and fasten vertical members in hoistway, per manufacturer's recommendation.
4. Pit requirements: Provide an 8" deep pit (6" deep minimum). Install reinforcement and concrete as necessary. Floor must sustain load specified in job drawings.

B. Construct a machine room:

1. Provide elevator electrical circuit: 230 volt/ 1 phase/ 60hz (30 amp)
2. Provide elevator lighting electrical circuit: 115 volt (15amp)

C. Provide system to maintain hoistway temperature between 50-90 degrees Fahrenheit.

### 1.04 REFERENCES:

A. General: The applicable provisions of the following standards shall apply as if written here in their entirety.

B. American Society of Mechanical Engineers / American National Standards Institute (ASME/ANSI) publications: ASME/ANSI A17.1 "Safety Codes for Elevators and Escalators", Section 5.3.

C. National Fire Protection Association (NFPA) publications: NFPA 70 National Electrical Code

### 1.05 SYSTEM DESCRIPTION:

- A. Travel: \_\_\_\_\_ (50' max)
- B. Stops: \_\_\_\_\_ (up to 6)
- C. Load Capacity: 950 lb. (750 lb opt.)
- D. Speed: 36 fpm

### 1.06 SUBMITTALS:

A. Submittals shall be in accordance with Section 01300, SUBMITTALS.

B. Product Data: Submit product data, including manufacturer's specifications.

C. Shop Drawings:

1. Shop drawings showing all field construction, including dimensions.
2. Hoistway dimensions
3. Wiring diagrams
4. Maintenance instructions
5. Car and Gate selection charts

### 1.07 QUALITY ASSURANCE

#### A. Qualifications:

Installer Qualifications: A company experienced in the assembly and erection of lifts and residential elevators of the type specified.

Manufacturer Qualifications: A company specializing in the manufacture of residential elevators.

B. Regulatory Requirements: The complete manufacture, fabrication and erecting of the elevator shall be in compliance with all Federal, State and local codes and ordinances. The installer shall verify requirements of the local authority having jurisdiction and shall comply with all local codes and ordinances.

### 1.08 DELIVERY, HANDLING & STORAGE

A. All components shall be shipped to the site in substantial crates to protect from damage during shipping and handling. Upon arrival, inspect components and keep under cover until installed.

### 1.09 WARRANTY

A. Unit shall have a three (3) year limited parts warranty.

### 1.10 MAINTENANCE:

A. Maintenance of the private residential elevator shall consist of regular cleaning and inspection at intervals not longer than every 12 months.

B. Inspection: ASME A17.1 requires all private residential elevators to be inspected every 12 months.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

A. Manufacturer: "Destiny" model by The National Wheel-O-Vator Co., Inc.

B. Substitutions: No substitution shall be considered unless written request for approval has been submitted and received by the architect at least ten (10) days prior to the bid date.

### 2.02 COMPONENTS

A. Car:

1. Size: 36" W x 48" D (others available)
2. Enclosure: Securely fastened to the car frame and platform. The car shall be constructed of minimum 3/4" wood walls. Floorboard shall be constructed of 1" AC plywood.
3. Gate: Accordion or scissors type equipped with a positively opened mechanical switch to indicate that the door is closed. Scissor type gates shall also be designed to prevent car movement if the gate is moved up or down due to any protruding objects encountering an obstruction.
4. Handrail: One, located on the car wall.
5. Telephone: Wall mount telephone jack shipped loose with elevator.
6. Control panel: Provide one momentary pressure illuminated button for each landing, emergency stop and alarm button, and a digital position indicator; all mounted in

a control panel having a stainless steel or brass cover.

7. Interior lighting: Provide overhead light fixtures that automatically turn on when the car is in operation and turn off by means of a timer circuit.

B. Hoistway door:

1. Size: 3'0" W x 6'8"H swing type

2. The general contractor or owner is to furnish (elevator contractor may opt to furnish) and install hoistway doors, frames, hinges and passage sets at each landing. The type and installation of the doors and frames must comply with ASME A17.1, all local codes and manufacturer's layout drawings.

3. Locking Device: Door shall have a concealed locking device, interlocked with the car operation, to interrupt electrical power when the door is not securely closed and a car is not at the landing. The door shall be locked when car is not in the landing zone.

C. Drive System:

1. Two speed inverter controlled winding drum unit. A single phase input, three phase output for soft start and soft stop.

2. The drum motor and inverter shall be pre-wired, ready for connection to the controller in the field.

3. Electromechanical brake with manual release.

4. Testing: Shall be factory tested prior to shipment.

D. Suspension system: (2) 3/8" – 7x19 aircraft wire rope.

E. Guide rail: Shall consist of two 6 1/4lb. tee rails assembled and fastened. Provide brackets to hold rail assembly to walls.

Rail shall be furnished with steel splice plates and hardware.

F. Car frame: Shall be equipped with non-metallic faced roller guide wheels.

G. Leveling device: Provide Hall Effect Position Sensor to maintain car within 1/4" of the landing.

H. Control systems: Non-Selective collective PLC (Programmable Logic Controller).

I. Motor: 3HP, 1750-RPM 208/230 VAC, three phase.

J. Wiring:

1. Provide flexible traveling cable for electrical lights and controls in car.

2. All other electrical wiring shall be insulated, flame retardant and moisture proof copper wiring, installed in flexible metal conduit.

K. Safety Devices:

1. Slack cable protection: Provide a stainless steel linkage device that stops and sustains the car in the event of breakage or slackening of cables.

2. Terminal stopping device: Shall be provided at the top and bottom of the car travel.

3. Provide a platform toe guard at the car entrance.

4. Final limits

L. Manual operation hand wheel is provided.

M. "Self Diagnostic System" utilizing diagnostic codes displayed in hall and car acknowledgement lights to provide information in the event the elevator will not operate.

## 2.03 ACCESSORIES

*Specifier Note: - Due to the individual nature of elevator installations, accessories such as, but not limited to, those in the following list are available:*

A. Hoistway doors and door locks.

B. Flush mounted telephone box.

C. Car door finish and design.

D. Car operating panel and hall call finishes

E. Car trim and wood specie.

F. Custom platform and car size.

G. Finished flooring.

H. Electrical disconnects.

## PART 3 EXECUTION

### 3.01 INSTALLATION

A. Inspect the hoistway and determine if the hoistway meets the manufacturer's requirements for clearances and plumb.

B. All components shall be assembled and erected in strict compliance with manufacturer's printed instructions and applicable codes.

C. All wiring shall be in accordance with the wiring diagram furnished by the manufacturer and NEC.

### 3.02 FIELD QUALITY CONTROL

A. Static/Running Load Test: All load rating and safety factors shall meet or exceed those specified in ASME A17.1

### 3.03 ADJUSTING

A. Test the elevator to assure proper operation under all conditions of use. Make proper adjustments and review operating components for proper operation.

**For more details, call National Wheel-O-Vator's Design Line  
800-968-5438**

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