

SECTION 14605 - ELECTRIC MONORAIL SYSTEMS

City of San Diego, CWP Guidelines

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. The WORK of this Section includes providing [an] electric monorail system[s] complete. The hoist shall be of the low headroom type, equipped for electric lift and travel, and it shall fit a standard I-beam.

1.2 RELATED SECTIONS

- A. The WORK of the following Sections applies to the WORK of this Section. Other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of this WORK.
 - 1. Section 11000 Equipment, General Provisions
 - 2. Section 14600 Hoists and Cranes, General

1.3 SHOP DRAWINGS AND SAMPLES

- A. The following shall be submitted in compliance with Section 01300:
 - 1. Electrical wiring and control drawings.
 - 2. List of special tools recommended by manufacturer.

1.4 SERVICES OF MANUFACTURER

- A. **Inspection, Startup, and Field Adjustment:** An authorized representative of the manufacturer shall visit the site for not less than [] to perform the indicated services:
- B. **Instruction of OWNER'S Personnel:** The authorized service representative shall furnish the indicated services for not less than [] day(s).

PART 2 - PRODUCTS

2.1 GENERAL

- A. **General:** The monorail hoist shall be controlled from a pendant pushbutton station and be furnished complete with all required safety devices and overload protection. The power supply shall be through a retractable cable reel with power cable. The rail shall be a standard I-beam with stops, securely anchored to the structure, as indicated.
- B. **Site Conditions:**

Equipment No. - []
Location - []
Atmosphere - [chlorine gas] [outdoors] [indoors]

C. **Construction:** The monorail hoist shall be designed as follows:

Hoist - Single speed, rope-type, for parallel lug mounting from a geared trolley, with upper and lower automatic reset limit switches to prevent over travel.

Gear - Fully enclosed, oil lubricated spur gear.

Drum - Steel, with machine-cut grooves and flanges, to accommodate entire cable in one layer.

Bearings - Anti-friction type, lifetime pre-lubricated and sealed.

Motor and Drum Shaft - Grease lubricated, with ball or roller bearings.

Brakes - Mechanical load brake and separate electric motor brake, each adjustable and capable of supporting the full load.

Cable - Of high strength plow steel, flexible, with min 5:1 safety factor, for maximum lift plus 2 wraps on drum.

Load Block - Heavy-duty with ball bearing sheave and forged steel swivel hook with anti-friction bearings and safety spring latch.

Motor - Totally-enclosed, single speed.

Trolley - Motor-driven, with 4 wheels, spur gear, magnetic brake, ball or roller bearings.

D. **Capacity and Dimensions:**

Equipment No. - []
Capacity (tons) - [2]
Max Lift (feet) - []
Length of Rail (feet) - []

Lifting Speed (fpm)	- [20]
Travel Speed (fpm)	- [50]
Hoist Motor (hp)	- [3]
Trolley Motor (hp)	- [1/2]
Power Supply (V-ph-Hz)	- [480-3-60]

- E. **Controls:** Control equipment shall be mounted in an enclosed compartment, with NEMA rating in accordance with the area designations of Section 16050, which forms an integral part of the hoist and shall include a transformer for a 120-volt control circuit. The pendant pushbutton station shall be suspended from the control compartment and shall be provided with a supporting chain or cable, to locate the station 3 feet above the operating floor level.
- F. Each pushbutton shall be clearly marked to indicate its function and sufficient buttons shall be provided to control operations of hoists and trolley.

[2.2 ACCESSORIES]

- [A. **Track Switches:** Sliding switches or turntables shall be provided where indicated. All switches and turntables shall be of heavy-duty welded steel construction as manufactured by the monorail equipment manufacturer, with pull chains and handles. Pull chains shall be located in such a way as not to interfere with the operation of the hoist. Switches shall be installed to accurately match up against the ends of the rails, with close tolerances. No cast fittings shall be used. The radius of curvature of tracks shall be not less than 48 inches, and it shall be large enough to prevent the hoist and trolley from binding.]
- [B. **Chlorine Cylinder Grab Bar:** One chlorine cylinder grab bar of welded steel construction for 3800 lb cylinders shall be furnished.]
- [C. **Chlorine Cylinder Racks:** The CONTRACTOR shall provide chlorine cylinder storage racks, anchored to the floor in the Chlorine Storage Room as indicated. The racks shall be of welded steel construction, suitable for storage of a total of [] one ton cylinders, each 30 inches in diameter and 6 feet 10 inches in length.]

[2.3 MANUFACTURERS]

- A. Chlorine cylinder grab bars shall be manufactured by one of the following (or equal):
1. Chlorine Specialties, Inc. [Model 262]
 2. Bushman Equipment Co. [Model 490]
 3. American Chain and Cable Co., Inc. [Style 1118]]

PART 3 - EXECUTION

3.1 GENERAL

- A. All monorail equipment shall be installed in strict accordance with the manufacturer's published or written instructions and shall comply with the requirements of State of California, Division of Occupational Safety and Health (DOSH).
- B. The CONTRACTOR shall have the monorail equipment examined by an authorized certificating agent and obtain the necessary certificate complying with the requirements of DOSH, State of California.

** END OF SECTION **