

SECTION 41 22 23.19 MONORAIL HOISTS

EQUIPMENT AND COMPONENT NUMBER(S)

Headworks Monorail Hoist 1: No component number.
Headworks Monorail Hoist 2: No component number.
Headworks Monorail Hoist 3: No component number.
Headworks Monorail Hoist 4: No component number.
Membrane Tank Monorail Hoist: 25-HOIST-001.
Reclaimed Water Pump Monorail Hoist: No component number.
Digester Facility Monorail Hoist: No component number.

PART 1 GENERAL

1.01 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
1. American Society of Mechanical Engineers (ASME):
 - a. B30.10, Hooks.
 - b. B30.16, Overhead Underhung and Stationary Hoists.
 - c. B30.17, Cranes and Monorails (With Underhung Trolley or Bridge)
 - d. HST-2, Performance Standard for Hand Chain Manually Operated Chain Hoists.
 - e. HST-4, Performance Standard for Overhead Electric Wire Rope Hoists.
 2. National Electrical Manufacturer's Association (NEMA):
 - a. MG 1, Motors and Generators.
 - b. 250, Enclosures for Electrical Equipment (1,000 volts maximum).
 3. National Fire Protection Association (NFPA): 70, National Electrical Code (NEC).
 4. Occupational Safety and Health Act (OSHA).

1.02 DESIGN REQUIREMENTS

- A. Monorail System: Specifications for Underhung Cranes and Monorail Systems, ASME B30.16.
- B. Hoist: ASME B30.16.
- C. Trolley: ASME B30.17
- D. Wire Rope Hoist Service Class: ASME HST-4.

- E. Chain Hoist Service Class: ASME HST-2.
- F. Hook: ASME 30.10.
- G. Stress and Safety Factors: ASME B30.16. Properly select materials of construction for stresses to which subjected.
- H. Safety of Operation, Accessibility, Interchangeability, and Durability of Parts: ASME B30.16 and OSHA requirements.
- I. Provide system, equipment, and components, including supports and anchorages, designed in accordance with Section 01 67 00, Product Requirements

1.03 SUBMITTALS

A. Action Submittals:

- 1. Shop Drawings:
 - a. Make, model, weight, and horsepower of each equipment assembly.
 - b. Complete catalog information, descriptive literature, materials of construction, and specifications on hoist, wheels, gears and bearing, trolley drive system, hoist motor and assemblies, hook, brakes, starting system, variable speed drive system, conductors (bus bar, festoon, cable reel), controls, remote control system, and accessories.
 - c. Detail Shop Drawings of monorail track, brackets, hangers, and their attachments to building structural steel.
 - d. Power and control wiring diagrams, including terminals and numbers.
 - e. Motor nameplate data in accordance with NEMA MG 1, and include any motor modifications.
 - f. Factory finish system.

B. Informational Submittals:

- 1. Factory Functional Test Report.
- 2. Structural design calculations for monorail track, support system, and anchorage to primary building structure stamped by a registered professional engineer. Refer to Section 01 88 15, Anchorage and Bracing.
- 3. Field performance test procedures for load testing.
- 4. Field functional and performance test reports and log.
- 5. Load test report and certifications for hoist use for each hoist.
- 6. Special shipping, storage and protection, and handling instructions.
- 7. Manufacturer's printed installation instructions.

8. Manufacturer's Certification of Compliance that factory finish system is identical to requirements specified herein.
9. Suggested spare parts list to maintain the equipment in service for a period of 5 years. Include a list of special tools required for checking, testing, parts replacement, and maintenance with current price information.
10. List special tools, materials, and supplies furnished with equipment for use prior to and during startup and for future maintenance.
11. Operation and Maintenance Data: As specified in Section 01 78 23, Operation and Maintenance Data.
12. Manufacturer's Certificate of Proper Installation, in accordance with Section 01 67 00, Product Requirements.

1.04 ENVIRONMENTAL REQUIREMENTS

- A. Temperature: Maximum 95 degrees F; minimum minus 1 degree F.
 1. Humidity Range: 5 percent to 85 percent.
 2. Atmosphere: Mildly corrosive.
 3. Elevation: 6,800 feet AMSL.

PART 2 PRODUCTS

2.01 GENERAL

- A. Hoist and trolley manufacturer to coordinate equipment requirements with steel structures, drive motor, hoisting cable or chain, hook, track, stops, and electrical equipment controls.
- B. Where adjustable speed drives or remote control systems are required, crane manufacturer to furnish a coordinated operating system.
- C. See supplements to this section for additional requirements.

2.02 TRACK

- A. Furnish monorail track in accordance with Section 05 12 00, Structural Steel Framing. For track beam type, size and attachments see Structural Drawings.

2.03 TROLLEY

- A. Physical Characteristics:
 1. Frame: Welded steel, cast steel, or ductile iron construction, or a combination thereof. Construct to control deflection of trolley assembly while transmitting the carrying load to running surface.

2. Wheels: Rolled or forged steel, accurately machined and ground to receive inner bearing races. Furnish alloy steel axles. Minimum tread hardness 210 Brinell.
3. Drive Gears: Helical, spur or herringbone type, rolled or cast steel, with machine cut teeth.
4. Bearings: Combination radial and thrust type, double row, angular contact ball bearings or single-row tapered roller bearings. Bearings prelubricated and sealed, or fitted for pressure lubrication. Locate pressure lubrication fittings for accessibility during maintenance.

B. Functional Characteristics:

1. Where indicated on Hoist/Monorail Datasheets the drive shall consist of trolley drive shaft, driven by an electric motor through a gear reduction unit.
2. Where indicated on Hoist/Monorail Datasheets drive shall consist of chain sprocket mounted on shaft. Furnish chain to within 5 feet of operating floor level. Drive shaft shall drive the trolley wheels directly or through a gear and pinion or spur gear arrangement if required by maximum chain pull force criteria. Maximum chain pull force shall be 40 pounds.
3. Furnish roller assembly stabilizers on single-girder trolley units to prevent tipping during load pickup.
4. Brakes: Suitable for service class and rated torque capacities as specified in ASME B30.11.

C. Performance Characteristics: None.

2.04 WIRE ROPE HOIST

A. Physical Characteristics:

1. Hoisting machinery shall consist of rope drum driven through gear reductions, load blocks, hook, hoisting rope, sheaves, and hoist braking. Drum size and length sufficient for minimum two turns of cable remaining on drum when hook is at lowest position. Furnish reeving as specified on Supplements at end of section. Provide right and left-hand grooved drum when two-part double reeving is specified.
2. Hook: Construct with sufficient ductility to open noticeably before hook failure, equipped with safety latch, free to rotate 360 degrees with rated load and positively held in place with locknuts, collars or other devices.

B. Functional Characteristics: Rope drum and surrounding members constructed to minimize abrasion, crushing or jamming of hoist rope. Load blocks enclosed type. Hoisting rope extra flexible, improved plow steel wire rope, made especially for hoist service.

C. Performance Characteristics:

1. Brakes: Mechanical and electric load brake and controls, designed in accordance with ASME HST-4, and adjustable to compensate for wear.

2.05 CHAIN HOIST

A. Physical Characteristics:

1. Type: Trolley suspended.
2. Hoisting Machinery: Load chain wheel driven through gear reductions, a hand chain wheel, load blocks, sheaves, chain, hook, and hoist braking.
3. Chain: Non-jamming zinc plated alloy.
4. Hook: Construct with sufficient ductility to open noticeably before hook failure, equipped with safety latch, free to rotate 360 degrees with rated load, and positively held in place with locknuts, collars, or other devices.

- B. Functional Characteristics: Chain hoists shall have chain storage bags adequate for storing full lift length of chain and shall be designed and located to avoid interference while hoisting.

C. Performance Characteristics:

1. Brakes: In accordance with ASME HST-2, adjustable to compensate for wear, positive action, Weston type mechanical load brake, with uniform composition lining and forged steel alloy latch pawl.

2.06 ELECTRICAL

- A. Physical Characteristics: Furnish electrical equipment including motors, motor starters, pendant control, control systems, wire, and conduit.

B. Functional Characteristics:

1. Furnish motors compatible with adjustable frequency, variable speed, drive system, 40 to 1 speed range, suitable for hoist, trolley, and bridge drive applications. Controls with 120V ac, microprocessor based, pulsed width modulation design, withstand 45 degrees C temperatures, housed in NEMA 250, Type 4 enclosure, and supplied with 200 percent overcurrent protection.
2. Festooned Flat Cable Conductors: Flexible cable, carried by heavy-duty roller, permanently lubricated roller bearings, with monorail support system that will dispense and retrieve flexible cable without twisting or tangling, and 20 percent spare conductor in each cable assembly.

C. Performance Characteristics:

1. Electrical: In accordance with NFPA 70, NEC Article 610.
2. Grounding: External in accordance with NFPA 70, NEC Article 250.

2.07 CONTROLS

A. Physical Characteristics: None.

B. Functional Characteristics: None.

C. Performance Characteristics:

1. Hoist and Trolley: Pendant control having Momentary contact pushbuttons with a device which will disconnect motors from line on failure of power. Device shall not permit any motor to be restarted until controller handle is brought to the OFF position, or a reset switch or button is operated. Furnish with undervoltage protection as a function of each motor controller, or by magnetic main line contactor.
2. Pushbuttons: Fully magnetic, plain reversing type, housed in NEMA 250, Type 12 enclosure, with contactors of sufficient size and quantity for starting, accelerating, reversing, and stopping duty for specified hoist service class.
3. Trolley Drives: Soft start controls, 460/230V ac series device, installed between drive motor and motor starter with torque and acceleration rate adjustable, suitable for trolley drive service, and work in conjunction with crane control and pendant system.
4. Backup Pendant Pushbutton Control Stations: Heavy-duty, oiltight, suspended from hoist, with control transformers to supply 120V ac power to pushbutton control station. Pushbutton enclosure supported with chain or wire rope. Control wire cable attached to support chain or wire rope at not more than 6-foot intervals. Furnish control station buttons for control of hoist and trolley ON/OFF main line contactor power switch which removes all power from control station.
5. Remote Control System: Frequency modulated (FM), radio-controlled system, belt mounted operator and capable of operating all monorail functions.
6. Control motions indicate direction of resultant monorail motion. Furnish spring-loaded switch motions, with return to OFF position when switch is released and designed to prevent runaway monorail situations.
7. Monorail motions shall stop automatically when monorail can no longer receive remote signals and designed to stop when control signal for any motion becomes ineffective.
8. Remote Control Monorail Motions: Hook raise and lower, trolley movement, and monorail power up and power down. Furnish an EMERGENCY OFF pushbutton station which will disconnect main line

power via a remote switch, and manual reset function to activate all motions after an EMERGENCY OFF event.

2.08 ACCESSORIES

A. General:

1. Equipment Identification Plate:
 - a. Physical Characteristics: 16-gauge stainless steel with 1/4-inch die-stamped equipment tag number securely mounted in a readily visible location.
 - b. Functional Characteristics: None.
 - c. Performance Characteristics: None.
2. Hoist Lift Chain and Trolley Drive Chain Wall Hooks:
 - a. General: Quantity: Provide one hook for each lift chain and trolley drive chain.
 - b. Manufacturers and Products:
 - 1) McMaster-Carr; No. 11855A44.
 - 2) Or equal.
 - c. Physical Characteristics:
 - 1) Type 304 stainless steel construction, mounted to wall with Type 316 stainless steel masonry screws or adhesive anchors.
 - d. Functional Characteristics: None.
 - e. Performance Characteristics: None.

2.09 FACTORY FINISHING

- A. Prepare and prime coat in accordance with manufacturer's standard.

2.10 SOURCE QUALITY CONTROL

- A. Factory Inspections: Inspect control panels and equipment for required construction, electrical connection, and intended function.
- B. Factory Tests and Adjustments No-load run test all equipment furnished.
- C. Factory test report shall include Test Data Sheets.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's printed instructions.
- B. Provide lubrication and lubrication fittings.

3.02 FIELD TESTING AND FACILITY STARTUP

- A. Field Testing and Facility Startup shall be in accordance with the requirements of Section 01 91 14, Equipment Testing and Facility Startup.
- B. Facility startup specifies the order and prerequisites for the following tests of the equipment:
 - 1. Field functional testing.
 - 2. Software operational testing.
 - 3. Performance testing.
 - 4. Demonstration testing.
- C. All Field Testing and Facility Startup shall be performed using a qualified representative provided by the Manufacturer as specified in Section 01 91 14, Equipment Testing and Facility Startup, Section 01 43 33, Manufacturers' Field Services, and as elaborated upon in this section.

3.03 FIELD QUALITY CONTROL

- A. Functional Tests: Conduct on each hoist and monorail system.
 - 1. Alignment: Test complete assemblies for proper alignment and connection, and quiet operation.
- B. Performance Test:
 - 1. Conduct on each hoist and monorail system.
 - 2. Load tests in compliance with OSHA, ASME B30.16, and ANSI MH27.1

3.04 MANUFACTURER'S SERVICES

- A. See Section 01 67 00, Product Requirements.
- B. Manufacturer's Representative:
 - 1. Present at Site or classroom designated by Contracting Office for minimum person-days listed below, travel time excluded:
 - a. 1-1/2 person-days for installation assistance and inspection.
 - b. 1/2 person-day for functional and performance testing and completion of Manufacturer's Certificate of Proper Installation.
 - c. 1/2 person-day for post-startup training of Contracting Officer's personnel. Training shall not commence until an accepted detailed lesson plan for each training activity has been reviewed by Contracting Officer.

- C. See Section 01 67 00, Product Requirements, and Section 01 91 14, Equipment Testing and Facility Startup.

3.05 SUPPLEMENTS

- A. The supplements listed below, following “End of Section,” are a part of this specification:
1. Headworks Monorail Hoist Data Sheet.
 2. Headworks Monorail Hoist Dimension Sheet.
 3. Membrane Tank Monorail Hoist Data Sheet.
 4. Membrane Tank Monorail Hoist Dimension Sheet.
 5. Digester Facility Monorail Hoist Data Sheet.
 6. Digester Facility Monorail Hoist Dimension Sheet.
 7. Reclaimed Water Pump Monorail Hoist Data Sheet.
 8. Reclaimed Water Pump Monorail Hoist Dimension Sheet.

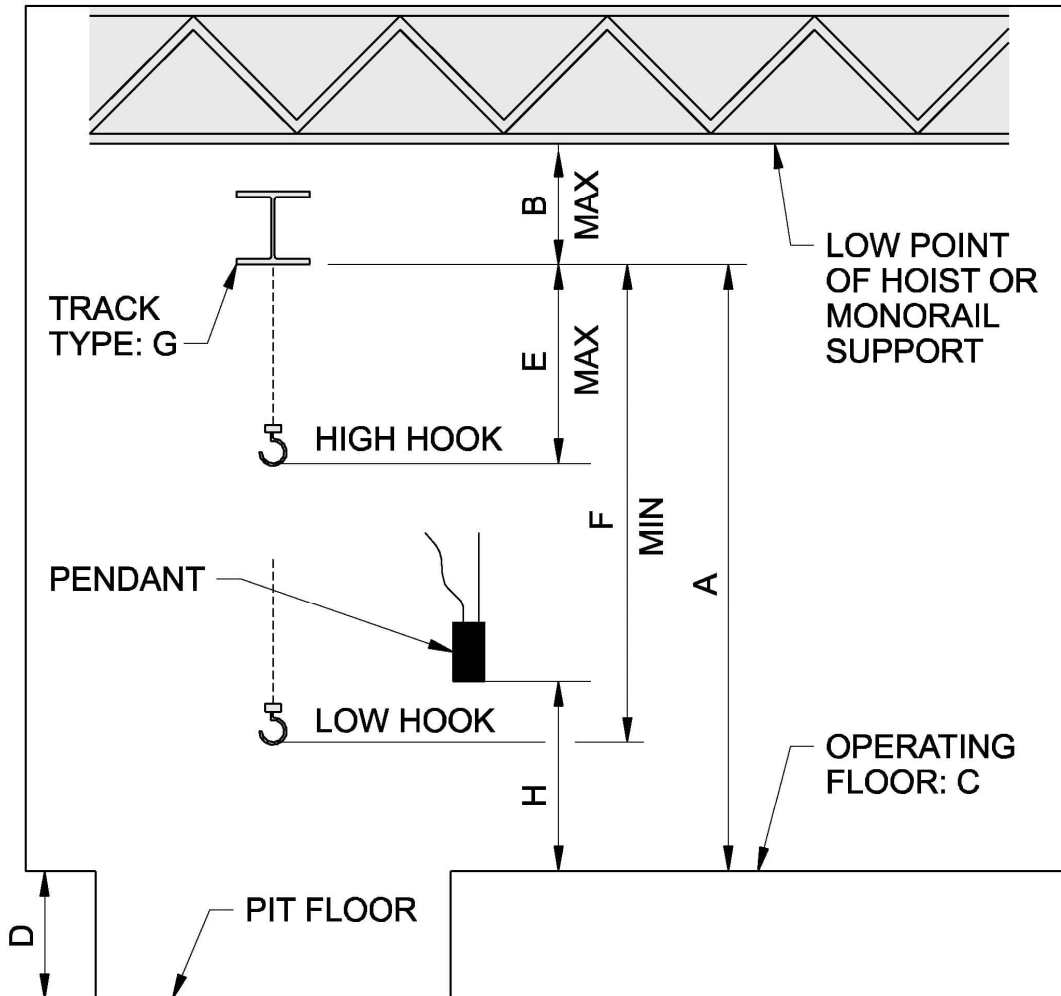
END OF SECTION

HEADWORKS MONORAIL HOIST DATA SHEET		
Project: <u>GRCA 257282</u>		Manufacturer.: <u>CM Hoist, Or equal</u>
Service: <u>Headworks Equipment Hoisting</u>		Model No.: <u>Cyclone Hoist, CBTG Trolley</u>
Equip. Tag Number(s): <u>N/A</u>		Number of Units: <u>4 hoist, 4 trolleys</u>
GENERAL REQUIREMENTS		
Equipment Capacity: <u>1.5</u> tons		Factory Testing: _____
Method of Control: <u>Manual</u>		Power Supply: <u>N/A</u>
☒ Required ☐ Not Required		Voltage _____
Location of Control: <u>Manual</u>		Phase _____
Field Testing: ☐ Not required		Frequency _____
Equipment Location: ☒ Required, functional and performance		
☒ Indoors ☐ Outdoors		
HOIST	TROLLEY	
Type: ☐ Electric, Wire Rope ☒ Hand Operated, Chain Service Class (ANSI): ☐ H1 (standby) ☒ H2 (light) ☐ H3 (standard) ☐ H4 (heavy) ☐ H5 (severe) Speed (fpm): _____ to _____ ☐ Constant Speed ☐ Two Speed ☐ Variable Speed Motor hp: <u>N/A</u> Hook: Hook Manufacturer: _____ Reeving: <u>Single</u>	Type: ☐ Top Running ☒ Underhung Service Class (ANSI): ☐ A1 (standby) ☒ A2 (infrequent) ☐ B (light) ☐ C (moderate) ☐ D (heavy) Speed (fpm): _____ to _____ ☐ Constant Speed ☐ Variable Speed ☒ Hand Chain Operated Motor hp: <u>N/A</u> Electric Conductors: ☐ Bus Bar ☐ Festoon ☐ _____ ☐ Cable Reel	
SPECIAL REQUIREMENTS		
Accessories: ☒ Hoist lift chain and trolley drive chain wall hooks. ☐ OSHA operating and safety devices Remote Controls: ☐ Infrared, line-of-sight ☐ Frequency modulated (FM) Manufacturer: _____ ☐ Extended Grease Fittings Special Electrical Requirements: _____		
See Hoist/Monorail Dimension Sheet for clearances, lift distances, and details.		

HEADWORKS MONORAIL HOIST DIMENSION SHEET
Building Clearances for Monorail Cranes

Project: GRCA 257282

Equipment Service: Headworks Equipment Hoisting



A: <u>15 feet</u>	D: <u>N/A</u>	G: <u>See the Drawings</u>
B: <u>See the Drawings</u>	E: <u>24 inches</u>	H: <u>N/A</u>
C: <u>See the Drawings</u>	F: <u>Lift: 20 feet</u>	

Notes:

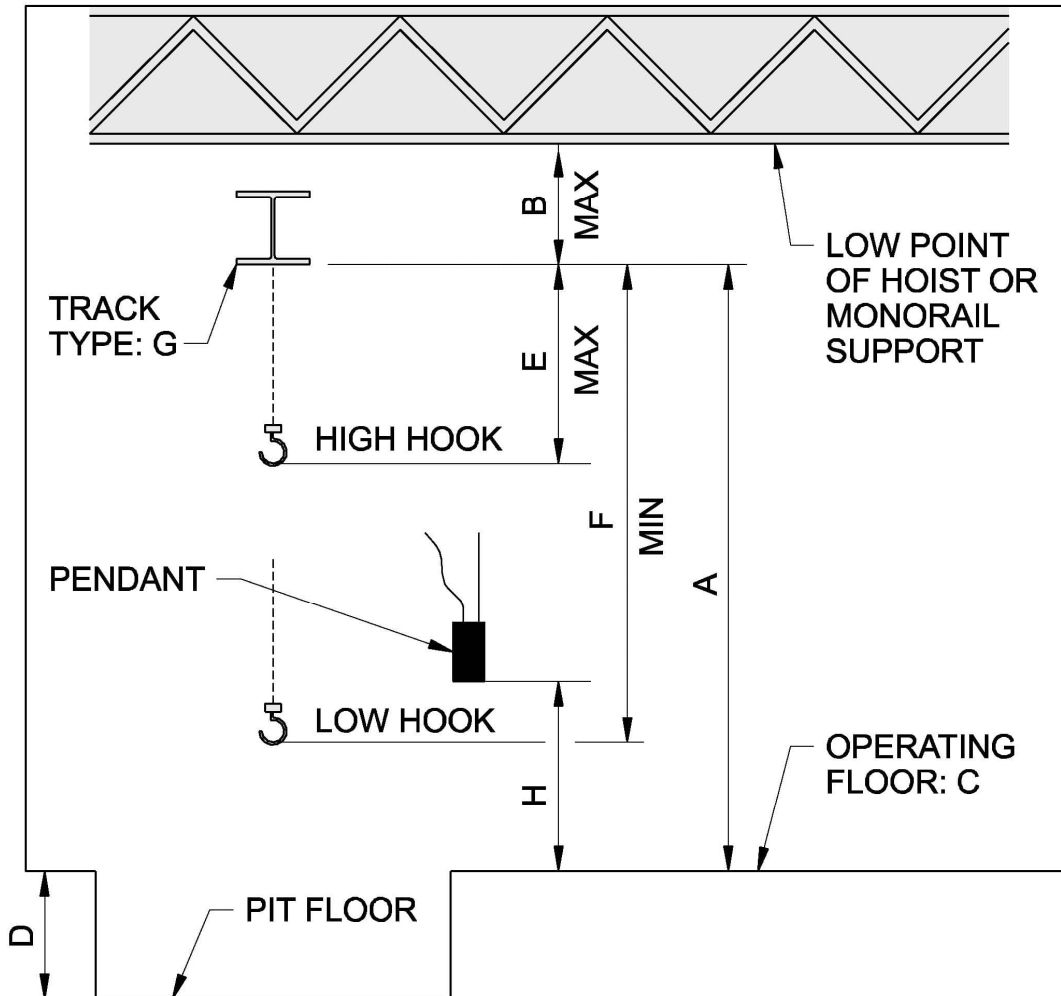
1. Monorail Track Length: See the Drawings.

MEMBRANE TANK MONORAIL HOIST DATA SHEET		
Project: <u>GRCA 257282</u>		Manufacturer.: <u>Wright, Or equal</u>
Service: <u>Membrane Cartridge Removal</u>		Model No.: _____ Series <u>34</u>
Equip. Tag Number(s): <u>25-HOIST-001</u>		Number of Units: <u>1</u>
GENERAL REQUIREMENTS		
Equipment Capacity: <u>7.5</u> tons Factory Testing: ☐ Required ☐ Not Required Power Supply: _____ Method of Control: <u>Remote Control, with Pendant Backup</u> Voltage: <u>480V</u> Location of Pendant Control: <u>Hoist</u> Field Testing: ☐ Not required Phase: <u>3</u> Equipment Location: ☐ Indoors ☒ Outdoors Frequency: <u>60hz</u> ☐ Required, functional and performance		
HOIST	TROLLEY	
Type: ☒ Electric, Wire Rope ☐ Hand Operated, Chain Service Class (ANSI): ☐ H1 (standby) ☒ H2 (light) ☐ H3 (standard) ☐ H4 (heavy) ☐ H5 (severe) Speed (fpm): <u>0</u> to <u>30</u> ☐ Constant Speed ☐ Two Speed ☒ Variable Speed Motor hp: <u>15</u> Hook: _____ Hook Manufacturer: <u>Manufacturers standard</u> Reeving: <u>Double Reeving, true vertical lift</u>	Type: ☐ Top Running ☒ Underhung Service Class (ANSI): ☐ A1 (standby) ☒ A2 (infrequent) ☐ B (light) ☐ C (moderate) ☐ D (heavy) Speed (fpm): <u>0</u> to <u>50</u> ☐ Constant Speed ☒ Variable Speed ☐ Hand Operated Motor hp: <u>1/2</u> Electric Conductors: ☐ Bus Bar ☒ Festoon ☐ _____ ☐ Cable Reel	
SPECIAL REQUIREMENTS		
Accessories: ☐ Central Lubrication System ☐ OSHA operating and safety devices Remote Controls: ☐ Infrared, line-of-sight ☒ Frequency modulated (FM) Manufacturer: _____ ☐ Extended Grease Fittings Special Electrical Requirements: _____		
See Hoist/Monorail Dimension Sheet for clearances, lift distances, and details.		

MEMBRANE TANK MONORAIL HOIST DIMENSION SHEET **Building Clearances for Monorail Cranes**

Project: GRCA 257282

Equipment Tag Number(s): 25-HOIST-001



A: <u>20 feet</u>	D: <u>19.5 feet</u>	G: <u>See the Drawings</u>
B: <u>See the Drawings</u>	E: <u>40 inches (Note 1)</u>	H: <u>N/A</u>
C: <u>See the Drawings</u>	F: <u>Lift: 40 feet</u>	

Notes:

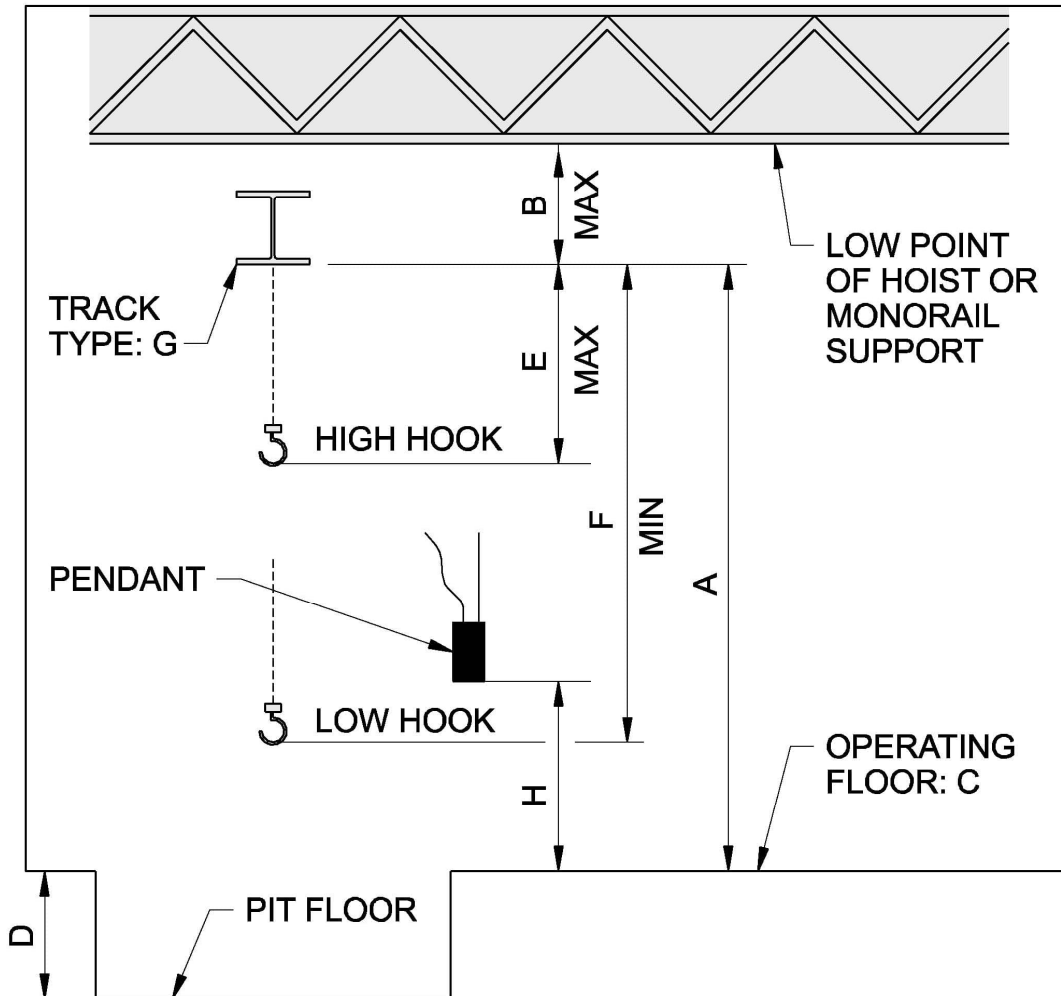
- Hoist High Hook Elevation: 6805.50 minimum
- Monorail Track Length: See the Drawings.

DIGESTER FACILITY MONORAIL HOIST DATA SHEET		
Project: <u>GRCA 257282</u>		Manufacturer.: <u>CM Hoist, Or equal</u>
Service: <u>Digester Facility Equipment Hoisting</u>		Model No.: <u>Cyclone Hoist, CBTG Trolley</u>
Equip. Tag Number(s): <u>N/A</u>		Number of Units: <u>1 hoist, 1 trolley</u>
GENERAL REQUIREMENTS		
Equipment Capacity: <u>2</u> tons		Factory Testing: _____
Method of Control: <u>Manual</u>		Power Supply: <u>N/A</u>
☒ Required ☐ Not Required		Voltage _____
Location of Control: <u>Manual</u>		Phase _____
Field Testing: ☐ Not required		Frequency _____
Equipment Location: ☒ Required, functional and performance		
☒ Indoors ☐ Outdoors		
HOIST	TROLLEY	
Type: ☐ Electric, Wire Rope ☒ Hand Operated, Chain Service Class (ANSI): ☐ H1 (standby) ☒ H2 (light) ☐ H3 (standard) ☐ H4 (heavy) ☐ H5 (severe) Speed (fpm): _____ to _____ ☐ Constant Speed ☐ Two Speed ☐ Variable Speed Motor hp: <u>N/A</u> Hook: Hook Manufacturer: _____ Reeving: <u>Single</u>	Type: ☐ Top Running ☒ Underhung Service Class (ANSI): ☐ A1 (standby) ☒ A2 (infrequent) ☐ B (light) ☐ C (moderate) ☐ D (heavy) Speed (fpm): _____ to _____ ☐ Constant Speed ☐ Variable Speed ☒ Hand Chain Operated Motor hp: <u>N/A</u> Electric Conductors: ☐ Bus Bar ☐ Festoon ☐ _____ ☐ Cable Reel	
SPECIAL REQUIREMENTS		
Accessories: ☒ Hoist lift chain and trolley drive chain wall hooks. ☐ OSHA operating and safety devices Remote Controls: ☐ Infrared, line-of-sight ☐ Frequency modulated (FM) Manufacturer: _____ ☐ Extended Grease Fittings Special Electrical Requirements: _____		
See Hoist/Monorail Dimension Sheet for clearances, lift distances, and details.		

DIGESTER FACILITY MONORAIL HOIST DIMENSION SHEET
Building Clearances for Monorail Cranes

Project: GRCA 257282

Equipment Tag Number(s): N/A



A: 12 feet

D: 13 feet

G: See the Drawings

B: See the Drawings

E: 24 inches

H: N/A

C: See the Drawings

F: Lift: 25 feet

Notes:

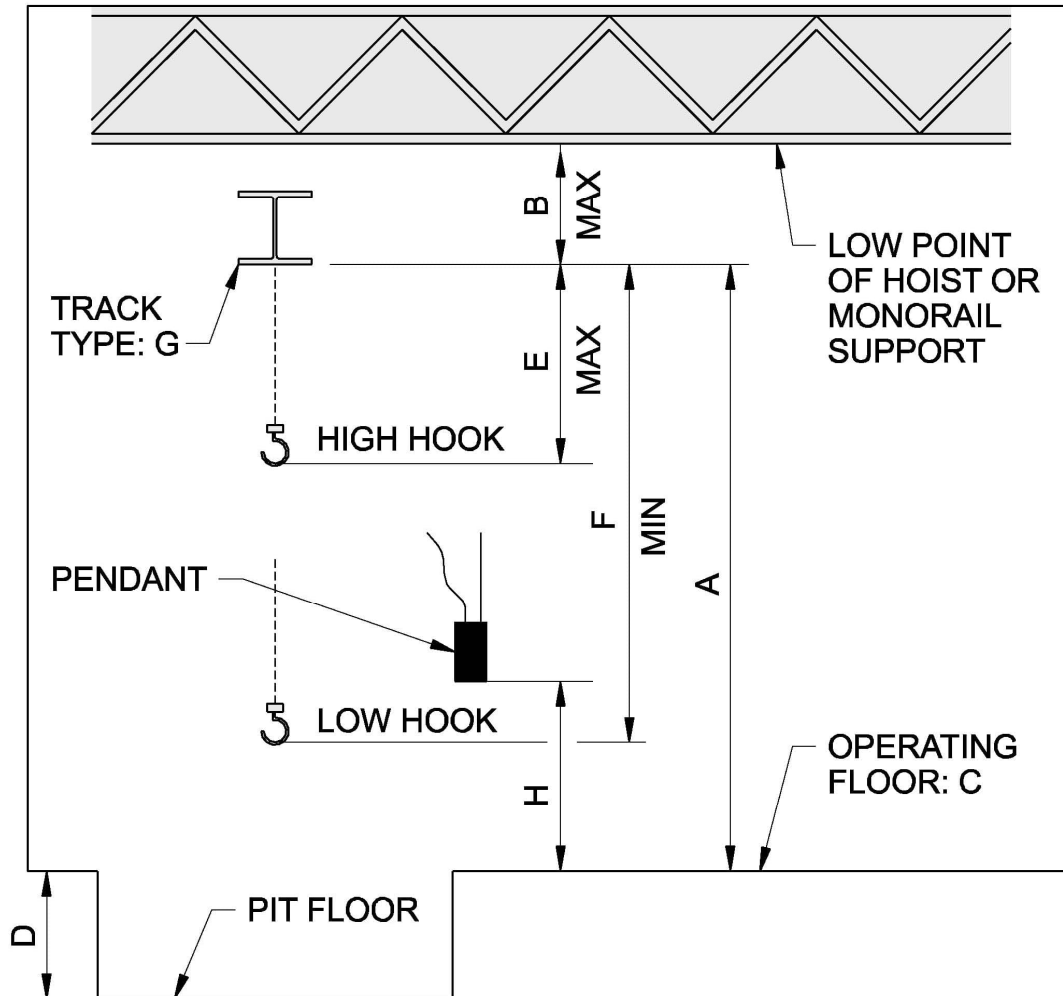
1. Monorail Track Length: See the Drawings.

RECLAIMED WATER PUMP MONORAIL HOIST DATA SHEET		
Project: <u>GRCA 257282</u>		Manufacturer.: <u>CM Hoist, Or equal</u>
Service: <u>Reclaimed Water Pump Hoisting</u>		Model No.: <u>Cyclone Hoist, CBTP Trolley</u>
Equip. Tag Number(s): <u>N/A</u>		Number of Units: <u>4 hoist, 4 trolleys</u>
GENERAL REQUIREMENTS		
Equipment Capacity: <u>1</u> tons		Factory Testing: _____
Method of Control: <u>Manual</u>		Power Supply: <u>N/A</u>
☒ Required ☐ Not Required		Voltage _____
Location of Control: <u>Manual</u>		Phase _____
Field Testing: ☐ Not required		Frequency _____
Equipment Location: ☒ Required, functional and		performance
☒ Indoors ☐ Outdoors		
HOIST	TROLLEY	
Type:		
☐ Electric, Wire Rope ☒ Hand Operated, Chain		
Service Class (ANSI):		
☐ H1 (standby) ☒ H2 (light) ☐ H3 (standard)		
☐ H4 (heavy) ☐ H5 (severe)		
Speed (fpm): _____ to _____		
☐ Constant Speed ☐ Two Speed ☐ Variable Speed		
Motor hp: <u>N/A</u>		
Hook:		
Hook Manufacturer: _____		
Reeving: <u>Single</u>		
Type:		
☐ Top Running ☒ Underhung		
Service Class (ANSI):		
☐ A1 (standby) ☒ A2 (infrequent) ☐ B (light)		
☐ C (moderate) ☐ D (heavy)		
Speed (fpm): _____ to _____		
☐ Constant Speed ☐ Variable Speed ☐ Hand Chain Operated ☒ Plain		
Motor hp: <u>N/A</u>		
Electric Conductors:		
☐ Bus Bar ☐ Festoon ☐ _____		
☐ Cable Reel		
SPECIAL REQUIREMENTS		
Accessories:		
☐ Hoist lift chain and trolley drive chain wall hooks.		
☐ OSHA operating and safety devices		
Remote Controls:		
☐ Infrared, line-of-sight		
☐ Frequency modulated (FM)		
Manufacturer: _____		
☐ Extended Grease Fittings		
Special Electrical Requirements: _____		
See Hoist/Monorail Dimension Sheet for clearances, lift distances, and details.		

RECLAIMED WATER PUMP MONORAIL HOIST DIMENSION SHEET
Building Clearances for Monorail Cranes

Project: GRCA 257282

Equipment Service: Reclaimed Water Pump Hoisting



A: <u>12 feet</u>	D: <u>N/A</u>	G: <u>See Drawings</u>
B: <u>See Drawings</u>	E: <u>24 inches</u>	H: <u>N/A</u>
C: <u>See Drawings</u>	F: <u>Lift: 15 feet</u>	

Notes:

1. Monorail Track Length: See the Drawings.