

# 1 General

## **.1 Codes and Standards**

- .a Comply with applicable provisions of the most recent “North Carolina Building Code.”
- .b Comply with current OSHA requirements.

# 2 Products

## **.1 Maintenance Equipment**

### **.a HARNESS AND RIGGING ANCHORS/ATTACHMENTS:**

- i. Locate all anchorages to suit suspension equipment that will be used on the building with respect to items such as reach, rigging, spacing, roof edge condition, and similar items.
- ii. Design all anchor components to provide adequate attachment to the building and suited to current maintenance practices. Ensure compatibility with the industry standard equipment.
- iii. Ensure all anchor components conform to proper engineering principles and have been designed by a Professional Engineer registered to the state of North Carolina.
- iv. Design system equipment supports to comply with the following structural requirements:
  - (a) Supports for Suspended Platforms: davits, rigging sleeves and monorails are used for suspending a powered platform from storage and rigging/working locations on the building. These supports and the structures to which they are attached are typically designed to 1000 lbs. vertical service load plus impact with a factor of safety as per AISC requirements and/or ACI or other applicable construction codes, and to four times the rated load against fracture or detachment.

### **.b ROOF RIGGED DAVIT ARMS:**

- i. Only to be used when approved by owner.
- ii. Davits to be demountable, portable, capable of being easily and quickly broken down into pieces weighing not more than 80 lbs. for ease of carrying.
- iii. A davit or part of a davit weighing more than 80 lbs. to be provided with means for its transport, which shall keep the center of gravity of the davit at or below 36” above the safe surface during transport.
- iv. Davits or davit components that require more than 80 lbs. lifting effort to raise the arm into position to be provided with a mechanical means of hoisting then into position.
- v. Davit arm booms equipped with rolling trolleys or friction trolleys to have stops to ensure trolley cannot become detached from boom.
- vi. DAVIT BASES: Round, hollow steel section piers of mild steel, Type 350W with yield strength of 50 Ksi (350 MPa), Hot-dip galvanized to ASTM A123/A 123M-2000 with 3/4” diameter U-bar safety anchor, and securement to suit application.
- vii. Tethers: All pins and loose pieces to be secured using 1/8” stainless steel cable complete with easily inserted lead connectors to avoid loss.

## **.2 Loading Dock Equipment**

### **.a RECESSED DOCK LEVELERS**

- i. General: Only to be used when approved by owners. Required for compensating the differences in height between truck bed and loading platform.

- (a) Recessed, hinged-lip-type dock levelers designed for permanent installation in concrete pits preformed in the edge of loading platform; of type, function, operation, capacity, size, and construction indicated; and complete with controls, safety devices, and accessories required.
- (b) Platform: not less than 3/8" thick, nonskid steel plate
- (c) Hinged Lip: not less than 1/2" thick nonskid plate
- (d) Automatic platform return

**.b DOCK BUMPERS**

**i. Laminated Tread Dock Bumpers**

- (a) Fabricate from multiple, uniformly thick plies cut from fabric-reinforced rubber tires. Laminate plies under pressure on not less than two 3/4" diameter, steel supporting rods that are welded at one end to 1/4" thick, structural steel end angle and secured with a nut and angle at the other end. Fabricate angles with predrilled anchor holes and sized to provide not less than 1 inch of thread plies extending beyond the face of the closure angle.

**.3 Food Service Equipment**

- .a** Food-service equipment shall be designed to be bid as a part of the prime general construction contract.

**.b WALK-IN COOLERS AND FREEZERS:**

- i.** Floors shall be approximately the same level as the Kitchen floor for food cart operation. Flooring shall be suitable for fork-lift operation. Provide floor drains near and outside the cooler and freezer door(s) and run copper drain from evaporator unit to this floor drain. Locate temperature controls and thermometers on the outside near the cooler and freezer doors. Temperature setting for the cooler shall be 35 deg. F. and temperature for freezer shall be 10 deg. F. Walk-in cooler and freezer shall be tied to building management system.

- .c** Provide electrical heat strip around freezer door to prevent freeze up of door.

- .d** Insulation of cooler / freezer refrigerant piping should be closed cell (Armaflex, Rubates or Aerocell) with UV protection.

- .e** Consultant shall specify proper shelving (similar to Metro with Metro-seal coating), additional lighting and non-slip floor strips to be provided for all walk-in coolers and freezers.

**.f FUEL SHUT-OFF:**

- i.** Provide automatic type, as required by code. Locate valve a maximum of 6 ft. above finish floor.

**.g FIRE EXTINGUISHING SYSTEM:**

- i.** Provide under hood system, as required by code. Coordinate with mechanical for shutdown of HVAC systems when hood system is activated and with electrical for notification of fire alarm when hood system is activated. Locate remote ansul pull station near exterior egress from kitchen. Show location of pull station on plans.

**.4 Projection Screens**

- .a** General: Standard units consisting of case, screen, motor, controls, mounting accessories, and other components necessary for a complete installation. Provide units that are listed and labeled as an assembly by UL testing and inspecting agency.

- .b** Controls: Remote three-position control switch installed in recessed device box with flush cover plate.

- .c Motor in Roller: Instant-reversing motor of size and capacity recommended by screen manufacturer with permanently lubricated ball bearings, automatic thermal-overload protection, preset limit switches to automatically stop screen in up and down positions, and positive-stop action to prevent coasting. Mount motor inside roller with vibration isolators to reduce noise transition.
- .d Tab Tensioning: Provide units that have a durable low-stretch cord on each side of screen connected to edge of screen by tabs to pull screen flat horizontally.
- .e Ceiling recessed units to be plenum rated.

## **.5 Parking Control Equipment**

### **.a AUTOMATIC BARRIER GATES**

- i. General: Provide UL-approved parking control device consisting of operator and controller housed in cabinet enclosure with gate arm. Device shall be activated by a signal from access or revenue control device. Fabricate unit with gate arm height in down position of not more than 35 inches.
- ii. Cabinets: Fabricate from metal sheet with seams welded and ground smooth; approximately 15 inches square by 40 inches tall. Provide single, gasketed access door for each cabinet with flush-mounted locks. Furnish two keys for each lock, all locks keyed alike. Fabricate cabinet with internal reinforcing and four mounting holes accessible only from inside cabinet.
- iii. Swing Arm Gate: 1-by-4-inch nominal-size pine or redwood joined together with metal side brackets; with painted finish and clack diagonal stripes on traffic-side face. Provide mounting flange with breakaway feature to ensure clean break if arm is struck by vehicle.
- iv. At each entry gate location there shall be a card reader, video camera, and communication device. Consult with the owner as to whether or not they want In/Out control.

### **.b VEHICLE DETECTORS**

- i. Loop Detector System: provide self-tuning electronic detector with adjustable detection patterns, adjustable sensitivity and frequency settings, and panel indicator light designed to detect presence or transit of a vehicle over an embedded loop of wire and to emit signal activating gate-arm operator. Include automatic closing timer with adjustable time delay before closing, timer cut-off switch, and vehicle loop detector designed to hold gate arm open until traffic clears.
- ii. Provide a three loop system; presence, safety and close whenever there is a card reader associated with the barrier gates.

## **.6 Pedestrian Control Equipment**

### **.a OPTICAL TURNSTILES**

- i. GENERAL: Two or more adjacent pedestals shall utilize active infrared beams to create an invisible electronic field between pedestals, monitoring the passage of individuals entering and/or leaving a facility, discriminating between people and nuisances, such as , some types of briefcases, umbrellas, and empty wheelchairs.
- ii. Movement thru turnstile shall be in one direction. Movement thru the turnstile in opposite direction (from unscreened to screened areas) shall generate alarms. The optical turnstiles shall be provided with no physical barriers (arms, glass partitions etc.)

- iii. If entry is authorized, the Traffic Flow Indicator (TFI) will light as green arrow pointing in the direction authorized, and a chime will sound indicating to the used that they may pass. Unauthorized access attempts are singled out by local visual/audible alarms.
- iv. Provide multi infrared beam array per lane synchronized for detection to prevent interference between adjacent paths and other nearby optical turnstiles.

**.b SECURITY METAL DETECTORS**

- i. Weight: No less than 200 lbs.
- ii. Zone Indicator Lights: Unit receiver leg shall include a threat location indicator light bar extending the full length of the leg on the front and back of the leg. Zone indicator light bar shall include a minimum of 20 indicator lights.
- iii. No manual or site calibration shall be required with the exception of sensitivity, program and volume.
- iv. Unit shall offer 100 different sensitivity levels. The units shall be preset to the standard FAA weapons detection program and this program setting cannot be altered by the user
- v. No photoelectric or infrared or other detection device shall be used as an electronic gate to control traffic flow or serve as a means to disable the unit to reduce false alarms.
- vi. No synchronization cable shall be required for the normal operation of multiple systems in the same vicinity.
- vii. Walk-through direction will be bidirectional.
- viii. Dual unit electronics console shall be mounted in the overhead support of the archway.
- ix. Front panel shall be protected by a lockable smoked plastic cover.
- x. Access to the console's programming functions shall be via user-programmable access code.

**.c X-RAY SCANNER**

- i. General Imaging Requirements:
  - (a) Resolution: Unit shall be capable of imaging 39 American Wire Gauge (AWG) solid copper wire at the fifth step of an American Society of Testing Materials (ASTM) stepwedge for the entire life of the machine. The numbers on the stepwedge shall be easily readable at all levels.
  - (b) Penetration: Shall penetrate 30 mm of steel.
  - (c) Solid State Technology: Unit shall be state-of-the-art linescan type technology and have a memory capacity of 1280 x 1024 x 24 bits, 4096 gray levels. It shall also have a contrast sensitivity of at least 22 gray levels visible as measured with an ASTM stepwedge.
  - (d) Organic/Inorganic Identification: Minimum 17" monitor with second monitor as an option. Both configurations shall allow black and white density-based image analysis and image processing capability by means of four color assignment, enabling the operator to distinguish between organic and inorganic material. After identifying a material, the unit shall color the item according to density.
  - (e) Organic and Inorganic Stripping Capability: Unit shall be capable of allowing the operator to strip from the screen any organic or inorganic information by means of a single button without stopping the conveyor belt, leaving only the important organic or inorganic information highlighting the potential threat areas.
  - (f) Semi-Automatic Explosive Detection: System shall include an operator activated function to highlight items that represent potential explosives, i.e., those items with unusually high concentrations of atomic numbers 6, 7, and 8.

- (g) Real-Time Operation: All features shall be accessible to the operator without having to stop the conveyor belt.
- (h) Zoom Function: Keyboard shall allow up to 16x zooming via Panning Zoom Pad without the use of a mouse or trackball. The screen shall include Zoom Position Locator Box which identifies the area of the bag currently being magnified.
- (i) Stored Image Review: Unit shall store the previous 10 images for review without having to reverse the belt or rescan the item.
- (j) Automatic Dense Area Detection: Unit shall automatically detect sections of the image of high absorption, i.e., dense and dark, and lighten and enhance only these selected areas with no change to the surrounding image.
- (k) Image Archiving and Retrieval: Unit shall include a USB port on the outside of the units housing, accessible without opening the units housing. Stored files shall be exportable to a USB thumb drive for review and printing at a desktop PC.