SECTION 14 10 00

DUMBWAITERS, MATERIAL LIFTS, AND VERTICAL RECIPROCATING CONVEYORS

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\*\* NOTE TO SPECIFIER \*\* MATOT a division of Savaria; Dumbwaiters and Material Lifts.  
This section is based on the products of MATOT a division of Savaria, which is located at:2 Walker Dr.Brampton, ON, Canada L6T 5E1Toll Free Tel: 855-728-2742Fax: 905-791-2222Email: [request info (sales@matot.com)](https://arcat.com/rfi?action=email&company=MATOT%252Ba%252Bdivision%252Bof%252BSavaria&message=RE%253A%2520Spec%2520Question%2520(14100mtt)%253A%2520&coid=34061&spec=14100mtt&rep=&fax=905-791-2222)  
Web: <https://www.matot.com>   
 [ [Click Here](https://arcat.com/company/matot-a-division-of-savaria-34061) ] for additional information.  
What do you need to move? Matot has been helping people move materials and goods of almost every description since 1888. Now part of Savaria, a global leader in accessibility and mobility, our extensive range of robust and reliable dumbwaiters, material lifts and vertical reciprocating conveyors (VRCs) can be found in healthcare, food service/hospitality, retail, commercial, institutional, industrial, laboratory/clean room, maritime/oil rig, explosion/hazardous material, and residential applications across North America.  
With our deep design, engineering, and North American manufacturing experience, we can help you define the key performance parameters for your project and create a system that will deliver the goods-literally and figuratively. We can help guide you through national and local code requirements, capacity questions, space limitations and more, to ensure you get the right solution for your building's specific application.  
When aesthetics are part of the package, explore our varied finishes, button styles, frames, doors, security systems and keypads.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Dumbwaiters.
    2. Material lifts.
    3. Vertical Reciprocating Conveyors (VRCs).
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
    2. Section 04 20 00 - Unit Masonry.
    3. Section 06 11 00 - Wood Framing.
    4. Section 09 21 16.33 - Gypsum Board Area Separation Wall Assemblies.
    5. Section 05 50 00 - Metal Fabrications. All bracket fastening inserts and other steel required for support of guide rails and brackets.
    6. Section 09 90 00 - Painting and Coating. Painting of exterior walls and prime finished components that are exposed to view, including inside of car, car gates and doors.
    7. Section 26 00 00 - Electrical. A power line from the source to an approved 30 ampere fused disconnect switch located immediately adjoining the controller cabinet must be provided. A 110V single phase machine area lighting and convenience outlet must also be provided.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Society of Mechanical Engineers (ASME):
       1. ASME A17.1/CSA B44 - Safety Code for Elevators and Escalators.
       2. ASME A17.2/CSA B44 - Inspector's Manual for Electric Elevators.
       3. ASME A17.5/CSA B44 - Elevator and Escalator Electrical Equipment.
       4. ASME/UL - 10B Fire Tests of Door Assemblies.
       5. ASME/UL - 508 Industrial Controllers.
    2. National Fire Protection Association (NFPA):
       1. NFPA 70 - National Electrical Code.
    3. Underwriters Laboratories (UL):
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00.
     2. Product Data:
        1. Manufacturer's data sheets on each product to be used.
        2. Preparation instructions and recommendations.
        3. Storage and handling requirements and recommendations.
        4. Typical installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Verification Samples: Two representative units of each type, size, pattern, and color.
    2. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum of five years documented experience.
     2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
     3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
  2. PRE-INSTALLATION CONFERENCE
     1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
  3. DELIVERY, STORAGE, AND HANDLING
     1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
     2. Protect from damage due to weather, excessive temperature, and construction operations.
  4. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
  5. WARRANTY
     1. Manufacturer's standard limited warranty unless indicated otherwise.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: MATOT a division of Savaria, which is located at:2 Walker Dr.Brampton, ON, Canada L6T 5E1Toll Free Tel: 855-728-2742Fax: 905-791-2222Email: [request info (sales@matot.com)](https://arcat.com/rfi?action=email&company=MATOT%252Ba%252Bdivision%252Bof%252BSavaria&message=RE%253A%2520Spec%2520Question%2520(14100mtt)%253A%2520&coid=34061&spec=14100mtt&rep=&fax=905-791-2222);Web: <https://www.matot.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with the provisions of Section 01 60 00.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. DUMBWAITERS
     1. Basis of Design: Matot Dumbwaiters as manufactured by Savaria.
        1. When not indicated otherwise, provide manufacture's product as indicated in published product literature and as required for complete Savaria Matot Dumbwaiter systems.

\*\* NOTE TO SPECIFIER \*\* Matot will custom engineer and manufacture any variation of dimensions at no extra charge. No company has more expertise or knowledge than us. We are here to guide you through the design process.

* + 1. Performance and Design Requirements:
       1. Comply with applicable building and elevator codes at the project site, including but not limited to:
          1. ASME A17.1/CSA B44 - Safety Code for Elevators and Escalators.
          2. ASME A17.2/CSA B44 - Inspector's Manual for Electric Elevators.
          3. ASME A17.5/CSA B44 - Elevator and Escalator Electrical Equipment.
          4. NFPA 70 - National Electrical Code.
          5. ASME/UL - 10B Fire Tests of Door Assemblies.
          6. ASME/UL - 508 Industrial Controllers.
       2. Dumbwaiter Maximum Car Size per ANSI A17.1: 10.76 sq ft (1 sq m) x 48 inches (1219 mm) high.

\*\* NOTE TO SPECIFIER \*\* Maximum Inside Car Dimensions (WxDxH): 39 x 39 x 48 inches (991 x 991 x 1219 mm). Delete dimensions not required.

* + - 1. Inside Car Dimensions: 24 x 24 x 36 inches (610 x 610 x 914 mm).
      2. Inside Car Dimensions: 36 x 36 x 48 inches (914 x 914 x 1219 mm).
      3. Inside Car Dimensions: \_\_\_ x \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ x \_\_\_ mm).
      4. Minimum Capacity: 13.9 lbs per cu ft of car size.
      5. Maximum Capacity: Up to 750 lbs (340 kg).
      6. Capacity: \_\_\_ lbs (\_\_\_kg).
      7. Rated Load Both Car and Machine: 125 percent of capacity.

\*\* NOTE TO SPECIFIER \*\* Delete load configuration options not required.

* + - 1. Loading Configuration: Single side.
      2. Loading Configuration: Opposite side.
      3. Loading Configuration: Adjacent side.
      4. Number of Stops: \_\_\_.
         1. Leveling Accuracy: Car floor to be within plus or minus 1/4 inch (6 mm) above or below the hoistway door sill.

\*\* NOTE TO SPECIFIER \*\* Delete dumbwaiter stop options not required.

* + - * 1. Dumbwaiter Stop: Counter height.
        2. Dumbwaiter Stop: Floor level.
      1. Number or Landing Entrances: \_\_\_.

\*\* NOTE TO SPECIFIER \*\* Overhead clearance for winding drum type dumbwaiters with bi-parting doors and gates:  
Drum machine located below is 42 inches above the car. Sill height + car height + 42 inches is the overhead clearance required. Add 8 inches if chosen with power gates/doors.  
Drum machine located above is 54 inches above the car. Sill height + car height + 54 inches is the overhead clearance required. Add 18 inches if chosen with power gates/doors.  
Drum machine located above with a Car Width of 26 inches or less is 66 inches above the car. Sill height + car height + 66 inches is the overhead clearance required. Add 18 inches if chosen with power gates/doors.  
Overhead Clearance for traction machines with bi-parting doors and gates:  
Traction machine located above inside the shaft is typically 72 inches above the car.

* + - 1. Hoistway Opening Configuration: Bi-parting doors and gates.

\*\* NOTE TO SPECIFIER \*\* Pit Depth not required with Counter height Dumbwaiter Stop.

* + - * 1. Pit Depth: 30 inches (762 mm).
        2. Overhead Clearance: \_\_\_\_\_ inches (\_\_\_\_ mm).

\*\* NOTE TO SPECIFIER \*\* A Drawbridge is optional. Delete if not required. Only available with bi-parting gates and doors.

* + - * 1. Drawbridge: Provides smooth entrance for wheeled carts; raised and lowered by opening and closing of car gate.

\*\* NOTE TO SPECIFIER \*\* Overhead clearance for winding drum type dumbwaiters with slide-up doors and gates or swing doors:  
Drum machine located above is double the car height + 14 inches. Add 24 inches if chosen with powered gates/doors.  
Drum machine located above with a Car Width of 26 inches or less is 66 inches above the car. Sill height + car height + 66 inches is the overhead clearance required. Add 24 inches if chosen with powered gates/doors.  
For traction machine type dumbwaiters with slide-up doors and gates or swing doors:  
Traction machine located above inside the shaft is typically 72 inches above the car.  
Adjacent openings will add 12 - 24 inches of additional overhead. Not available with power gates/doors.

* + - 1. Hoistway Opening Configuration: Slide-up doors and gates or swing doors.

\*\* NOTE TO SPECIFIER \*\* Pit Depth not required with Counter height Dumbwaiter Stop.

* + - * 1. Pit Depth: 8 inches (203 mm).
        2. Overhead Clearance: \_\_\_\_\_ inches (\_\_\_\_\_ mm).

\*\* NOTE TO SPECIFIER \*\* Lift Distance: Minimum: 18 inches (457 mm). Maximum: No limit. Travel speeds up to 199 fpm (1.011 mps) are available for travel distances exceeding 50 feet (15.240 m).

* + - 1. Travel Distance: \_\_\_ft \_\_\_ inches (\_\_\_ mm).
      2. Travel Speed, Nominal for Winding Drum Machine: 50 fpm (0.25 mps).
      3. Travel Speed, Nominal for Traction Machine: 75 fpm (37.5 mps).
      4. Travel Speed, Nominal for Traction Machine: \_\_\_ fpm (\_\_\_ mps).
      5. Speed Variance: Plus or minus 10 percent of the rated speed regardless of load or direction.
      6. Power Supply: \_\_\_\_ Volts, 3 Phase, 60 Hertz.
      7. Power Supply: \_\_\_\_ Volts, \_\_\_ Phase, 60 Hertz.
    1. Fabrication:
       1. Car Enclosure: 16-gauge, 304 Stainless steel.
       2. Removable shelf.
       3. Electrical light fixture recessed in the ceiling.
       4. Reinforced Floor: For Floor loading models.
    2. Machine:

\*\* NOTE TO SPECIFIER \*\* Delete machine type option not required. Winding drum type is ideally suited for heavy-duty use in low rise applications with 50 ft (15.240 m) of maximum travel. Traction type is used in higher-rise or higher-speed applications. Variable frequency and invertor-based drive systems are standard for Traction types and optional for Winding Drum types. Delete if not required.

* + - 1. Machine Type: Winding Drum.
      2. Machine Type: Traction.
      3. Motor: To be of ample horsepower to lift the rated load at the rated speed, with a high starting torque and low starting current.
      4. Brake: Spring applied and electrically released.
      5. Variable Frequency and Invertor-Based Drive Systems: Smooth travel and precise stopping and starting.
      6. Mounting Base: Structural steel.

\*\* NOTE TO SPECIFIER \*\* Delete location option not required. Bottom locations are used typically with counter-height loading dumbwaiters. Top locations are typical with floor loading and traction type dumbwaiters

* + - * 1. Location: Bottom.
        2. Location: Top.
    1. Hoistway Doors: To bear the Underwriters "B" label for 1-1/2 hours.
       1. Hollow Metal Door Panels: Welded unit wall frame, including jambs, trim and sill; manufactured with 16 gauge material.
       2. A door lock and contact or true interlock are to be provided on each door.

\*\* NOTE TO SPECIFIER \*\* The first hoistway door option is standard. Choose one of the other door types if there is not sufficient clearance for bi-parting doors. Delete door type options not required.

* + - 1. Door Type: Vertical two panel bi-parting doors.
      2. Door Type: Vertical single panel slide-up doors.
      3. Door Type: Swing Doors.

\*\* NOTE TO SPECIFIER \*\* Powered door operation cannot be furnished on dumbwaiter cars less than 24 inches wide x 28 inches deep front to back and adjacent opening cars. Delete door operation option not required. Power operation is not available with swing doors.

* + - 1. Door Operation: Powered.
      2. Door Operation: Manual.

\*\* NOTE TO SPECIFIER \*\* Delete door finish not required. Galvannealed steel, paint ready finish is only available for swing doors.

* + - 1. Door Finish: 304 Stainless Steel.
      2. Door Finish: Galvannealed steel, paint ready.
    1. Cab Doors: To bear the Underwriters "B" label for 1-1/2 hours.
       1. Hollow Metal Door Panels: Welded unit wall frame, including jambs, trim and sill; manufactured with 16 gauge material.

\*\* NOTE TO SPECIFIER \*\* Choose one of the door types if there is not sufficient clearance for bi-parting doors. Bi-parting cab doors are not available with Vertical single panel slide-up hoistway doors. Delete door type options not required.

* + - 1. Door Type: Vertical two panel bi-parting doors.
      2. Door Type: Vertical single panel slide-up doors.
      3. Door Type: Collapsible (accordion) gate.

\*\* NOTE TO SPECIFIER \*\* Powered door operation cannot be furnished on dumbwaiter cars less than 24 inches wide x 28 inches deep front to back and adjacent opening cars. Delete door operation option not required. Power operation is not available with collapsible gates.

* + - 1. Door Operation: Powered.
      2. Door Operation: Manual.

\*\* NOTE TO SPECIFIER \*\* Delete door finish not required. Black enamel painted finish is only available for Collapsible (accordion) gate.

* + - 1. Door Finish: 304 stainless steel.
      2. Door Finish: Black enamel painted.
    1. Machine Access Door (WxH): 24 x 24 inches (610 x 610 mm). Hinged. At machine location for service and maintenance.
       1. Material: 16 gauge Stainless steel.

\*\* NOTE TO SPECIFIER \*\* The tower is optional. Delete if not required. If the supporting angle tower is provided, the tower must be installed before the hatch walls are erected. Supporting angle towers cannot be provided on lifts over 750 lbs (340 kg) capacity. Supporting angle towers require additional hoistway width.

* + 1. Self-Supporting Tower: Components shall be carried on a self-contained, rigidly braced, structural steel angle tower extending full height of the hoistway.
    2. Guide Rails: Elevator grade 8 lbs. "Tee" rails, to guide the car. Mounted to the floor slabs and hoistway wall with brackets.
       1. Rail and Bracket Material: Steel.
    3. Controller: Wall-mounted type with lockable door.
       1. Location: On hoistway outer wall in sight of machine access door.
       2. Characteristics: Solid-state programmable and Underwriter's Laboratories, Inc. (UL) listed.
    4. Operational Control: Microprocessor-controlled automatic call and send operation.
       1. Pushbutton Station: One button for each level served to be furnished at each door.
          1. Each Level: Call the car or send it to any other level.
          2. Pushbuttons: Inoperative while car is in transit and for a few seconds after arrival at the selected level.
          3. Pushbuttons Faceplates: Stainless steel.
    5. Signals Devices:
       1. "Door Open" Call Buzzer: Sounds when a pushbutton is pressed and a hoistway door or car gate is open.
       2. "Car Here" Light and Chime: Located in each pushbutton station.
          1. Chime: Indicates car arrival.
          2. Light: Indicates car presence.
       3. Combination "Door Open" and "In-Use" Light: Located in each pushbutton station. Light illuminates when car is in transit and when a pushbutton is pressed and a hoistway door or gate is open.
       4. Door Open / Door Close Button: Furnished if power operated hoistway doors are furnished.
    6. Hoist Ropes: If winding drum machine; minimum of one galvanized aircraft-grade cable with safety factor per code.
    7. Hoist Ropes: If Traction machine; minimum (2, 1/4 inch x 8 x 19) traction steel cable with safety factor per code.
    8. Final Limit Stopping Devices: Provide per code.
    9. Guide Shoes: To be adjustable, renewable dry type.
    10. Roller Guides: Provided on traction machines.

\*\* NOTE TO SPECIFIER \*\* Retain the following paragraph if material lift is a traction type. Otherwise delete the paragraph

* + 1. Counterweight: Equal in weight to that of the car plus 40 percent of the rated capacity.

\*\* NOTE TO SPECIFIER \*\* Security system items are optional. Delete options not required.

* + 1. Security Systems:
       1. Key locks.
       2. Keypads.
       3. Interfaces to external security systems.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. MATERIAL LIFTS
     1. Basis of Design: Matot Material Lifts as manufactured by Savaria.
        1. When not indicated otherwise, provide manufacture's product as indicated in published product literature and as required for complete Savaria Matot Dumbwaiter systems.

\*\* NOTE TO SPECIFIER \*\* Matot will custom engineer and manufacture any variation of dimensions at no extra charge. No company has more expertise or knowledge than us. We are here to guide you through the design process.

* + 1. Performance and Design Requirements:
       1. Comply with applicable building and elevator codes at the project site, including but not limited to:
          1. NFPA 70 - National Electrical Code.
          2. ASME/UL - 10B Fire Tests of Door Assemblies.
          3. ASME/UL - 508 Industrial Controllers.

\*\* NOTE TO SPECIFIER \*\* Maximum Material Lifts Inside Car Dimensions (WxDxH): 48 x 96 x 90 inches (1219 x 2438 x 2286 mm). Delete dimensions not required.

* + - 1. Inside Car Dimensions: 36 x 36 x 60 inches (914 x 914 x 1524 mm).
      2. Inside Car Dimensions: 48 x 60 x 72 inches (1219 x 1524 x 1829 mm).
      3. Inside Car Dimensions: \_\_\_ x \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ x \_\_\_ mm).
      4. Maximum Capacity: 2500 lbs (1134 kg).
      5. Minimum Capacity: 50 lbs per sq ft of car size.
      6. Capacity: \_\_\_ lbs (\_\_\_kg).

\*\* NOTE TO SPECIFIER \*\* Delete load configuration option not required.

* + - 1. Loading Configuration: Single side.
      2. Loading Configuration: Opposite side.
      3. Number of Stops: \_\_\_.
      4. Number or Openings: \_\_\_.
      5. Car will stop at floor level.

\*\* NOTE TO SPECIFIER \*\* Overhead clearance for standard material lifts with bi-parting doors and gates: Drum machine located above is 60 inches above the car. Car height + 60 inches is the overhead clearance required. Add 24 inches if chosen with power gates/doors.

* + - 1. Hoistway Opening Configuration: Bi-parting doors and gates.
         1. Pit Depth: 50 percent of car height plus 6 inches (152 mm).
         2. Overhead Clearance: \_\_\_\_ inches (\_\_\_\_ mm).

\*\* NOTE TO SPECIFIER \*\* A Drawbridge is optional. Delete if not required. Standard with bi-parting gates and doors.

* + - * 1. Drawbridge: Provides smooth entrance for wheeled carts; raised and lowered by opening and closing of car gate.

\*\* NOTE TO SPECIFIER \*\* Overhead clearance for standard material lifts with slide-up doors and gates:  
Drum machine located above is 78 inches above the car. Car height + 78 inches is the overhead clearance required. Add 24 inches if chosen with power gates/doors.  
For Swing Doors: Drum machine located above is 66 inches above the car. Car height + 66 inches is the overhead clearance required.

* + - 1. Hoistway Opening Configuration: Slide-up doors and gates or swing doors.
         1. Pit Depth: 16 inches (407 mm).
         2. Overhead Clearance: \_\_\_\_ inches (\_\_\_\_ mm).

\*\* NOTE TO SPECIFIER \*\* Lift Distance: Minimum: 18 inches (457 mm). Maximum: No limit. Nominal travel Speed: Higher travel speeds available upon request. Maximum Travel speed available 199 fpm (1.01 mps). Delete travel speed options not required.

* + - 1. Travel Distance: \_\_\_ft \_\_\_ inches (\_\_\_ mm).
      2. Travel Speed, Nominal for Winding Drums: 40 fpm (0.20 mps).
      3. Travel Speed, Nominal for Traction Machines: 75 fpm (0.38 mps).
      4. Travel Speed, Nominal for Traction Machines: \_\_\_ fpm (\_\_\_ mps).
      5. Travel Speed Variance: Plus or minus 10 percent of the rated speed regardless of load or direction.
      6. Power Supply: \_\_\_\_ Volts, 3 Phase, 60 Hertz.
    1. Fabrication:
       1. Car Enclosure: 16 gauge. Stainless steel.
       2. Electrical light fixture recessed in the ceiling.
       3. Reinforced Floor: For floor loading models.
    2. Machine:

\*\* NOTE TO SPECIFIER \*\* Delete machine type option not required. Winding drum type is ideally suited for heavy-duty use in low rise applications with 50 ft (15.240 m) of maximum travel. Traction type is used in higher-rise or higher-speed applications

* + - 1. Machine Type: Winding Drum.
      2. Machine Type: Traction.
      3. Motor: To be of ample horsepower to lift the rated load at the rated speed, with a high starting torque and low starting current.
      4. Brake: Spring applied and electrically released.
      5. Mounting Base: Structural steel.
         1. Location: Top of the shaft.
    1. Hoistway Doors: To bear the Underwriters "B" label for 1-1/2 hours.
       1. Hollow metal door panels and welded unit wall frame, including jambs, trim and sill. Manufactured with 16 gauge material.
       2. A door lock and contact or true interlock shall be provided on each door.

\*\* NOTE TO SPECIFIER \*\* Delete door type options not required. Vertical two panel bi-parting doors are standard but the other options are available if project conditions do not allow sufficient clearances for bi-parting type.

* + - 1. Door Type: Vertical two panel bi-parting doors.
      2. Door Type: Vertical single panel slide-up doors.
      3. Door Type: Swing doors.

\*\* NOTE TO SPECIFIER \*\* Delete doors operation option not required. Power operation cannot be furnished on Matot Material Lift cars less than 24 inches (610 mm) wide x 28 inches (711 mm) deep and are not available with swing doors.

* + - 1. Doors Operation: Manual.
      2. Doors Operation: Powered.

\*\* NOTE TO SPECIFIER \*\* Delete door finish not required. Galvannealed steel, paint ready finish is only available for swing doors.

* + - 1. Door Finish: Stainless steel.
      2. Door Finish: Galvannealed steel, paint ready.
    1. Cab Doors: To bear the Underwriters "B" label for 1-1/2 hours.
       1. Hollow Metal Door Panels: Welded unit wall frame, including jambs, trim and sill; manufactured with 16 gauge material.

\*\* NOTE TO SPECIFIER \*\* Choose one of the door types if there is not sufficient clearance for bi-parting doors. Bi-parting cab doors are not available with Vertical single panel slide-up hoistway doors. Delete door type options not required.

* + - 1. Door Type: Vertical two panel bi-parting doors.
      2. Door Type: Vertical single panel slide-up doors.
      3. Door Type: Collapsible (accordion) gate.

\*\* NOTE TO SPECIFIER \*\* Powered door operation cannot be furnished on material lift cars less than 24 inches wide x 28 inches deep front to back and adjacent opening cars. Delete door operation option not required. Power operation is not available with collapsible gates.

* + - 1. Door Operation: Powered.
      2. Door Operation: Manual.

\*\* NOTE TO SPECIFIER \*\* Delete door finish not required. Black enamel painted finish is only available for collapsible (accordion) gate.

* + - 1. Door Finish: 304 stainless steel.
      2. Door Finish: Black enamel painted.
    1. Machine Access Door (WxH): 24 x 24 inches (610 x 610 mm). Hinged. At machine location for service and maintenance.
       1. Material: 16 gauge \_\_\_\_\_\_\_\_.
    2. Guide Rails: Elevator grade 8 lbs. Steel "Tee" rails furnished to guide the car. Mounted to the floor slabs and hoistway wall with steel brackets.
    3. Controller: Wall-mounted type with lockable door.
       1. Location: On hoistway outer wall in sight of machine access door.
       2. Characteristics: Solid-state programmable and Underwriter's Laboratories, Inc. (UL) listed.
    4. Operational Control: Microprocessor-controlled automatic call and send operation.
       1. Pushbutton Station: One button for each level served to be furnished at each door.
          1. Each Level: Call the car or send it to any other level.
          2. Pushbuttons: Inoperative while car is in transit and for a few seconds after arrival at the selected level.
          3. Pushbuttons Faceplates: Stainless steel.
    5. Signals Devices:
       1. "Door Open" Call Buzzer: Sounds when a pushbutton is pressed and a hoistway door or car gate is open.
       2. "Car Here" Light and Chime: Located in each pushbutton station.
          1. Chime: Indicates car arrival.
          2. Light: Indicates car presence.
       3. Combination "Door Open" and "In-Use" Light: Located in each pushbutton station. Light illuminates when car is in transit and when a pushbutton is pressed and a hoistway door or gate is open.
       4. Door Open / Door Close Button: Furnished if power operated hoistway doors are furnished.
    6. Hoist Ropes: If winding drum machine. Minimum of two galvanized aircraft-grade cable with safety factor per code.
    7. Hoist Ropes: If Traction machine: Minimum (2, 1/4 inch x 8 x 19) traction steel cable with safety factor per code.
    8. Final Limit Stopping Devices: Provide per code.
    9. Guide Shoes: Roller Guides.

\*\* NOTE TO SPECIFIER \*\* Retain the following paragraph if material lift is a traction type. Otherwise delete the paragraph

* + 1. Counterweight: Equal in weight to that of the car plus 40 percent of the rated capacity.

\*\* NOTE TO SPECIFIER \*\* Security system items are optional. Delete options not required.

* + 1. Security Systems:
       1. Key locks.
       2. Keypads.
       3. Interfaces to external security systems.
  1. VERTICAL RECIPROCATING CONVEYORS (VRCS)
     1. Basis of Design: Matot Vertical Reciprocating Conveyors as manufactured by Savaria.
        1. When not indicated otherwise, provide manufacture's product as indicated in published product literature and as required for complete Matot VRC systems.
     2. Performance and Design Requirements:
        1. Comply with applicable building and conveyor codes at the project site, including but not limited to:
           1. ASME B20 - Safety Code for Vertical Reciprocating Conveyors.
           2. NFPA 70 - National Electrical Code.
           3. ASME/UL - 10B Fire Tests of Door Assemblies.
           4. ASME/UL - 508 Industrial Controllers.

\*\* NOTE TO SPECIFIER \*\* Maximum VRC Inside Car Dimensions (WxDxH): 60 x 96 x 96 inches (1524 x 2438 x 2438 mm). Minimum Inside Car Dimensions (WxDxH): 30 x 36 x 90 inches (762 x 914 x 2286 mm).

* + - 1. Inside Car Dimensions: 48 x 60 x 72 inches (1219 x 1524 x 1828 mm).
      2. Inside Car Dimensions: \_\_\_ x \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ x \_\_\_ mm).
      3. Maximum Capacity: 2500 lbs (1134 kg).
      4. Minimum Capacity: 50 lbs per sq ft of car size.
      5. Capacity: \_\_\_ lbs (\_\_\_kg).
      6. Rated Load Both Car and Machine: 125 percent of capacity.

\*\* NOTE TO SPECIFIER \*\* Delete load configuration options not required.

* + - 1. Loading Configuration: Single side.
      2. Loading Configuration: Opposite side.
      3. Number of Stops: \_\_\_.
         1. Leveling Accuracy: Car floor to be within plus or minus 1/4 inch above or below the hoistway door sill.
         2. VRC Stop: Floor level.
      4. Number of Openings: \_\_\_.

\*\* NOTE TO SPECIFIER \*\* Overhead clearance for standard VRC's with bi-parting doors and gates:  
Drum machines located above is 60 inches above the car. Car height + 60 inches is the overhead clearance required. Add 24 inches if chosen with power gates/doors.

* + - 1. Hoistway Opening Configuration: Bi-parting doors and gates.
         1. Pit Depth: 50 percent of car height plus 6 inches (152 mm).
         2. Overhead Clearance: \_\_\_\_ inches (\_\_\_\_ mm).

\*\* NOTE TO SPECIFIER \*\* A Drawbridge is optional. Delete if not required. Standard with bi-parting gates and doors

* + - * 1. Drawbridge: Provides smooth entrance for wheeled carts; raised and lowered by opening and closing of car gate.

\*\* NOTE TO SPECIFIER \*\* Overhead clearance for standard VRC's with slide-up doors and gates:  
Drum machine located above is 78 inches above the car. Car height + 78 inches is the overhead clearance required. Add 24 inches if chosen with power gates/doors.  
For Swing Doors: Drum machine located above is 66 inches above the car. Car height + 66 inches is the overhead clearance required.

* + - 1. Hoistway Opening Configuration: Slide-up doors and gates or swing gates.
         1. Pit Depth: 16 inches (407 mm).
         2. Overhead Clearance: \_\_\_\_ inches (\_\_\_\_ mm).
      2. The car shall stop at floor level.
      3. Travel Distance: \_\_\_ft \_\_\_ inches (\_\_\_ mm).
      4. Travel Speed, Nominal for Winding Drums: 40 fpm (0.20 mps).
      5. Travel Speed, Nominal for Traction Machines: 75 fpm (0.38 mps).
      6. Travel Speed Variance: Plus or minus 10 percent of the rated speed regardless of load or direction.
      7. Power Supply: \_\_\_\_ Volts, 3 Phase, 60 Hertz.
    1. Fabrication:
       1. Car Enclosure: 16 gauge. Stainless steel.
       2. Electrical light fixture recessed in the ceiling.
       3. Reinforced Floor: For floor loading models.
    2. Machine:

\*\* NOTE TO SPECIFIER \*\* Delete machine type option not required. Winding drum type is ideally suited for heavy-duty use in low rise applications with 50 ft (15.240 m) of maximum travel. Traction type is used in higher-rise or higher-speed applications

* + - 1. Machine Type: Winding Drum.
      2. Machine Type: Traction.
      3. Motor: To be of ample horsepower to lift the rated load at the rated speed, with a high starting torque and low starting current.
      4. Brake: Spring applied and electrically released.
      5. Mounting Base: Structural steel.
         1. Location: Top of the shaft.
    1. Hoistway Doors: To bear the Underwriters "B" label for 1-1/2 hours.
       1. Hollow metal door panels and welded unit wall frame, including jambs, trim and sill shall be manufactured with 16 gauge material
       2. A door lock and contact or true interlock shall be provided on each door.

\*\* NOTE TO SPECIFIER \*\* Delete door type options not required. Vertical two panel bi-parting doors are standard but the other options are available if project conditions do not allow sufficient clearances for bi-parting type.

* + - 1. Door Type: Vertical two panel bi-parting doors.
      2. Door Type: Vertical single panel slide-up doors.
      3. Door Type: Swing doors.

\*\* NOTE TO SPECIFIER \*\* Delete doors operation option not required. Power operation cannot be furnished on Matot Material Lift cars less than 24 inches wide x 28 inches deep and is also not available on swing doors.

* + - 1. Doors Operation: Manual.
      2. Doors Operation: Powered.

\*\* NOTE TO SPECIFIER \*\* Delete door finish not required. Galvannealed steel, paint ready finish only available for swing doors.

* + - 1. Door Finish: 304 Stainless steel.
      2. Door Finish: Galvannealed steel, paint ready.
    1. Cab Doors: To bear the Underwriters "B" label for 1-1/2 hours.
       1. Hollow Metal Door Panels: Welded unit wall frame, including jambs, trim and sill; manufactured with 16 gauge material.

\*\* NOTE TO SPECIFIER \*\* Choose one of the door types if there is not sufficient clearance for bi-parting doors. Bi-parting cab doors are not available with Vertical single panel slide-up hoistway doors. Delete door type options not required.

* + - 1. Door Type: Vertical two panel bi-parting doors.
      2. Door Type: Vertical single panel slide-up doors.
      3. Door Type: Collapsible (accordion) gate.

\*\* NOTE TO SPECIFIER \*\* Powered door operation cannot be furnished on VRC's less than 24 inches wide x 28 inches deep front to back and adjacent opening cars. Delete door operation option not required. Power operation is not available with collapsible gates.

* + - 1. Door Operation: Powered.
      2. Door Operation: Manual.

\*\* NOTE TO SPECIFIER \*\* Delete door finish not required. Black enamel painted finish only available for Collapsible (accordion) gate.

* + - 1. Door Finish: 304 stainless steel.
      2. Door Finish: Black enamel painted.
    1. Machine Access Door (WxH): 24 x 24 inches (610 x 610 mm). Hinged. At machine location for service and maintenance.
       1. Material: 16 gauge \_\_\_\_\_\_\_\_.
    2. Guide Rails: Elevator grade 8 lbs. Steel "Tee" rails furnished to guide the car. Mounted to the floor slabs and hoistway wall with steel brackets.
    3. Controller: Wall-mounted type with lockable door.
       1. Location: On hoistway outer wall in sight of machine access door.
       2. Characteristics: Solid-state programmable and Underwriter's Laboratories, Inc. (UL) listed.
    4. Operational Control: Microprocessor-controlled automatic call and send operation.
       1. Pushbutton Station: One button for each level served to be furnished at each door.
          1. Each Level: Call the car or send it to any other level.
          2. Pushbuttons: Inoperative while car is in transit and for a few seconds after arrival at the selected level.
          3. Pushbuttons Faceplates: Stainless steel.
    5. Signals Devices:
       1. "Door Open" Call Buzzer: Sounds when a pushbutton is pressed and a hoistway door or car gate is open.
       2. "Car Here" Light and Chime: Located in each pushbutton station.
          1. Chime: Indicates car arrival.
          2. Light: Indicates car presence.
       3. Combination "Door Open" and "In-Use" Light: Located in each pushbutton station. Light illuminates when car is in transit and when a pushbutton is pressed and a hoistway door or gate is open.
       4. Door Open / Door Close Button: Furnished if power operated hoistway doors are furnished.
    6. Hoist Ropes:

\*\* NOTE TO SPECIFIER \*\* Delete machine type not required.

* + - 1. Winding Drum Machine: Minimum of two galvanized aircraft-grade cable with safety factor per code.
      2. Traction Machine: Minimum (2, 1/4 inch x 8 x 19) traction steel cable with safety factor per code.
    1. Final Limit Stopping Devices: Provide per code.
    2. Guide Shoes: Roller Guides.

\*\* NOTE TO SPECIFIER \*\* Retain the following paragraph if material lift is a traction type. Otherwise delete the paragraph

* + 1. Counterweight: Equal in weight to that of the car plus 40 percent of the rated capacity.

\*\* NOTE TO SPECIFIER \*\* Security system items are optional. Delete options not required.

* + 1. Security Systems:
       1. Key locks.
       2. Keypads.
       3. Interfaces to external security systems.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until the substrates have been properly constructed and prepared.
         1. Verify hoistway and openings are of correct size and within tolerance. Verify electrical power is available and of correct characteristics.
      2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
   2. PREPARATION
      1. Clean surfaces thoroughly prior to installation.
      2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   3. INSTALLATION
      1. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
         1. Leave manufacturers electrical connection drawings with electrical contractor to make final electrical connection.
         2. The installation of the Savaria Matot Material Lift shall be carried out in accordance with the approved plans and specifications and manufacture's installation instructions.
         3. Do not begin installation until preliminary work, including hoistway, landings and machine space has been properly prepared.
         4. Coordinate installation of hoistway wall construction.
         5. Check hoistway for plumb and square.
   4. FIELD QUALITY CONTROL
      1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
         1. Perform tests required by the manufacturer.
         2. Supply instruments and execute specific tests.
         3. Perform tests in presence of Architect:
         4. Test equipment by transporting the rated load up from main floor during thirty-minute period.
         5. At an agreed time during contract warranty period, and with building normally occupied using normal building traffic, conduct tests to verify performance.
         6. Time equipment travel between typical floors at not more than the rated travel time.
      2. Field Services
         1. Obtain required permits to perform tests. Perform tests required by regulatory agencies. Schedule tests with agencies and Architect and Contractor present.
         2. Submit tests and approval certificates issued by jurisdictional authorities.

\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.

* + 1. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.
       1. Engage a factory-authorized service representative to train Owner's maintenance personnel to operate installed equipment.
  1. ADJUSTING, CLEANING AND PROTECTION
     1. Adjust for smooth and quiet movement of car and doors. Adjust for consistent stopping at landings.
     2. Protect installed products until completion of project.
     3. Remove protective coverings from finished surfaces. Clean surfaces and components ready for inspection in accordance with the manufacturers recommendations.
     4. Touch-up, repair or replace damaged products before Substantial Completion.
  2. DEMONSTRATION
     1. Engage a factory-authorized service representative to train Owner's Maintenance personnel to operate the Matot Material Lift.

END OF SECTION