

**1.0 GENERAL****1.1 SUMMARY**

- .1 Provide and install an enclosed vertical platform lift.

- .2 Description:

Type of carriage	Wheelchair and attendant platform
Type of runway (hoistway)	Enclosed Vertical Platform lift
Dimension of the clear runway	1 372mm wide X 1 676mm depth
Travel	3 610mm
Total of landing / front / rear	2 / 2 / 0

- .3 Only non-proprietary products are to be used on this project. The controller will be marked signifying that it is non-proprietary.

**1.2 REFERENCES**

- .1 CSA B355 - Lifts for Persons with Physical Disabilities.
- .2 Canadian Electrical Code, CSA C22

**1.3 SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 and the following requirements:
- .2 Product Data: Manufacturer's data sheets on each product to be used, including:
  - .1 Submit manufacturer's installation instructions, including preparation, storage and handling requirements.
  - .2 Include complete description of performance and operating characteristics.
  - .3 Include a letter from the subcontractor stating that the products that will be supplied for the wheelchair will be non-proprietary.
- .3 Shop Drawings:
  - .1 Shop drawings provided by manufacturer must be stamped and approved by an P.Eng who is permitted to practice his discipline in the Territory of Nunavut by way of a current membership in NAPEGG (Association of Professional Engineers, Geologists & Geophysicists of the N.W.T. & Nunavut).
  - .2 Show typical details of assembly, erection and anchorage. Include wiring diagrams for power, control, and signal systems.
  - .3 Show complete layout and location of equipment, including required clearances.
  - .4 All requirements specified by the code, dimensions of hoistway equip (plan, elevation view)
  - .5 Dimensions and specifications of cab (plan and elevation views)
  - .6 Signalling equipment, cab and floor call buttons, position indicator, direction indicators.
  - .7 The texts that will be read by building users or the public must be in Inuktitut, English and French. The contractor must submit a list of required text in English and French. The translation will be provided by the Departmental Representative. All other text that is in technical spaces and not read by users of the building must be in English and French.

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- .4 Closeout Submittals:
    - .1 Provide Operation and Maintenance Manual in accordance with Section 01 78 00.
    - .2 Manual to include instructions for adjustment and operation applicable to each type of component or hardware; and the name, address and telephone number of nearest authorized service representative.
  - 1.4 QUALITY ASSURANCE
    - .1 Manufacturer Qualifications: Firm with minimum 10 years documented experience in manufacturing of inclined wheelchair platform lifts of installations of type specified.
    - .2 Installer Qualifications:
      - .1 Firm licensed to install equipment of this scope. Installation must be done by a certified, qualified, and registered company.
      - .2 Installer shall maintain an adequate stock of replacement parts and have qualified people available to ensure timely maintenance and callback service at the project site.
  - 1.5 REGULATORY REQUIREMENTS
    - .1 Supply and install all equipment in accordance with the latest version of the following codes and regulations:
      - .1 National Building Code of Canada (2015);
      - .2 CSA B355 -09 (R2013) - Lifts for Persons with Physical Disabilities;
      - .3 CSA B44.1/ASME A17.5 - Elevator and Escalator Electrical Equipment;
      - .4 Canadian Electrical Code, CSA C22 ;
      - .5 CSA B651-12 (Accessible Design for Built Environment Standard).
  - 1.6 DELIVERY, STORAGE, AND HANDLING
    - .1 Store products in manufacturer's unopened packaging until ready for installation.
    - .2 Store components off the ground in a dry covered area, protected from adverse weather conditions.
  - 1.7 PROJECT CONDITIONS
    - .1 Do not use wheelchair lift for hoisting materials or personnel during construction period.
  - 1.8 WARRANTY
    - .1 Provide a warranty covering the wheelchair lift materials and workmanship for twelve (12) months following completion of installation and Substantial Completion.
  - 1.9 MAINTENANCE SERVICE
    - .1 Furnish service and maintenance for the complete lift system and components during the warranty period.
      - .1 The maintenance program shall comply with the appendix "B" of the CSA B355 Lifts for Persons with Physical Disabilities.
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- .2 Include systematic examination, adjustment, and lubrication of elevator equipment. Repair or replace parts whenever required. Use parts produced by manufacturer of original equipment. Replace wire ropes when necessary to maintain required factor of safety.
- .3 Provide emergency call back service for this maintenance period.
- .4 Perform maintenance work using competent and qualified personnel approved by elevator manufacturer or original installer.

#### 1.10 Standards and Regulations

- .1 The work shall be performed in accordance with all applicable national, provincial or municipal codes and regulations.
- .2 The contractor shall accept liability for any work required to complete the job or rectify deficiencies in accordance with such codes and indemnify the owner in the event of injury, damage, claim or action, arising from the contractor's failure to comply with all codes and regulations.
- .3 The contractor shall obtain all necessary permits, inspections and approvals and shall arrange for all mandatory inspections that may be required by the Elevator Inspection Authorities and the elevator consultant, or any other applicable agencies, to carry out the scope of work and at the contractor's expense.
  - .1 Installers must be certified and registered with the Safety Services, Protection Services Division, Nunavut, prior to the commencement of work.
- .4 All work is to be carried out in accordance with the latest edition of the CSA B355 Lifts for Persons with Physical Disabilities

## 2. PRODUCTS

### 2.1 Hydraulic drive (pumping unit)

- .1 Supply a hydraulic drive that shall comply with all the requirements of clause 6.6 of CSA-B355 and have the following additional features:
  - .1 Submersible pump;
  - .2 Three-phase asynchronous electric motor, non-submersible, from the Imperial Electric manufacturer or equivalent;
    - .1 The motor will be connected directly to the pump via a specially coupling designed to ensure quiet operation.
    - .2 The motor will have an electrical insulation system rated by standard NEMA classifications "class F";
    - .3 The motor will be designed for a minimum of 80 departures per hour;
    - .4 The motor horse power will be determined by the manufacturer of the hydraulic machine drive;
    - .5 Provide and install on the oil tank a nameplate in accordance with clause 9.1 of CSA-B355.
  - .3 Use as hydraulic fluid Mobil EAL 224H which is formulated from vegetable oil with a high viscosity index and specific additives for this type of device.
  - .4 Supply and install the hydraulic drive in an oil tray (small holding tank)
    - .1 The perimeter of the oil tray must be no more than 50 mm more than the perimeter of the storage tank.

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- .9 The oil tray will be seated on neoprene dampers of adequate density and resistant to oil, to reduce vibrations transmitted to the building floor.
- 2.2 Shutoff Valve, Pressure Piping, Flexibles hose and Fittings Assemblies
- .1 Provide a hydraulic shutoff valve between the machine drive and the jack assembly and shall be located adjacent to the machine drive in the machine room,
    - .1 The installation shall comply with the requirements of the clause 6.6.2.4 of CSA-B355.
  - .2 Provide a hydraulic line (flexible hose or the ridge pipe), either case they shall comply with the requirements of clause 6.6.1.7 of CSA-B355.
    - .1 If a hydraulic flexible hose is used in the installation, the bend radius of the flexible hose shall comply with the requirements of the clause 6.6.1.7.1 (a) of CSA-B355.
    - .2 Ensure that the hydraulic line does not come into direct contact with any part of the building elements.
    - .3 All penetrations of the architectural components through the pipe, between the tank and the jack, must be carried out in such a way as to avoid any contact between the pipe and the elements to be crossed. Seal with an acoustic sealant and fire resistant around the pipe.
    - .4 If the hydraulic line is a ridge pipe, provide piping supports.
      - .1 Piping shall be supported to eliminate undue stress at joints and fittings, particularly at any section of the line subject to vibration.
      - .2 The spacing between pipe supports must comply with the requirements of the manufacturer of the joints and fittings.
- 2.3 Control Panel (Controller)
- .1 The manufacture of the control panel shall comply with all the requirements:
    - .1 Clause 8.4.2 and 8.4.3 of CSA-B355;
    - .2 ASME Code A17.5 / CSA B44.1.
  - .2 The control panel cabinet will be self-supporting at a vertical height of 1220mm from the floor of the machinery space.
  - .3 The control panel shall consist of a NEMA 1 painted metal box, appropriate size to contain all necessary components.
  - .4 The control panel will be equipped with a hinged door equipped with a key lock cam.
  - .5 Provide all documentation and technical information, in both paper and electronic format, to allow any elevator maintenance company to troubleshoot the controller.
- 2.4 Auxiliary power (storage batteries) supply.
- .1 Provide an automatic emergency lowering system during a power failure, the displacement of the elevating device.
    - .1 The auxiliary power supply shall be used only to lower the carriage in the event of a main power failure and shall comply with clause 8.1 of CSA-B355.
    - .2 The auxiliary power supply shall have the necessary power to allow the door to be opened at the landing when it has returned to the extreme lower landing.
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- .3 The auxiliary power supply shall comply with the requirements of clause 8.3.3.2 and 8.3.3.3 of CSA-B355.
- 2.5 Pipe and electrical wiring
    - .1 Provide all necessary piping for the electrical connection of components.
    - .2 The installation of the pipe and electrical wiring shall comply with the requirements of clause 8.1 of CSA-B355 and Electrical Code C22.1-06.
  - 2.6 Hydraulic plunger and Deflecting Sheave
    - .1 The manufacture of the hydraulic jack assembly shall comply with the requirements of section 6.6.1.1 of CSA-B355.
    - .2 The top of the cylinder shall be equipped with a cylinder head with an internal guide ring and self-adjusting packing.
    - .3 The plunger shall be provided with a stop ring installed at the bottom to prevent the plunger from leaving the cylinder.
    - .4 The displacement of the hydraulic piston shall operate with a minimum of friction.
    - .5 The visible portion of hydraulic cylinder / piston assemblies shall be clearly and indelibly marked with the following information:
      - .1 The manufacturer's name or trade mark;
      - .2 The type or model designation;
      - .3 The date of manufacture.
    - .6 Provide a deflecting sheave in accordance with clause 6.2.3 of CSA-B355.
    - .7 Provide an oil leak collection device at the cylinder head or cylinder stuffing box gasket. (see Appendix B.3.4 of CSA-B355)
  - 2.7 Suspension Steel Cables
    - .1 Provide steel suspension cables, it shall comply with the requirements of clause 6.2.1.1 and 6.2.1.2 of CSA-B355
    - .2 For the use of aircraft cables, use MIL 83420 **(no exception)**
    - .3 Provide attachment of suspension means.
      - .1 The installation of fasteners shall comply with the requirements of clause 7.2.2 of CSA-B355
  - 2.8 Landing entrance and door panel: Architectural Frames, Structural Frames and doors
    - .1 Provide complete landing entrance swinging door panel.
      - .1 Dimensions are: 915mm wide x 2 135mm high
    - .2 The manufacture of landing entrance and door shall comply with the requirements of clauses 5.2.1 and 5.2.5.6.3 of CSA-B355.
    - .3 The installation of each landing entrance shall comply with the requirements of section 5.5 of CSA-B355.
    - .4 Provide at each landing entrance an extruded threshold stainless-steel brushed finish No. 4 with non-slip stride surface. The threshold must be level in relation to the adjacent resilient floor finish.
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- .5 The finish of architectural frames and doors panels will be painted as per Section 09 91 00, System No. 6.
  - 6 Provide each door panel with the following components:
    - .1 Hardware provided to match door hardware elsewhere in project as per Section 08 71 00 (colour, finish, manufacturer).
    - .2 A kick plate, 254mm high throughout the width of the door panel, stainless steel brushed finish No. 4, fastened to the leaf surface, inner side of the duct, with stainless steel screws flat-headed;
    - .3 Provide a stainless steel brushed finish No. 4, push plate, fastened to the door panel surface, inner side of the hoistway, with flat-head stainless steel screws;
    - .4 Provide a handle with stainless steel brushed finish No. 4 plate, fasten to door panel surface, outer side of hoistway, with flat head stainless steel screws;
    - .5 Provide a protective sheet metal between the underside of the upper landing threshold and the transom (header) of the entrance frame of the lower landing.
      - .1 The manufacture of the protective sheet will be stainless-steel brushed finish No. 4;
      - .2 The sheet metal shall be smooth and at least 1.4mm thick;
      - .3 The sheet metal shall cover the entire width of the threshold of the landing entrance and be well secured to the interior hoistway wall;
      - .4 The clearance between the protection plate and the access side of the platform shall comply with clause 5.5.1 (a) of CSA-B355.
- 2.9 Landing Inlets: Landing Door Unlocking Devices
- .1 Provide, at each landing entrance, a device for mechanical unlocking of the landing door.
  - .2 The installation of the device shall comply with the requirements of the clause 5.2.1.1 f) 2 of CSA-B355.
- 2.10 Mechanical Limits
- .1 Provide and installation of end stops must comply with clause 5.3 of CSA-B355.
- 2.11 Access under the platform
- .1 Provide a mechanical device in accordance with clause 5.4.1 of CSA-B355.
    - .1 Paint mechanism in yellow.
  - .2 Provide installation of sign in accordance with clause 9.2 of CSA-B355.
    - .1 The sign must be secured on the wall near the stop switch in the pit.
- 2.12 Emergency Stop switch in the pit
- .1 Provide a push-button type stop switch with red punch and assembled to a yellow housing.
  - .2 The stop switch shall be of the lockable by padlock type.
- 2.13 Speed-Limiting device
- .1 Provide R10 speed-limiting device (flow restrictor) from Blain Hydraulic manufacturer.
  - .2 Install flow restrictor directly to oil inlet of hydraulic jack.
  - .3 The speed-limiting device shall comply with the requirements of clause 6.6.5 of CSA-B355.
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- .4 The flow restrictor shall bear a clear and indelible marking giving the following information:
  - (a) the name or trade mark identifying the manufacturer;
  - (b) the type of limiter;
  - (c) the nominal pressure; and
  - d) the minimum and maximum flow rates.
- .5 Testing shall be done and once the tests are completed, seal the valve of the flow restrictor.

#### 2.14 Carriage (Cab): Capacity, Rated Load and Size

- .1 Provide a carriage designed for wheelchair-and-attendant platform, which may be used by two persons, one standing and one sitting in a wheelchair, or both standing;
- .2 The platform size that we will need is as follow:

Capacity	Rated Load	Size platform		Size interior of carriage	
2 persons and wheelchair	454Kg	width	length	width	length
		965mm	1 568mm	876mm	1 524mm

- .3 The construction of the carriage shall comply with the requirements of the clause 7.2.1 of CSA-B355.
- .4 The safety factor shall comply with the requirements of the clause 4.6 of CSA-B355.
- .5 All welding work shall comply with the requirements of clause 4.7 of CSA-B355.

#### 2.15 Carriage (Cab): Safeties and car guiding members

- .1 Provide car safety mechanism that will be actuated by the breaking or slack of the suspension means of the cab.
  - .1 The operation of the car safety mechanism shall comply with the requirements of clause 7.2.5.1 (c), (d), (e) and (f) of CSA-B355.
- .2 The car-sling (structural frame) shall be retained on each guide by upper and lower guide members attached to the car-sling.
  - .1 The car-sling and its guiding members shall be design to withstand the forces resulting from the load conditions for which the carriage was designed and installed (see Article 4.6 of Standard B 355).
  - .2 Provide nylon shoe type guides filled with molybdenum disulfide molecule or equivalent.

#### 2.16 Carriage (Cab): carriage platform and floor covering

- .1 Provide a cab platform, the construction of which will comply with section 7.3.1.1 of Standard B 355.
- .2 Provide to the cab floor a linoleum flooring. The floor covering shall be a minimum of 2.5 mm thick, non-skid, "commercial grade".
  - .1 The color, pattern and model will be in accordance with Section 09 65 00 coordinated with resilient floor adjacent to the wheelchair lift

#### 2.17 Carriage (Cab): Enclosure and design

- .1 Cab enclosure shall be constructed of three (3) walls and one (1) ceiling.
  - .1 The wall of the cab enclosure shall be removable hanging panels and securely fastened with concealed fasteners and accessible from inside the cab.

- .1 The face of the removable panels shall be cover with laminate plastic lining. Product chart must contain a large choice of textures and colors, including a large choice of bright solid colour, wood grains and geometric patterns. The color or pattern will be approved by the Departmental Representative
- .2 Install between the removable hanging panels some stainless-steel battens, brushed finish # 4.
- .3 Provide a non-load bearing ceiling structure panel with an “egg crate” style panel bordered by the panel with four (4) recessed L.E.D light fixture into the border panel, color temperature: 3000K.
  - .1 The face of the ceiling panels shall be cover with laminate plastic lining. Product chart must contain a large choice of textures and colors, including a large choice of bright solid color, wood grains and geometric patterns. The color or pattern will be approved by the Departmental Representative.
  - .2 The ceiling shall comply with the requirements of the clause 7.32. (a) of CSA-B355.
- .4 Provide, on one side wall, a 38mm diameter stainless-steel brushed finish # 4 tubular handrail and with both ends returned to the wall of the carriage
  - .1 The location and installation shall comply with the requirements of the clause 7.7.5 of CSA-B355

#### 2.18 Carriage (Cab): Operating Device (C.O.P)

- .1 Provide inside the carriage an operating control panel an it shall comply with the following description:
  - .1 The operating panel shall be a stainless-steel plate #12 gage brush-finish #4;
  - .2 The stainless-steel plate will be assembled to a box #16 gage with two (2) sturdy hinges;
  - .3 Intergrade in the operating panel the following components:
    - .1 Constant pressure buttons or rocker switches:
      - .1 The buttons shall have a diameter or dimensions of at least 19mm and be raised by at least 1.5 mm;
      - .2 The button shall be equipped with an indicator light that lights up as soon as it is press;
      - .3 The button shall be marked with an arrow corresponding to the meaning moving the carriage;
      - .4 This arrow must shall be in relief, placed on the button or on the left, a color contrasting with the button;
    - .2 A rocker switches for the emergency stop/alarm;
      - .1 The emergency stop shall comply to the requirement of the clause 8.5.2.1 of CSA-B355.
      - .2 The alarm shall comply to the requirement of the clause 8.3 of CSA-B355.
    - .3 A hand free ADA telephone with a push button with an international symbol;
      - .1 The telephone shall be equipped with an auto-dialer and illuminating indicator which shall illuminate when a call has been placed and begin to flash when the call has been answered.
      - .2 Engraving shall be provided next to the indicator which says, “Call Answered When Light Flashing” in three languages.
    - .4 A battery operated light fixture and alarm;
      - .1 The light fixture shall be installed on the same wall and above the operating device.



- .5 A two-position key switch.

## 2.19 Landing Station

- .1 Provide at each landing a landing station with the following description:
  - .1 The operating panel shall be wall mounted recessed stainless-steel plate #12 gage brush-finish #4;
  - .2 The stainless-steel plate will be assembled to a box #16 gage.
    - .1 Constant pressure buttons:
      - .1 The button shall have a diameter or dimensions of at least 19 mm and be raised by at least 1.5mm;
      - .2 The button shall be equipped with an indicator light that lights up as soon as it is press;
      - .3 The button shall be marked with an arrow corresponding to the meaning moving the carriage;
      - .4 This arrow must shall be in relief, placed on the button or on the left, a color contrasting with the button;
      - .5 A signal device marked "Platform in use" in three languages shall be located adjacent to or within the pressure buttons.

## 2.20 Key box

- .1 Provide and install a key box with code of adequate dimension to store the keys of the wheelchair lift and locking mechanism. Refer to Section 08 71 00.
- .2 Install key box adjacent to the wheelchair lift controls in the mechanical room, center at 1520mm height. Exact location to be coordinated on site.
- .3 Supply for each key switch five (5) keys.

## 3.0 EXECUTION

### 3.1 EXAMINATION

- .1 Examine substrates, areas, and conditions, with installer present, for compliance with requirements installation tolerances, critical dimensions, and other conditions affecting performance of the Work.
- .2 Verify required supports are correct.
- .3 Verify electrical rough-in is at correct locations.

### 3.2 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.

### 3.3 INSTALLATION

- .1 Install platform lifts in accordance with in compliance with regulatory requirements specified and the manufacturer's instructions.
- .2 Install system components and connect to building utilities.

- .3 Accommodate equipment in space indicated.
- .4 Startup equipment in accordance with manufacturer's instructions.
- .5 Inspection and test requirements by of CSA-B355.
- .6 Adjust for smooth operation.

### 3.4 FIELD QUALITY CONTROL

- .1 Perform tests in compliance with regulatory requirements specified and as required by authorities having jurisdiction.

### 3.5 PROTECTION

- .1 Protect installed products until completion of project.
- .2 Touch-up, repair or replace damaged products before Substantial Completion.

## SECTION 4. Related work by other trades

### 4.1 Coordination with other trades

- .1 When work is related to that of another trade, provide shop drawing showing dimensions and method of connecting work to other trades and details, such as anchors, templates and drawings.

### 4.2 Work by other trades

- .1 All work of other trades than the wheelchair lift is the responsibility of the general contractor. He will be responsible for the coordination of the companies and will not be able to claim an omission or a conflict between the various trades.

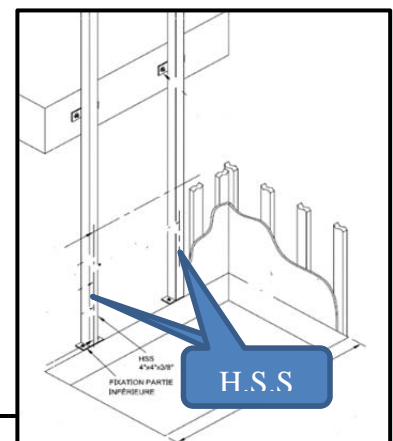
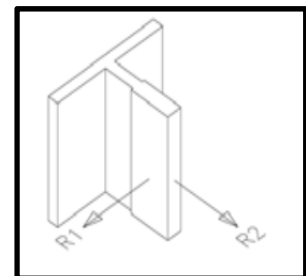
### 4.3 Related Work: Division 03 (concrete for information)

- .1 The following work, is required in parallel with the installation of the equipment. Refer to Structure.
- .2 Construct of a runway pit, shall meets the following requirements:
  - .1 The pit floor depth shall be a maximum of 235mm, measured from the floor of the first landing served by the cab platform to the floor of the pit.
  - .2 The resistance of the pit floor shall be designed and constructed for support, without permanent deformation, the loads applied as follows:
    - .1 The shock resulting from the attack of the car buffer or part of the load transmitted by the car safety engagement, this is estimated at 1 134kG;
    - .2 This reaction shall comply with the manufacture requirements and the elevator contractor.
- .3 If the pit is extending into the floor composition, it shall be designed to prevent entry of groundwater into the pit. Where the entry from other sources is anticipated, provision shall be made to prevent accumulation of water in the pit. Refer to Mechanical.

**Note 1:** If there is a fire sprinkler install at the elevator pit level, provision shall be made to prevent accumulation of water in the pit. Refer to Mechanical.

## 4.4 Related Work: Division 06 (Carpentry)

- .1 The following work, not included in this section, is required in parallel with the installation of the equipment.
- .2 Construct a runway enclosure (hoistway).
  - .1 The internal free dimensions of the hoistway, shall be as follows:
    - .1 Plan view: width 1 372mm by a depth of 1 676 mm;
    - .2 Vertical view: Overhead clearance minimum: 2 438mm;
    - .3 Vertical view: Pit depth: maximum of 235mm;
    - .4 The hoistway dimensions indicate the clear inside finished cavity. Allow for Hoistway finishing.
- .3 The construction of the runway enclosure (hoistway) shall comply with the requirements of section 5.1.1 of the B355.
  - .1 The enclosure shall be:
    - .1 solid, with smooth interior surfaces;
    - .2 constructed that it will not deflect more than 13mm when a force of 450 N is applied on a 150mm × 150mm area at the centre of any panel;
    - .3 constructed that no part of the upper edge of the runway enclosure is lower than the corresponding and adjacent upper edge of the platform enclosure when the platform is at any position in its travel; and
    - .4 fire rated;
    - .5 All the walls of the hoistway, especially the wall behind the cylinder and guide rails and the entrance walls, need to be flush and plumb from floor of the pit to the ceiling in the hoistway.
  - .2 This is to allow for the required running clearances.
- .4 The wall behind the cylinder and guide rails must be load bearing and able to withstand the loads imposed by the car platform.
  - .1 This is an estimated of minimum load bearing:
    - .1 Rail reaction: R1 = 181kg
    - .2 Rail reaction: R2 = 57kg
  - .2 These reactions shall comply with the manufacture requirements and the elevator contractor.
- .5 The wall can be constructed of combination of wood and two (2) vertical hollow structural steel (H.S.S) tube of 100mm x 100mm x 9mm.



- .6 Construction around the landing entrance frames.
    - .1 Do not construct the return wall on either side of the landing structure entrance until after the entrance frame have been aligned on site.
  - .7 The machine and control panel (controller).
    - .1 To satisfy code requirements, the hydraulic machine pump unit, the control cabinet and fused disconnect switches must be in a room or area which is lockable and not accessible by the public.
    - .2 However, to meet electrical code, Service Personnel must have a minimum 1 000mm square of working space in front of each disconnect switch and the control cabinet:
      - .1 The room will be located at a landing designated by the architect and adjacent to the hoistway.
      - .2 Ensure a free vertical height of 2 134mm between the floor of the machinery space and any components (luminaires, sprinkler heads, or structure) located on the ceiling of the room;
      - .3 These conditions must be confirmed elevator contractor.
    - .3 Provide one PVC sleeve, at least 100mm in diameter, be required between the hoistway and the machine room for the passage of electrical ducts and hydraulic hose line. The position has to be validated by the elevator contractor for more details.
  - .8 Provide barricades and protection of the hoistway and equipment from inclement weather during construction.
    - .1 Well protection must include the installation of solid panels with a minimum height of 1 220mm front of each elevator entrance at all levels.
    - .2 Guardrails must be installed, maintained and removed by the general contractor.
- 4.5 Related Work: Division 05 (metals for information)
- .1 The following work, not included in this section, is required in parallel with the installation of the elevator.
  - .2 Provide and install the necessary metal lintels above the architectural lintels of each landing entrance.
  - .3 Provide and install the hollow structural steel tubing (H.S.S.) tube of 100mm x100mm x 9mm.
    - .1 The position of these tubes shall be located according to the elevator contractor shop drawing.
  - .4 Refer to Structural.
- 4.6 Related Work: Division 07 (sealing for information)
- .1 The following work, not included in this section, is required in parallel with the installation of the elevator.
  - .2 Permanent means must be put in place to prevent any accumulation or infiltration of groundwater, if applicable.
    - .1 Do not install sump pump inside the hoistway.
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- 4.7 Related Work: Division 09 (finishing for information)
- .1 The following work, not included in this section, is required in parallel with the installation of the elevator.
  - .2 Patch walls and around landing entrances and signaling devices.
- 4.8 Related Work: Division 21 (Fire Fighting for Information)
- .1 The following work, not included in this section, is required in parallel with the installation of the elevator.
  - .2 Refer to Mechanical for location of automatic sprinklers installation and requirements.
- 4.9 Related Work: Division 22 (Plumbing for Information)
- .1 The following work, not included in this section, is required in parallel with the installation of the elevator.
  - .2 Refer to Mechanical for floor drain in the hoistway and other requirements.
- 4.10 Related Work: Division 23 (Heating, Ventilation and Air Conditioning for Information)
- .1 The following work, not included in this section, is required in parallel with the installation of the elevator.
  - .2 Provide heating, ventilation and air conditioning equipment that will maintain continuously (ie 24 hours a day). Refer to Mechanical:
    - .1 The elevator pump unit will generate approximately 3200 BTU per hour under normal operating conditions.
    - .2 Recommended temperature for elevator equipment is (15° – 32° C) and 5% – 90% non-condensing
- 4.11 Related Work: Division 26 (Electricity for Information)
- .1 The following work, not included in this section, is required in parallel with the installation of the elevator.
  - .2 The installation of equipment and wiring must comply with the requirements of section 38 - 000 - Standard C22.10-10.
  - .3 In the mechanical room and area where the lift control and system will be installed, provide the following. Refer to Electrical:
    - .1 One (1) lockable fused disconnect device of 30 amps for the pumping unit.
      - .1 Provide in the disconnect means one (1) auxiliary dry contact for emergency battery lowering device.
      - .2 The estimate rating of the motor amperage is 3HP and it shall be validated on the shop drawing.
    - .2 One (1) fused disconnect device of 15 amps for the light system inside the platform car.
    - .3 Disconnect device shall be located on the lock jamb side of the machine room door. In accordance to the electrical code, you must provide a minimum 1 000mm square of working space in front of each disconnect switch.
    - .4 At least one GFCI duplex receptacle wall outlet connected to a dedicated 15 amps branch circuit
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must be installed in the machine room.

- .5 Installed on the ceiling of the machine room near the control panel a light fixture with a protector.
  - .1 The intensity shall be of 200lx at the floor level of the machine room.
  - .2 The light switch shall be located on the lock jamb side of the machine room door.
- .6 Supply and install a junction box and wiring for the building's Telecom Communication Network System. A box (jack) should be near the controller
- .7 Install a smoke detector in the center of the ceiling of the machine room.
- .8 Provide a smoke detector at the top of the hoistway.
- .9 Provide in the hoistway pit the following electrical equipment:
  - .1 One permanent light fixture with a protector and with a lighting intensity of at least 100lx at floor level;
  - .2 The light switch must be accessible from the landing sill of the landing entrance at the first floor;
  - .3 Install a GFCI duplex receptacle wall outlet located on the wall and near the light switch and connected to a dedicated 15 amps branch circuit.
- .4 The general contractor shall provide temporary power for each elevator and during construction for the following accessories. Refer to Electrical:
  - .1 600V / 3ph / 60cycle power supply for Elevator Insulation Transformer;
  - .2 A lighting system and a double socket in area of the pumping unit and the controller;
  - .3 A lighting system and a double outlet located at each level in the hoistway;
  - .4 A lighting system and a double socket located in the pit.

**End of Section**