

PREPARATORY WORK BY OTHERS

The following items must be performed or provided at no cost to Otis Elevator Company ("Otis") by the Owner or General Contractor or their agents in accordance with governing codes. The price and installation schedule of Otis is based on these job-site conditions existing at the beginning and during the installation of the elevator equipment.

All work must be performed per the applicable national and or local codes.

General Prep/Work

- 1. Provide on-site storage area for elevator equipment as follows: dry and enclosed, provides rail--able access to the elevator hoistway at the ground level, located within 100 feet of the hoistway and is larger than 25 x 20 feet (7620 mm X 6096 mm) per unit. Any warranties provided by Otis for elevator equipment are null and void if equipment is stored in a manner other than a dry enclosed building structure.
- 2. Provide the use of a crane suitable for hoisting a load per contract layout for hoisting the machine and bedplate structure and the controller into place prior to enclosing the machine room. Also, provide adequate OSHA approved fall protection at the opening of the top of the hoistway on the roof. Fall protection must be adequate for two people and be in place prior to the hoisting of elevator equipment.
- 3. Provide sufficient on-site refuse containers for the proper disposal of elevator packaging material. Should sufficient refuse containers not be provided, disposal of packaging material shall become the responsibility of the owner.
- 4. Provide any cutouts to accommodate elevator equipment (troughing, venting, and hall fixtures), along with the patching/painting of walls, floors, or partitions together with finish painting of entrance doors and frames, if required.

Hoistway & Pit Prep/Work

- 5. Provide a clear plumb hoistway with variations from the size shown on the Otis layout not to exceed 1" (25mm) at the first 20 floors and 1/32" (0.8mm) increase for each additional floor up to a maximum of 2" (52mm) and not less than the clear dimensions shown on the Otis layout.
- 6. Provide adequate rail bracket supports, bracket spacing as required by governing code, from pit floor to top of hoistway. Adequate support for the top rail bracket to be installed not less than indicated by rail force and bracket spacing detail table on elevator layout. Separator beams where required. Rail bracket attachment supports must be exposed and flush with the clear hoistway line.

If the floor--to--floor height exceeds the maximum bracket spacing allowed by the elevator code, Otis requires some form of steel support to properly attach our guide rail brackets. The maximum allowed bracket spacing is indicated in the rail force and bracket detail table on elevator layout. Otis agrees to provide guidance on this matter at the appropriate time.

If rail bracket embedded plates or inserts are provided by Otis they shall be installed by others in accordance with Otis documentation and instructions.

If vertical tube steel is utilized as rail support, locations will be coordinated per contract layout.

- 7. Provide adequate support at all fastening points of each entrance. Provide plumb vertical surfaces for entrances and sill supports, one above the other, and square with the hoistway. For 4'-0" (1220 mm) and 4'-6" (1372 mm) two-speed door arrangement on 4500 lb. (2041 kg) and 5000 lb. (2270 kg) cars a hoistway attachment point is required for an auxiliary support bracket under the sill assembly in the center of the clear door opening. Finish floor and grout, if required, between entrances and building sill line. A horizontal support is to be provided 1 foot (305 mm) above the clear opening at the top landing to support the entrance assembly. If any other floor height exceeds 12'-0" (3657 mm), a horizontal support member is to be provided 1'-0" (305 mm) above the clear opening. If transoms are required then the support member would be 1'-0" (305 mm) above the transom height.
- 8. Prior to the start of installation, provide a dry, properly framed, enclosed and vented hoistway in accordance with all applicable codes.
- 9. When installing the elevator equipment using the Otis FIT method, it is a requirement that a temporary work platform is to be constructed at the top landing of the hoistway(s). The furnishing, installation, and removal of this temporary platform is to be provided by others in accordance with governing codes and regulations and is not included in the elevator contractor's scope of work.

The platform is to be located at the top landing of the hoistway(s) and shall be securely fastened to the building structure. The platform shall be designed for not less than 50-psf uniform live load and a concentrated point load of 500 lb.

The platform shall be installed complete with guardrails at the perimeter of any opening in the platform.

The working surface of the platform shall have within easy reach secure anchorage points for attachment of fall arrest lifelines, lanyards, or deceleration devices.

The design and installation of the temporary platform shall be in accordance with the applicable provisions of all federal, state and local codes and regulations including but not limited to the latest amendments of American National Standards Institute, Inc. (ANSI), the Occupational Safety and Health Act (OSHA), and the State Building Code in effect in the state in which the elevator is being installed.

Otis has a temporary work platform design that meets these requirements. Request a copy of Otis drawing AAA27CR for details.

- 9a. All overhead protection is to be furnished and installed by others. Several floors below the overhead protection a work deck is also to be provided. Otis agrees to provide guidance on this matter at the appropriate time.
- 10. A.) Protection from Falls:  
As required by the Occupational Safety and Health Administration (OSHA) 1926.502 B) (1-3) a freestanding removable barricade at each hoistway opening at each floor. Barricades shall be 42" (1067mm) high, with mid-rail and kick board, and withstand 200 lbs. of vertical and horizontal pressure.  
B.)Protection from Falling Objects:  
As required by the Occupational Safety and Health Administration (OSHA) 1926.502(j) hoistway protection from falling debris and other trades materials by either:  
1.)Full entrance screening/mesh in front of all elevator entrances  
2.)Secured/controlled access to all elevator lobbies (lock and key) with posted Notice "only elevator personnel beyond this protection."

Notes:  
Items A.) and B.) can be integrated systems.  
Hoistway barricades and screening shall be constructed, maintained and removed by others.

- 11. Provide a pit floor designed to sustain vertical forces (forces based on safety impact) on car and counterweight rails as shown in the rail force and bracket spacing table and impact loads on car and counterweight buffers as shown on the elevator layout. If tie down compensation is required, an embedded beam protruding 4" (102mm) above pit floor is to be installed to sustain reactions shown on layout. The pit must be dry and clean. The elevator pit must have a floor drain or sump pump to prevent the accumulation of water. Location to be coordinated with Otis to avoid all elevator components and access areas. In areas requiring Firefighter's Emergency Operation, a sump pump/drain shall be provided that shall have the capacity to remove a minimum of 11.4 m³/hr (3,000 gal/hr) per elevator (2.2.2.5, ASME A17.1-2010/CSA B44-10.) Otis recommends that the owner verify the drain or sump pump system is in compliance with all applicable codes and laws.
- 12. One front entrance wall, at the main landing, is not to be constructed until after all elevator material is located in the hoistway. Remaining front entrance walls are not to be constructed until after door frames and sills are in place. If front walls are poured concrete bearing walls, rough openings are to be provided to accept entrance frames and filled in after frames are set. Rough opening size per Otis layouts. Prior to the elevators being turned over, all entrance walls must be installed and rough openings filled in complete.

- 13. Provide and install a fixed vertical iron ladder in each pit as required by governing code and located per Otis layouts or as coordinated with Otis personnel. Ladder width and projection from wall per local code. If pit depth is greater than 9' 10" (3000mm) [13' 9" with no floor below bottom landing], a pit access door is required.
- 14. Install a permanent light fixture in each elevator pit with illumination of not less than 100 lx (10 fc) as measured at the pit floor. The light bulb(s) shall be externally guarded to prevent contact and accidental breakage. The light switch shall be so located as to be accessible from the pit ladder or access door.
- 15. Provide and install guarding of counterweight in a multiple-elevator hoistway as required, when a counterweight is located between elevators, the counterweight runway shall be guarded on the side next to the adjacent elevator. The guarding must meet or exceed the requirements of ASME A17.1-2010, section 2.3.2.3.  
a. Provide and install guarding between a multiple-elevator hoist way as required. The guarding must meet or exceed the requirements of ASME A17.1-2010, section 2.2.3
- 16. If pit depth is greater than 8' 3" (2515mm) a platform for accessing the equipment on the underside of the car is required per ASME A17.1 Rule 2.2.8. The platform shall:  
a. Be coordinated with Otis personnel to interface with Otis' elevator equipment.  
b. Maintain clearances and refuge spaces as defined in all applicable codes.  
c. Be equipped with OSHA compliant guardrails when a fall hazard exists.  
d. In seismic risk zone, comply with all applicable building code requirements to restrain it due to ground acceleration during an earthquake  
e. Be designed and installed to support without permanent deformation on the following loads: Minimum of 80 lb/ft2 (390kg/m2) evenly distributed over the entire servicing platform area, minimum of 225 lb. (100kg) concentrated load on any 3 in.2 (2000mm2) area.
- 17. Glass used in hoistway construction must block 98% or more of incident full-spectrum ultraviolet radiation for the full height of the hoistway.
- 18. If an emergency door in a blind hoistway is required, provide a outward swinging single section type door with door closer and a self closing barrier per ASME A17.1-2010, section 2.11.1.2. Contact your local Otis personnel for a detailed drawing (AAA26900D-FMI), showing Otis specific requirements.
- 19. Additional door or devices, that are not part of nor function with the elevator but are provided in lieu of an enclosed elevator lobby in order to guard against the migration of smoke in or out of the hoistway, shall comply with A17.1-2013,section 2.11.6.3.

Machine Room Prep/Work

- 20. Provide a suitable machine room with access and ventilation in accordance with all applicable codes and regulations with a reinforced concrete structural slab that complies with the elevators contractor's detail template. Design shall meet ASME/ANSI A17.1 or CAN3B44 code requirements to support the forces shown on the elevator layout and design criteria documented in Otis' confirmation of structural slab form. Machine beams are not required with a structural slab arrangement. Otis will provide a template indicating blockouts and penetrations in the machine room slab, all of which must be precisely followed. The machine room shall be maintained at a temperature between 32°F (0°C) and 104°F (40°C) to be measured 6 feet (1830 mm) above the floor and 1 foot (305 mm) out from the front center of the car controller(s). Relative humidity is not to exceed 95% non-condensing. Provide ventilation to suit Otis heat release amounts as shown on the Otis Confirmation of Power Supply form. Local codes may require tighter temperature ranges and higher ventilation levels, please check with your local code authority for the exact requirements in your area. If your machine room temperatures exceed these requirements, contact your local Otis sales representative for assistance.
- 21. Install a permanent light fixture in the machine room of not less 200 lux (19fc) as measured at the floor level. Light switch is to be located within 18" (157mm) to the lock jamb side of the access door of the machine room.
- 22. Provide machine room with self-closing and self-locking doors with group 2 locking device.
- 23. Location of steel or concrete supports in the hoistway overhead (machine space) for the elevator beams and channels as required by elevator contractor.
- 24. Provide a steel safety beam capable of providing a net live load of 9920 lbs (4500 kg) located per this drawing.
- 25. Access to other locations within the building or access to machinery and equipment not related to elevators through the machinery space, machine room, control spaces, or control rooms shall not be permitted. Refer to A17.1-2013.

Fire Prevention Prep/Work

- 26. Provide hoistway walls designed and constructed in accordance with the required fire rating (including those places where elevator fixture boxes, rail bracket fastenings, and any other penetration into the hoistway walls).
- 27. In the United States, provide smoke detectors, located as required, with wiring from the sensing devices to the controller(s) designated by Otis.  
a. For each group of elevators, provide a normally closed contact representing the smoke detector at the designated return landing.  
b. For each group of elevators, provide a normally closed contact representing all smoke detectors located in lobbies, hoistways, or control rooms/spaces, but not the smoke detector at the designated return landing (see above) or the smoke detectors as described in i. & ii. below.  
i. If a smoke detector is located in the hoistway at or below the lower of the two recall landings, it shall be wired to activate the same normally closed contact as the smoke detector located in the lobby at the lower of the two recall landings.  
ii. If the control room(s)/space(s) are locate at the designated return landing, the smoke detectors located therein shall be wired to activate the same normally closed contact as the smoke detector at the designated landing.
- c. Requirements for intermittently illuminating the fire hat visual signal in the car operating panel, either i. or ii apply.
- i. For a single unit or for a group of elevators having one common control room/space and one common hoistway, provide one additional normally closed contact representing the control room/space and hoistway smoke detectors.  
ii. If the group contains more than one hoistway and hoistway smoke detectors are installed, or if the group has more than one control room/space, provide one normally closed contact for each elevator. The contact is to represent the smoke detector in the control room/space for that particular elevator, and any smoke detectors in the hoistway containing that particular elevator
- 28. In Canada provide smoke detectors, located as required, with wiring from the sensing devices to the designated controller(s) return landing.  
a. For each group of elevators, provide a normally closed contact representing the smoke detector at the designated return landing and if provided, from the sensing device in the pit.  
b. For each group of elevators, provide a normally closed contact representing all smoke detectors located in elevator lobbies, but not the smoke detector at the designated return landing (see above.), and if provided, from the sensing device in the top of the hoistway.  
c. For each group of elevators, provide a normally closed contact representing the smoke detector in the elevator machine room/control room/control space.  
d. If the machine room/control room/control space is located at the designated return landing, the smoke detectors located therein shall be wired to activate the same normally closed contact as the smoke detector at the designated landings. For each group of elevators, provide in addition to the above, a normally closed contact representing the sensing devices in the machine room, and if provided in the pit or at the top of the hoistway. (For the Fire Hat in the Elevator)
- 29. In the United States, if sprinklers are installed in the hoistway(s), control room(s)/space(s), or machine mounting structure space(s), a means to automatically disconnect the main line power supply of the affected elevator and any other power supplies used to move the elevator upon or prior to the application of water is required (unless prohibited by local code.)
- 30. Provide machine room and door to code compliant fire-resistive construction.
- 31. Provide an "ABC" fire extinguisher, minimum 10 lbs in all machine rooms.


Electrical Requirements

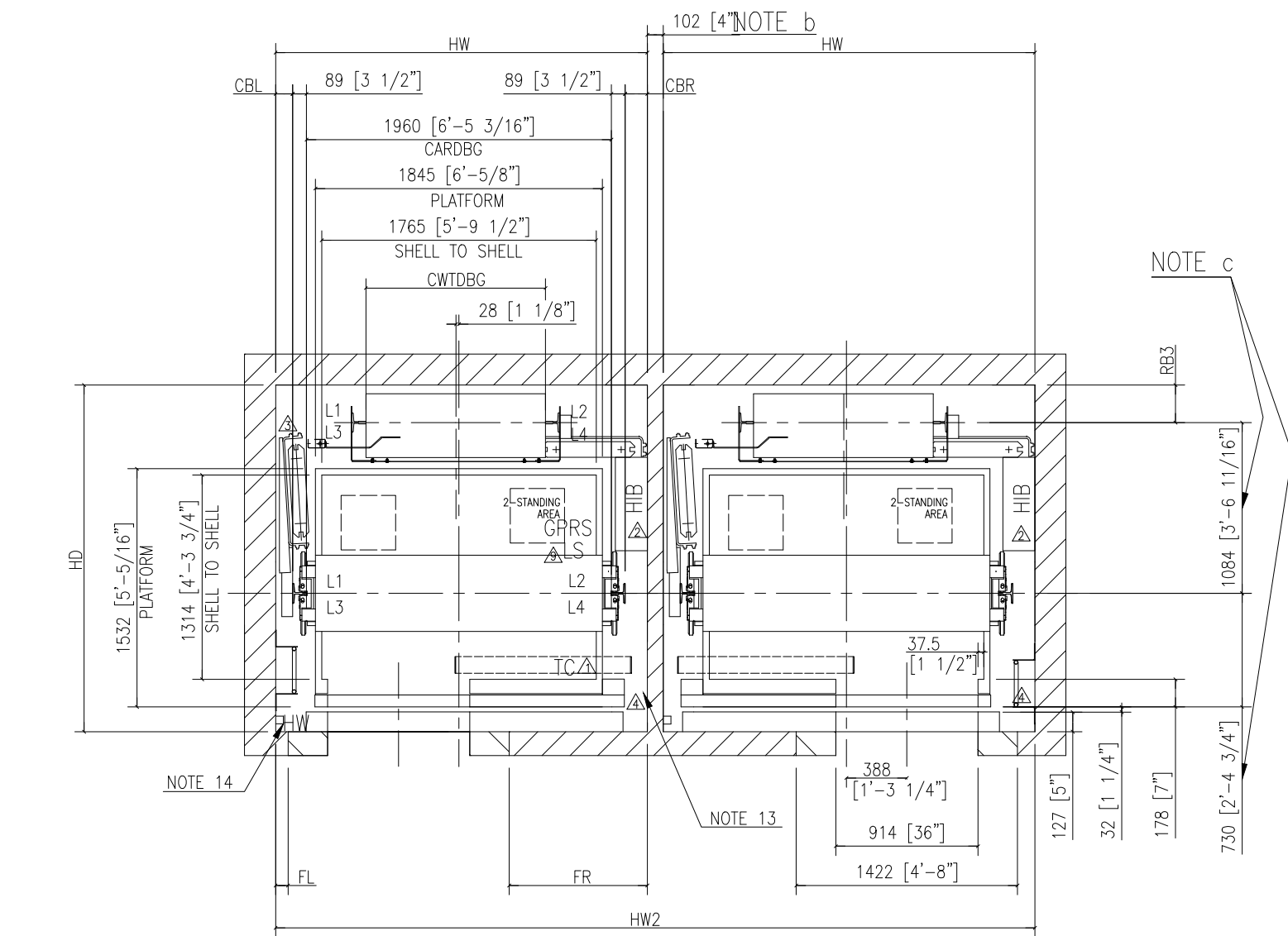
- 32. When installing the elevator equipment using the Otis FIT method or the Otis Enhanced False Car method, prior to the start of installation provide a permanent three (3) phase electrical feeder system with a separate equipment grounding conductor terminating in the control room/space, located per Otis layout. When installing the elevator equipment using the Otis False Car method, prior to the start of installation, provide a single phase 220V, 50 ampere, power supply with fused disconnect or circuit breaker for each elevator with a separate equipment grounding conductor terminating in the control room/space, located per Otis layout.  
Feeder conductors and grounding conductor sized according to elevator current characteristics as shown on the Otis Confirmation of Power Supply form. Feeder conductors and grounding conductor must be copper. A fused disconnect switch or circuit breaker capable of being locked in the open position, for each elevator per the National Electrical Code (ANSI/NFPA 70) or Canadian Electrical Code (C22.1) with feeder or branch wiring to controller [NEC 620-51, 620-61 (D), and 620-62] or [CEC Rule 38-013(2)(a)]. Fuses are to be current limiting class RK1 or equivalent. Circuit breakers are to have current limiting characteristics equivalent to class RK1 fuses. Fuses or circuit breakers are to be time delay to cover the full load up accelerating current as listed in the Otis Confirmation of Power Supply form. The disconnecting means required by the National Electrical Code/CEC [Rule 38-051] shall be provided with all associated wiring and conduit to the controller. Size of main contacts to suit elevator power characteristics. Feeder conductors and associated wiring to the controller to be sized to limit wiring voltage drop to 5% maximum when delivering elevator full load up accelerating current.
- 33. Provide a dedicated 125-volt, 15-ampere single-phase branch circuit; with a fused disconnect switch or circuit breaker. This disconnect or breaker shall be capable of being locked in the open position and located per the Otis layout. This branch circuit supplies the car lights, car top receptacle, auxiliary lighting power source, and ventilation on each car in compliance with the National Electrical Code [NEC 620-53] or Canadian Electrical Code [CEC Rule 38-053].
- 34. Provide a dedicated 125 volt, 15 ampere single-phase power supply with a fused SPST disconnect switch or circuit breaker for remote monitoring. This disconnect or breaker shall be capable of being locked in the open position and located per the Otis layout, National Electrical Code [NEC 620-53] or Canadian Electrical Code [CEC Rule 38-053.]
- 35. All 125 volt, 15 or 20 ampere single-phase receptacles installed in pits, machine spaces, control room(s)/space(s) shall be of the ground-fault circuit-interrupter type. A dedicated single-phase receptacle supplying a permanently installed pit sump pump shall not require GFCI protection.
- 36. Provide electric power for lights, tools, welding, hoisting, etc. during installation with sufficient power for starting, testing and adjusting the elevator.
- 37. Provide one (1) dedicated outside telephone line, per group, to the elevator control room/space, and terminated at the controller designated by the Otis construction superintendent.
- 38. In areas under the jurisdiction of ASME A17.1-2010/CSA B44 or later where the elevator travel is greater than or equal to 60 feet /18 meters, provide two-way voice communications means that shall enable emergency personnel within the building to establish communications to each car individually without intervention by a person within the car. The communication means shall override communications to the outside of the building and once established shall only be terminated by emergency personnel outside the car. Refer to ASME A17.1-2010 CSA B44 or later, section 2.27.1.1.4 for exact requirements.
- 39. [Optional] For elevators having an intra building intercom, provide a separate 120 volt, 15 ampere, single phase power supply with fused SPST disconnect switch or circuit breaker, located as required for inter-communicating system power supply. Circuit to be arranged for feeding from the building emergency lighting supply if provided. Conduit and wiring for remotely located inter-communicating stations.
- 40. [Optional] For installations having a lobby panel, provide wiring and conduit to panels located away from the elevator hoistway for remote elevator control/indicator panels.
- 41. [Optional] For installations having emergency (standby) power, provide the emergency (standby) power unit and means for starting it. The emergency (standby) power unit shall deliver to the elevator via disconnect switches in the control room/space, sufficient power to operate one or more elevators at a time at full rated speed, and rated load. The Emergency (standby) Power source shall be sized to handle the regenerated power from the elevator control drive system(s) as listed in the Otis Confirmation of Power Supply Form.  
  
An automatic Power Transfer Switch for each power feeder to monitor both normal and emergency (standby) power conditions and to perform the transfer from one to the other. Switch to have two sets of normally closed dry contacts, one to be open when the switch is in the emergency (standby) power position; the other to open upon initiation of power transfer and to close when transfer is complete. Switch to have an inhibit function which will delay transfer to normal and/or emergency (standby) power by an adjustable period of 0 - 300 seconds. Switch shall have a phase monitor feature, which prohibits the transfer of power between "live" sources unless the sources are in phase with each other. If a shunt trip device is provided, an additional normally closed contact, with all associated wiring and conduit to the controller, is required from the emergency (standby) power source. The emergency (standby) power unit must be capable of absorbing regenerative power per elevator in accordance with ANSI/NFPA 70 requirement 620.91
- Emergency (standby) power system shall be connected to 125-volt power circuit as noted in note A.2. of the Power Confirmation for the branch circuit supplying the car lights, car top receptacle, auxiliary car lighting power source and car ventilation
- 42. [Optional] For each group of elevators (2 or more cars), provide a permanent three (3) phase electrical feeder system with a separate equipment grounding conductor terminating in the control room/space, independent of the main elevator power supply and located per Otis layout. Also provide a fused disconnect switch or circuit breaker capable of being locked in the open position, per the National Electrical Code (ANSI/NFPA 70) or Canadian Electrical Code (C22.1) with feeder or branch wiring to controller [NEC 620-51, 620-61 (D), and 620-62] or [CEC Rule 38-013(2)(a)]. Feeder conductors and grounding conductor sized according to elevator current characteristics as shown on the Otis Confirmation of Power Supply form.
- 43. [Optional] For installations with Compass, provide dedicated 125-volt, 15-ampere single-phase branch circuit(s); with fused disconnect switches or circuit breaker(s) per each Compass Machine Room Cabinet (1 per group or two per group if auxiliary Compass controllers are required) and 1 for the Redirector (required with building wide dispatching). This disconnect or breaker shall be capable of being locked in the open position and located per the Otis layout. This branch circuit should be in compliance with the National Electrical Code [NEC 620-53] or Canadian Electrical Code [CEC Rule 28-106].

You agree to indemnify and save Otis harmless against any and all liability and costs arising out of your failure to carry out any of the foregoing requirements.

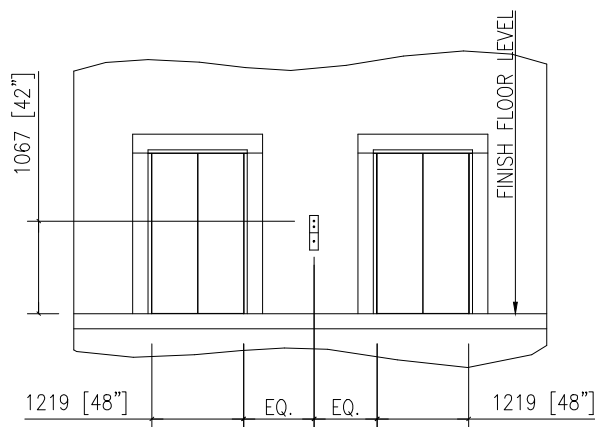
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 Otis A United Technologies Company		SKYRISE	
AREA		DWG.NO.	NSAA_AAA28100HS
TYPE ELEV. PASSENGER ELEVATOR		BUILDING	
MACH. GEARLESS 1:1		LOCATION	
LOAD-SPEED: SEE LOAD SPEED CHART		OWNER	
OPERATION: E2-FULL SELECTIVE		ARCHT.	
CONTROL: V.V.V.F.		DATED-PRELIM.	FINAL
		DRAFTER	CHKD.BY
		3 SHEETS	SHEET 1



HOISTWAY PLAN VIEW



HALL BUTTON LOCATION DETAIL

REACTION LOADS ON PIT FLOOR		
	KIP	kgf
CAR BUFFER LOCATION	32.74	14849
CWT BUFFER LOCATION	33.23	15071
AT EACH CAR RAIL	32.36	14677
AT EACH CWT RAIL WSAFE	27.32	12391
AT EACH CWT RAIL WOSAF	14.87	6744

HOISTWAY PLAN VIEW DIMENSIONS				
	SEISMIC ZONE <2		SEISMIC ZONE >=2	
	CWT WOSAF	CWT WSAFE	CWT WOSAF	CWT WSAFE
HW	2300 [7'-6 9/16"]	2390 [7'-10 1/8"]	2370 [7'-9 5/16"]	2390 [7'-10 1/8"]
HW2	4700 [15'-5 1/16"]	4880 [16'-1/8"]	4840 [15'-10 9/16"]	4880 [16'-1/8"]
HD (A1710/A1709)	2130 [6'-11 7/8"]	2210 [7'-3"]	2140 [7'-1/4"]	2230 [7'-3 13/16"]
HD (A17A08/A1707)	2206 [7'-2 7/8"]	2286 [7'-6"]	2216 [7'-3 1/4"]	2306 [7'-6 13/16"]
FL	797 [2'-7 3/8"]	856 [2'-9 11/16"]	860 [2'-9 7/8"]	860 [2'-9 7/8"]
FR	81 [3 3/16"]	112 [4 7/16"]	88 [3 7/16"]	108 [4 1/4"]
RB3	202 [7 15/16"]	247 [9 3/4"]	197 [7 3/4"]	252 [9 15/16"]
CWTDBG	1308 [4'-3 1/2"]	1156 [3'-9 1/2"]	1308 [4'-3 1/2"]	1156 [3'-9 1/2"]
CBL	111 [4 3/8"]	110 [4 5/16"]	95 [3 3/4"]	95 [3 3/4"]
CBR	51 [2"]	142 [5 9/16"]	99 [3 7/8"]	119 [4 11/16"]

RISE<=220m				
SEISMIC ZONE	<2	=2	>2	
	R1 [kgf]	248	248	248
	R2 [kgf]	18	18	18
	R3 [kgf]	6124	6124	6124
	Vx [kgf]	-	492	985
	Vy [kgf]	-	246	492
CAR	MAXIMUM BRACKET SPACE [mm]	4224	4224	4224
	RAIL SIZE	T127-2/B	T127-2/B	T127-2/B
CWT WITH SAFETY	R1 [kgf]	45	45	45
	R2 [kgf]	22	22	22
	R3 [kgf]	5647	5647	5647
	Vx [kgf]	-	539	1077
	Vy [kgf]	-	269	539
	MAXIMUM BRACKET SPACE [mm]	3321	3321	3321
CWT WITHOUT SAFETY	RAIL SIZE	T127-1/B	T127-1/B	T127-1/B
	R1 [kgf]	45	45	45
	R2 [kgf]	22	22	22
	R3 [kgf]	-	-	-
	Vx [kgf]	-	539	1077
	Vy [kgf]	-	269	539
RISE>220m	MAXIMUM BRACKET SPACE [mm]	4900	4900	4445
	RAIL SIZE	T89/B	T127-1/B	T127-1/B
SEISMIC ZONE	<2	=2	>2	
	R1 [kgf]	248	248	248
	R2 [kgf]	18	18	18
	R3 [kgf]	6124	6124	6124
	Vx [kgf]	-	492	985
	Vy [kgf]	-	246	492
CAR	MAXIMUM BRACKET SPACE [mm]	3269	4300	4300
	RAIL SIZE	T127-2/B	T140-1/B	T140-1/B
CWT WITH SAFETY	R1 [kgf]	45	45	45
	R2 [kgf]	22	22	22
	R3 [kgf]	5647	5647	5647
	Vx [kgf]	-	539	1077
	Vy [kgf]	-	269	539
	MAXIMUM BRACKET SPACE [mm]	4034	4034	4034
CWT WITHOUT SAFETY	RAIL SIZE	T127-2/B	T127-2/B	T127-2/B
	R1 [kgf]	45	45	45
	R2 [kgf]	22	22	22
	R3 [kgf]	-	-	-
	Vx [kgf]	-	539	1077
	Vy [kgf]	-	269	539
RISE>220m	MAXIMUM BRACKET SPACE [mm]	4900	4900	4773
	RAIL SIZE	T127-1/B	T127-2/B	T127-2/B

1. R1 AND R3 ARE SAFETY APPLICATION LOADS. R2 IS LOADING, UNLOADING AND NORMAL RUNNING. Vx AND Vy ARE SEISMIC RAIL FORCES.
2. RAIL AND BUFFER FORCES DO NOT OCCUR SIMULTANEOUSLY.
3. R3 FORCE IS FOR IMPACT LOADING AND INCLUDING WEIGHT OF RAIL STACK.
4. R3 FORCE TO BE TAKEN BY THE PIT FLOOR.
5. Vx AND Vy DO NOT OCCUR SIMULTANEOUSLY.
6. BUILDING RAIL SUPPORTS (NOT BY OTIS) SHALL BE DESIGNED TO SUSTAIN THE HORIZONTAL RAIL FORCES WITH A MAXIMUM DEFLECTION OF 1/8" (3mm).
7. THE MAXIMUM CWT BRACKET SPACING SHOWN (WITHOUT CWT SAFETY ONLY) IS BASED ON USING (2) CWT INTERMEDIATE TIES. WITHOUT TIES, THIS SPACING WILL REDUCE.
8. REACTION FORCE FOR IBC/NBCC REFER TO SYSTEM CALCULATION TOOL AAA29100A\_BC\_SYS.

NOTE:

THIS LAYOUT IS BASED ON MAXIMUM CAB WEIGHT FROM 'AAA29100A\_SEB\_NSAA'. ANY INCREASE IN THE CAB WEIGHT MAY REQUIRE AN INCREASE IN THE HOISTWAY SIZE.

PLEASE CONSULT OTIS ELEVATOR IF THE CAB WEIGHT IS EXCEEDED.

GENERAL NOTES

- a. CUTOUTS TO ACCOMMODATE HALL BUTTONS AND SIGNAL FIXTURES, AND PATCHING AFTER FIXTURES ARE SET.
- b. IF BEAM/TUBE WIDTH IS INCREASED FROM THAT SHOWN ON THE HOISTWAY DRAWING, THE INDIVIDUAL HOISTWAY CLEARANCE WIDTH MUST BE MAINTAINED.
- c. THESE DIMENSIONS ARE FOR REFERENCE ONLY. RAIL LOCATION SHOWN IS BASED ON MAXIMUM WEIGHTS AND LIMITATIONS. RAIL LOCATION MUST BE CALCULATED INDEPENDENTLY FOR EACH CONTRACT, BASED ON SPECIFIC REQUIREMENTS.

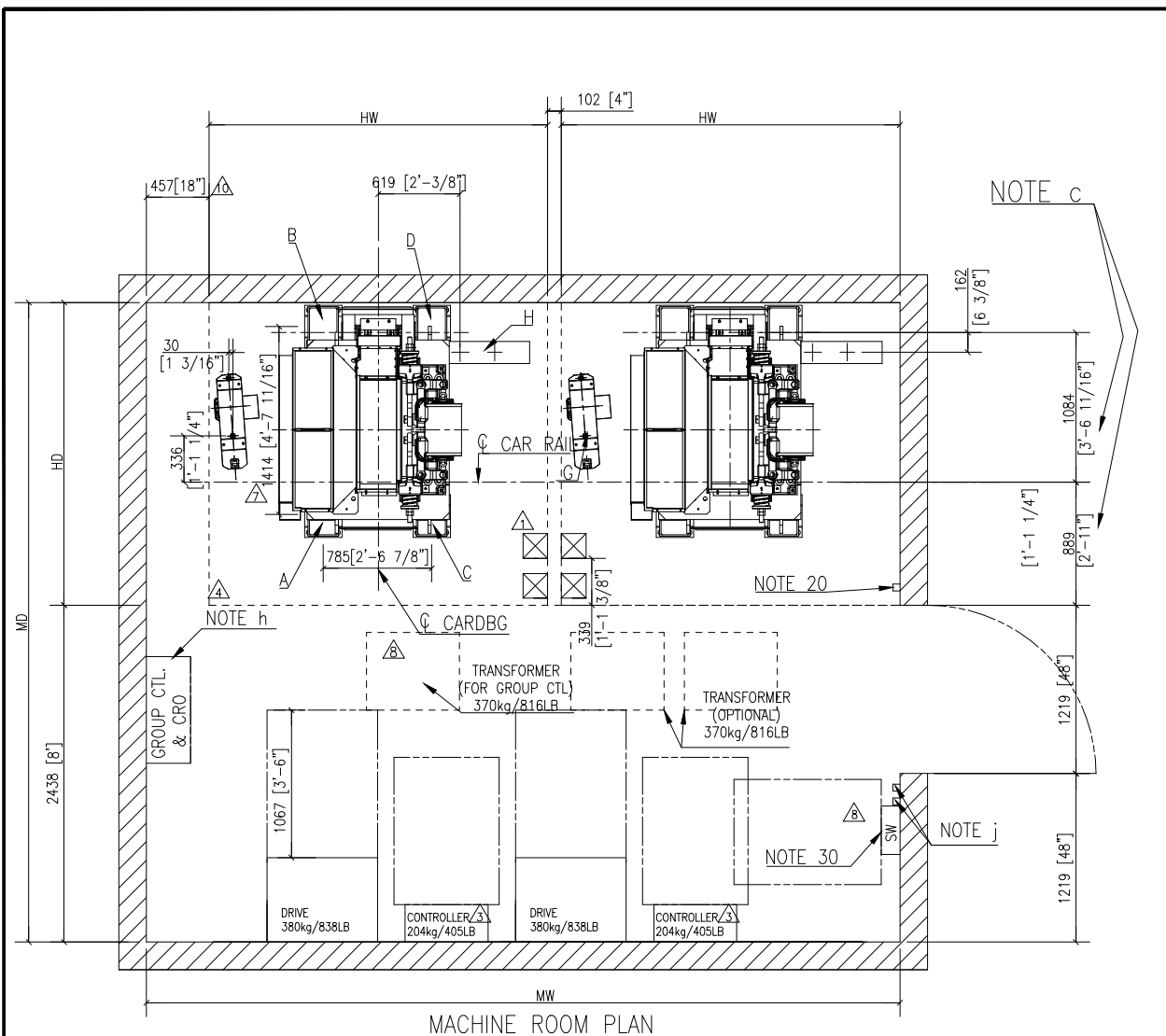
VER.	DATE	REVISIONS	BY
CN512662	2014/06/20	ADD NOTE FOR TC, GPRS, LS	
		NEW HIB LOCATION	
		GOV LOCATION ON L1 FOR WOSAF CASE	
		REMOVED LADDER AND REQUIRED PIT ACCESS DOOR	
CN579185	2014/08/28	NEW ADDED	
CN616999	2015/03/04	UPDATED NOTE OF MAX CAB WEIGHT	
		UPDATED RAIL BRACKET SPACING	
CN878935	2016/06/22	ADD NOTE FOR RAIL FORCE CALCULATION	
CN860094	2016/09/01	LS AND GPRS AT SAME SIDE	



A United Technologies Company

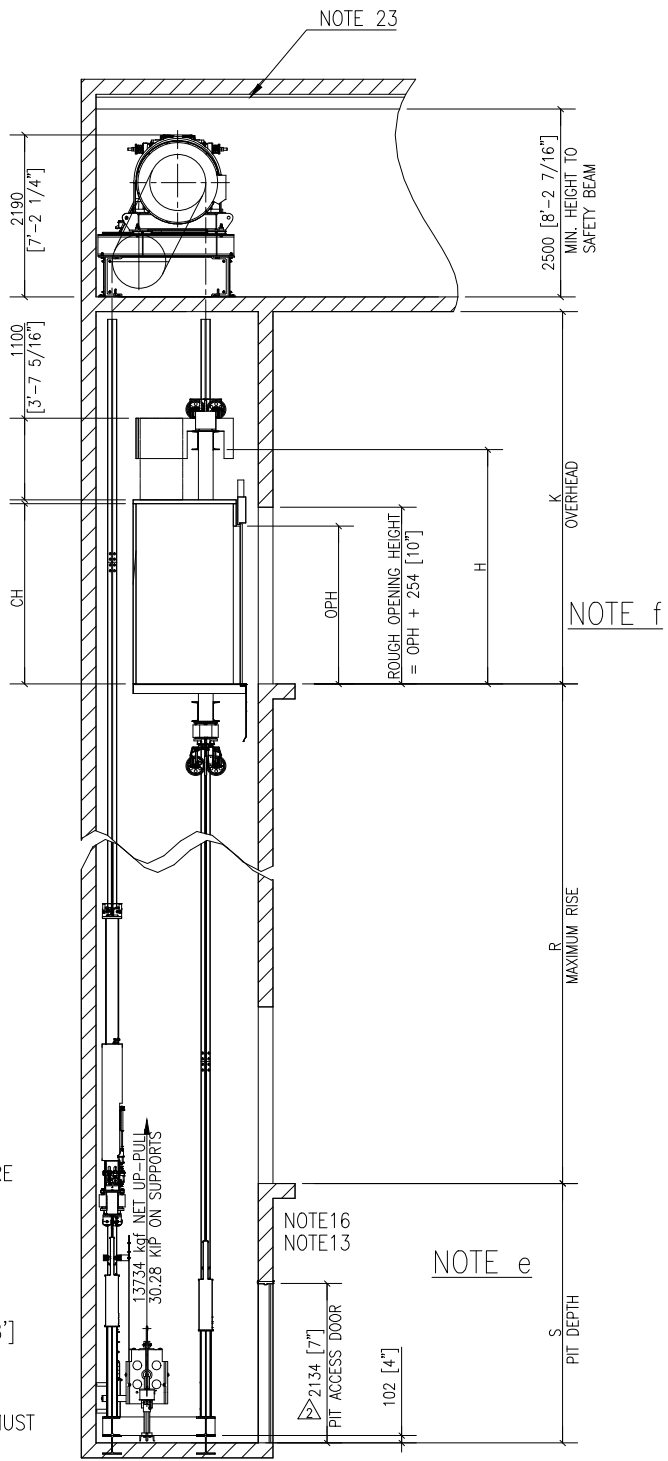
AREA  
TYPE ELEV. PASSENGER ELEVATOR  
TYPE 30T  
MACH. GEARLESS 1:1  
LOAD-SPEED: SEE LOAD SPEED CHART  
OPERATION: E2-FULL SELECTIVE  
CONTROL: V.V.V.F.

SKYRISE		LOAD	SPEED	COMP.
SKYRISE-21120		953kg/2100#	6.0mps/1200FPM	ROPE
SKYRISE-21100			5.0mps/1000FPM	
DWG.NO.		AAA28100HS		
BUILDING		LOCATION		
CONT.WITH		OWNER		
ARCHT.		DATED-PRELIM.		
FINAL		CHKD.BY		
DRAFTER		3 SHEETS		
SHEET 2				



REACTION LOADS				
	DYNAMIC		STATIC	
	KIP	kgf	KIP	kgf
A	15.10	6850	7.55	3425
B	13.81	6262	6.91	3131
C	15.10	6850	7.55	3425
D	13.81	6262	6.91	3131
G	3.72	1685	1.74	843
H	3.72	1685	1.74	843
H LOAD ONLY WHEN CWT SAFETY IS PROVIDED				

MACHINE ROOM PLAN VIEW DIMENSIONS				
	SEISMIC ZONE <2		SEISMIC ZONE >=2	
	CWT W/O SAFETY	CWT W/ SAFETY	CWT W/O SAFETY	CWT W/ SAFETY
MW	5150 [16'-11 1/16"]	5430 [17'-10 1/16"]	5290 [17'-4 9/16"]	5430 [17'-10 1/16"]
MD (A1710/A1709)	4568 [14'-11 13/16"]	4658 [15'-3 3/8"]	4578 [15'-1 1/4"]	4678 [15'-4 3/16"]
MD  (A17A08/A1707)	4644 [15'-2 13/16"]	4734 [15'-6 3/8"]	4654 [15'-3 1/4"]	4754 [15'-7 3/16"]



SPEED	CH	K (A1710)		K (A1709/A17A08/A1707)		R	OPH	H	S
		WOSAF	WSAFE	WOSAF	WSAFE				
5.0 mps 1000 FPM	2438/8'	5980 [19'-7 7/16"]	6390 [20'-11 9/16"]	6680 [21'-11"]	6680 [21'-11"]	300 m [984'-3"]	2134/7'	3138 [10'-4"]	3570 [11'-8 9/16"]
	2743/9'	6280 [20'-7 1/4"]	6390 [20'-11 9/16"]	6980 [22'-10 13/16"]	6980 [22'-10 13/16"]			3443 [11'-4"]	
	3048/10'	6590 [21'-7 7/16"]	6590 [21'-7 7/16"]	7290 [23'-11"]	7290 [23'-11"]		2134/7' 2438/8'	3748 [12'-4"]	
	3658/12'	7200 [23'-7 7/16"]	7200 [23'-7 7/16"]	7900 [25'-11"]	7900 [25'-11"]			4358 [14'-4"]	
6.0 mps 1200 FPM	2438/8'	5980 [19'-7 7/16"]	6390 [20'-11 9/16"]	7480 [24'-6 1/2"]	7480 [24'-6 1/2"]	300 m [984'-3"]	2134/7'	3138 [10'-4"]	3830 [12'-6 13/16"]
	2743/9'	6280 [20'-7 1/4"]	6390 [20'-11 9/16"]	7790 [25'-6 11/16"]	7790 [25'-6 11/16"]			3443 [11'-4"]	
	3048/10'	6590 [21'-7 7/16"]	6590 [21'-7 7/16"]	8090 [26'-6 1/2"]	8090 [26'-6 1/2"]		2134/7' 2438/8'	3748 [12'-4"]	
	3658/12'	7200 [23'-7 7/16"]	7200 [23'-7 7/16"]	8700 [28'-6 1/2"]	8700 [28'-6 1/2"]			4358 [14'-4"]	

- GENERAL NOTES
- d. WHERE THE HOISTWAY DOES NOT EXTEND TO THE LOWEST FLOOR OF THE BUILDING AND THERE IS SPACE BELOW THE COUNTERWEIGHT THAT IS ACCESSIBLE, THE COUNTERWEIGHT SHALL BE PROVIDED WITH A COUNTERWEIGHT SAFETY. PLEASE ADVISE OTIS IF THIS CONDITION APPLIES.
- e. CLEAR OVERHEAD HEIGHT , PIT DEPTHS AND BUFFER IMPACT LOADS ARE BASED ON REDUCED STROKE BUFFERS.
- f. WITHOUT A CWT SAFETY THE OVERHEAD IS ALSO BASED ON A CWT RUNBY OF 200mm [7 7/8"] AND A ROPE STRETCH OF 457mm [1'-6"]. THE INCREASE IN OVERHEAD WHEN USING A CWT SAFETY IS DUE TO THE CWT FRAME HEIGHT.
- g. IF POWER IS LESS THAN 400V AND GREATER THAN 480V THEN THE VOLTAGE TRANSFORMER MUST BE PROVIDED, 170kg [380LB].
- h. WITH ELEVATOR GROUP CONTROLLER THIS CABINET WILL BE PROVIDED.
- j. NON-FUSED DISCONNECT SWITCH WIRED IN SERIES WITH FUSED DISCONNECT SWITCH FOR THIS ELEVATOR (NOT BY OTIS.)
- k. THE MINIMUM FLOOR HEIGHT IS:  
2515 [8'-3"] WITH 2134 [7"] ENTRANCE  
2819 [9'-3"] WITH 2438 [8"] ENTRANCE
- m. FOR CODE YEAR PRIOR TO 2009, INCREASE HD BY 76mm[3"] TO MEET REFUGE SPACE REQUIREMENT.

NOTE d  
SECTIONAL ELEVATION

VER.	DATE	REVISIONS	BY	 A United Technologies Company	
CN512662	3/19/2014	CN441066 FIRST RELEASE			
	2014/06/20	UPDATED CUTOUTS POSITION OF TC AND H.W.		 A United Technologies Company	
		REMOVED LADDER AND ADDED PIT ACCESS DOOR			
		WAS 100 kg  REMOVED MOD BOX		 A United Technologies Company	
CN579895	2014/08/28	UPDATED CODE YEAR  NEW ADDED  WAS 1344			
CN616999	2015/02/11	RELOCATE MACHINE ROOM PARTS FOR WORKING SPACE		 A United Technologies Company	
		UPDATED OVERHEAD			
CN860094	2016/09/01	ADDED 457MM MACHINE ROOM EXTENSION		 A United Technologies Company	
				 A United Technologies Company	

LOAD	SPEED	COMP.
SKYRISE-21120	6.0mps/1200FPM	ROPE
SKYRISE-21100	5.0mps/1000FPM	

AREA	BUILDING
TYPE ELEV. PASSENGER ELEVATOR	LOCATION
TYPE 30T	CONT.WITH
MACH. GEARLESS 1:1	OWNER
LOAD-SPEED: SEE LOAD SPEED CHART	ARCHT.
OPERATION: E2-FULL SELECTIVE	DATED-PRELIM. FINAL
CONTROL: V.V.V.F.	DRAFTER CHKD.BY
	3 SHEETS SHEET 3