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. Failure to provide the items specified in this list will result in additional work performed by Otis Elevator beyond the scope of our contract causing installation delays. A change order will be submitted by Otis for materials and/or labor expended.

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 roll-able access to the elevator hoistway at the ground level, located within 100 feet (30480mm) of the hoistway and is larger than 25 x 20 feet (7620mm x 6096mm) per elevator. 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 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.

3. 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

4. Provide and install a steel, I-beam shaped safety beam with a maximum flange width of 8 11/16" (220mm), from side wall to side wall at the top of the hoistway, capable of withstanding a minimum net live load of 7500 lb (3402 kg) per elevator. Reference Otis Layout for location. A 4" minimum clearance is required from top of beam to top of hoistway.

   If your jobsite voltage = 600VAC three phase or 240VAC single phase, and your controller is to be located in the hoistway entrance, one of the two option below must be done.

   Option 1: An additional steel I-beam needs to be provided and installed. It is to be located per the Otis layout & sized the same as the safety beam for the purpose of mounting the transformer provide by Otis (See overhead requirements).

   Option 2: No second beam needed. Place a transformer in an electrical room. The transformer must be mounted and wired as per the National Electrical Code (ANSI/NFPA 70). See Otis layout and fact sheets for details.

5. Provide a clear plumb hoistway with variations from the size shown on the Otis layout not to exceed -0"/+1" (25mm) 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 comply with the rail reaction forces detailed on the Otis Contract Layout. Provide adequate support for the top rail brackets at locations above the top landing as specified on the Otis Layout. Provide separator beams where required. Unless approved by Otis, 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 the Otis layout. Any rail bracket mounting surfaces that are not in line with the finished hoistway dimension (i.e. the clear hoistway line) may need to be extended to meet the required distance. 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 on car rail side, opposite cwt., (2) vertical tubes spaced at 20.4" (518mm) on center are required for car rail brackets with "A" dimension >= 5.76" (146mm).

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. Finish floor and grout, if required, between entrances and building sill line. For MRL installations, a horizontal support member is to be provided 20" (508mm) above the clear opening at the controller landing to support the entrance and controller components. If any other floor height exceeds 12'-0" (3657mm), a horizontal support member is to be provided 12" (305mm) above the clear opening.

8. Prior to the start of installation, provide a dry, properly framed, enclosed and vented hoistway in accordance with all applicable codes.

9. 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. (90.7kg) 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.

10. Provide a pit floor designed to sustain vertical forces (based on safety impact) on car and counterweight rails and impact loads on car and counterweight buffers as shown on the Otis 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 fire fighters emergency operation (FEO) a sump pump/drain shall be provided that shall have the capacity to remove a minimum of 11.4 m3/h (3,000 gal/h) per elevator (2.2.2.5, ASME A17.1-2007/CSA B44-07). Otis recommends that the owner verify the drain or sump pump system is in compliance with all applicable codes and laws.

11. The front entrance wall at the main landing and top landing, is not to be constructed until after all elevator equipment is installed in the hoistway (the entire front wall - CLEAR HOISTWAY WIDTH - must be open for installation). Remaining front entrance walls are not to be constructed until after door frames and sills are in place.

    The rough openings, per sizes shown on the Otis layout, are required. Prior to the completion and turnover of the elevator(s), all entrance walls must be installed and rough openings filled in complete to maintain fire rated hoistway requirements.

12. Provide and install a fixed vertical iron ladder in each pit as required by governing code and located per Otis layout or as coordinated with Otis personnel. Ladder width and pit wall pocket requirements are shown in the pit plan view on the Otis layout.

13. Install 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.

14. Glass used in hoistway construction must block 98% or more of incident full-spectrum ultraviolet radiation for the full height of the hoistway.

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 A17.1-2007, section 2.3.2.3.

    If an emergency door in a blind hoistway is required, provide an outward swinging single section type door with door closer and a self closing barrier per ASME A17.1-2007, section 2.11.1.2. Contact your local Otis personnel for a detailed drawing (AAA26900D_FMI) showing Otis specific requirements.

MRL Machine Space Prep/Work

16. Maintain the temperature at the top of the hoistway (machine space) between 32º F (0º C) and 104º F (40º C). This space also includes the car controller which is mounted at the top landing. Relative humidity shall not to exceed 95% non-condensing. Provide ventilation to suit Otis heat release amounts as shown in 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 machinery space temperature exceeds this requirement, contact your local Otis sales representative for assistance.

17. Install a permanent light fixture at the top of the hoistway (machine space) of not less than 200-lux (19 fc) as measured at the level of the standing surface on the car when the elevator is at the top landing. Light switch is to be located in the hoistway per the Otis layout.

18. Install a permanent light fixture at the top landing entrance (control space), in the hall, of not less than 200-lux (19 fc) as measured at the floor level. Light switch is to be located close to the elevator entrance.

Control Room/Space and Machine Space Prep/Work

19. Provide a suitable control room/space(s) with access and ventilation in accordance with all applicable codes and regulations. The control room/space(s) shall be maintained at a temperature between 32F (0C) and 104F (40C) 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 control room/space(s) temperatures exceed these requirements, contact your local Otis sales representative for assistance.

20. Provide illumination of control room/space(s) of not less than 200 LUX (19 FC) as measured at floor level. Light switch is to be located within 18" (157 mm) to the lock-jamb side of the access door to the control room/space(s).

21. Provide control room/space(s) with self-closing and self-locking doors with a group 2 locking device. In addition, ensure that all air gaps around the doors are sealed (i.e. threshold, weather stripping, etc.).

22. Maintain the temperature at the top of the hoistway (machine space) between 32º F (0º C) and 104º F (45º C). Relative humidity shall not to exceed 95% non-condensing. Provide ventilation to suit Otis heat release amounts as shown in Otis Confirmation of Power Supply form. If your machinery space temperature exceeds this requirement, contact your local Otis sales representative for assistance.

23. Install a permanent light fixture at the top of the hoistway (machine space) of not less than 200-lux (19 fc) as measured at the level of the standing surface on the car when the elevator is at the top landing. Light switch is to be located in the hoistway per the Otis layout.

Fire Prevention Prep/Work

24. 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).

25. 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 below:

       1) 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.

       2) If the control room/space(s) are 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 landing.

    C. Requirements for intermittently illuminating the fire hat visual signal in the car operating panel, either 1) or 2) must be selected.

       1) For a single unit, or group of elevators having control room/space(s) and one common hoistway, provide one additional normally closed contact representing the control room/space(s) and hoistway smoke detectors.

       2) If the group contains more than one hoistway, and hoistway smoke detectors are installed, provide one normally closed contact for each elevator. The contact is to represent the smoke detectors in the control room/space(s) or hoistway containing that particular elevator.

26. In Canada 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 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 space.

    D. If the 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 landing. For each group of elevators, provide in addition to the above, a normally closed contact representing the sensing devices in the pit or at the top of the hoistway (For the Fire Hat in the Elevator).

27. In the United States, if sprinklers are installed in the hoistway(s), or machine space(s), a means to automatically disconnect the main line power supply of the affected elevator and any other power supply used to move the elevator upon or prior to the application of water is required (unless prohibited by local code). Smoke detectors shall not be used to activate sprinklers in hoistway(s), or machinery spaces or to disconnect the mainline power supply.

    In addition, when the Automatic Recovery Operation (ARO) is specified, the means provided to automatically disconnect power to the elevator shall be equipped with an additional auxiliary contact that is positively opened when power is removed from the elevator system. This automatically controlled mainline disconnect must be provided with all associated wiring and conduit to the controller.

28. Provide an "ABC" fire extinguisher, minimum 10 lbs for machine space, and located convenient to the top landing elevator entrance.

29. Provide control room/space(s) and door to code compliant fire-resistive construction.

Electrical Requirements

30. 3 Phase Power MRL - Provide a permanent three (3) phase electrical-feeder system with a separate equipment-grounding conductor terminating in the elevator controller located at the top landing or transformer located at the top of the hoistway. Permanent three (3) phase electrical-feeder to be terminated at the elevator controller or transformer at the start of installation of the top landing elevator entrance and the timing of connection to Otis controller shall be coordinated with the elevator installer.
    shall be coordinated with the elevator installer. 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. Provide 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 elevator controller [NEC 620-51, 620-61(D), and 620-62] or [CEC Rule 38-013 (2) (a)] located at the point of power distribution in the building. The disconnecting means required by the National Electrical Code or Canadian Electrical Code CEC [Rule 38-051] shall be provided with all associated wiring and conduit to the elevator controller. Size of main contacts to suit elevator power characteristics. Fuses, if provided, are to be current limiting class J or equivalent. Circuit breakers, if provided, are to have current limiting characteristics equivalent to class J fuses. Fuses or circuit breakers are to be time delay to cover the full load up accelerating current. Accelerating current typically is the peak as indicated on the Otis Confirmation of Power Supply Form, and lasts for duration not to exceed 7 seconds. 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. The building power system used to operate the elevator(s) shall be capable of supplying non linear loads and be capable of absorbing the regenerated power listed on the Otis Confirmation of Power Supply form.

    Single Phase Power MRL - Provide a permanent single phase electrical-feeder system with a separate equipment-grounding conductor terminating in the transformer located at the top of the hoistway. Permanent single phase electrical-feeder to be terminated at the transformer at the start of installation of the top landing elevator entrance and the timing of connection to Otis controller shall be coordinated with the elevator installer. 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. Provide 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 elevator controller [NEC building. The disconnecting means required by the National Electrical Code or Canadian Electrical Code CEC [Rule 620-51, 620-61(D), and 620-62] or [CEC Rule 38-013 (2) (a)] located at the point of power distribution in the 38-051] shall be provided with all associated wiring and conduit to the elevator controller. Size of main contacts to suit elevator power characteristics. Fuses, if provided, are to be current limiting class J or equivalent. Circuit breakers, if provided, are to have current limiting characteristics equivalent to class J fuses. Fuses or circuit breakers are to be time delay to cover the full load up accelerating current. Accelerating current typically is the peak as indicated on the Otis Confirmation of Power Supply Form, and lasts for duration not to exceed 7 seconds. 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. The building power system used to operate the elevator(s) shall be capable of supplying non linear loads and be capable of absorbing the regenerated power listed on the Otis Confirmation of Power Supply form.

31. 3 Phase Power Control Room/Space - Provide a permanent three (3) phase electrical-feeder system with a separate equipment-grounding conductor terminating in the control room/space(s), 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)]. The disconnecting means required by the National Electrical Code or Canadian 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. 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. Accelerating current typically is the peak as indicated on the Otis Confirmation of Power Supply Form, and lasts for duration not to exceed 7 seconds. 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. The building power system used to operate the elevator(s) shall be capable of supplying non linear loads and be capable of absorbing the regenerated power listed on the Otis Confirmation of Power Supply form.

    Single Phase Power Control Room/Space - Provide a permanent single phase electrical-feeder system with a separate equipment-grounding conductor terminating in the control room/space(s), 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)]. The disconnecting means required by the National Electrical Code or Canadian 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. 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. Accelerating current typically is the peak as indicated on the Otis Confirmation of Power Supply Form, and lasts for duration not to exceed 7 seconds. 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. The building power system used to operate the elevator(s) shall be capable of supplying non linear loads and be capable of absorbing the regenerated power listed on the Otis Confirmation of Power Supply form.

32. Provide a dedicated 125 volt, 15 ampere single-phase branch circuit with a fused disconnect switch or circuit breaker located at the point of power distribution in the building. The fused disconnect or circuit breaker shall be capable of being locked in the open position. 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 [NEC620-53] or Canadian Electrical Code [CEC Rule 38-053]. Termination of this branch circuit shall be in the elevator controller located at the top landing and shall be connected at the same time as the permanent three (3) phase power referenced in the previous paragraph.

33. All 125 volt, 15 or 20 ampere single-phase receptacles installed in pits, machine spaces, control rooms/space(s) shall be of the ground-fault circuit-interrupter type (GFCI). A dedicated single-phase receptacle supplying a permanently installed pit sump pump shall not require GFCI protection.

34. Provide electric power for lights, tools, welding, hoisting, etc. during installation with sufficient power for starting, testing and adjusting the elevator. Provide a 220 volt, 30 ampere single-phase 4 wire electrical supply for platform operation during construction, available at the start of elevator installation.

35. Provide one (1) dedicated outside telephone line, per elevator, and terminated at the controller designated by the Otis construction superintendent. Reference the A17.1 code and the Otis power of confirmation letter for specific requirements.

36. In areas under the jurisdiction of AMSE A17.1-2004/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 A17.1-2004 CSA B44 or later, section 2.27.1.1.4 for exact requirements.

37. [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.

38. [Optional] For installations having emergency (standby) power, provide the standby power unit and means for starting it. The emergency (standby) power unit shall deliver to the elevator via disconnect switches in the building power distribution location or disconnect switches in the control room/space(s), sufficient power to operate one or more elevators at a time at full rated speed, and rated load.

    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 system provided shall comply with ANSI/NFPA 70 requirements 620.91. The table in section "ELEVATOR REGENERATIVE POWER REQUIREMENTS", on the Otis Confirmation of Power Supply form, contains the elevator system power regenerated under an overhauling load. The information contained in the form is to be used to determine regenerative power absorption capability for the emergency (standby) power distribution system.

    Note: The building Emergency (Standby Power) Generator system used to operate the elevator(s) shall be capable of supplying non-linear loads.

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.

Gen2®

4500# @ 200 F.P.M.
SEISMIC 2

Otis
A United Technologies Company

DWG. NO.: G2S 4500-PWBO

BUILDING Webster University ISB

LOCATION Webster Groves MO

CONT. WITH Paric

OWNER Webster University

ARCHT. Cannon Design

CONTRACT NO. 635607 -- Elevator #2 -- Date: 7.20.16

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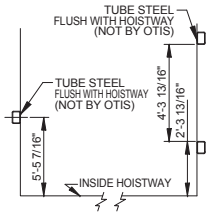
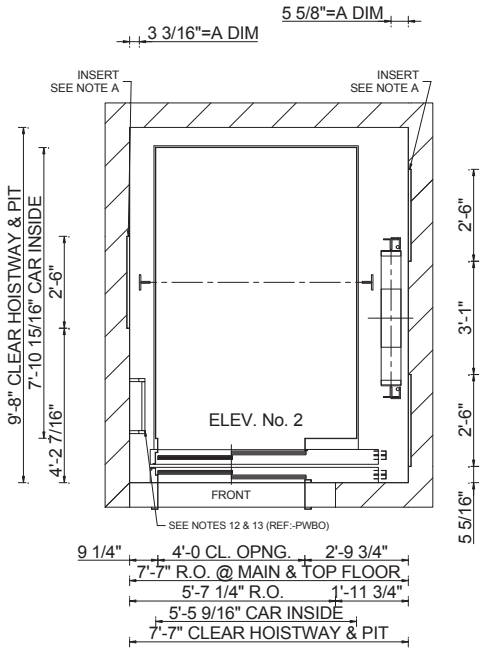
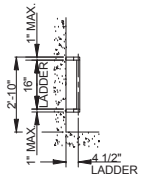


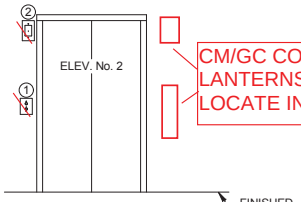
TUBE STEEL RAIL BRACKET SUPPORT
ELEV. No. 2



PLAN VIEW
SEE NOTE 5, PWBO SHEET

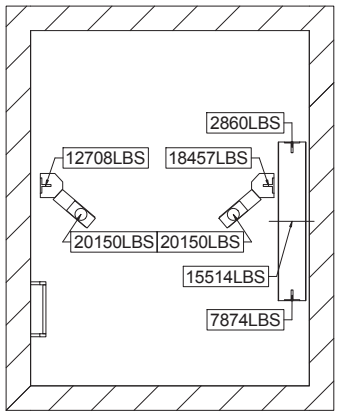


LADDER DETAIL
ELEV. No. 2



CM/GC COORDINATE TO LOCATE BUTTONS AND LANTERNS PER 17/A0551 AND SHEET EG 111. LOCATE IN FURRING PARTITION PER 15/A0551.

HALL FIXTURE DETAIL
① HALL BUTTONS @ ALL FLOORS
② HALL LANTERNS @ FLOOR(S) LL, 1, 2, 3, 4



PIT PLAN VIEW
FORCE SHOWN INCLUDES DOUBLING FOR IMPACT

DIRECTIONAL ARROW INDICATES NORTH

NOTE A
THESE DIMENSIONS ARE BASED ON HOISTWAY SIZES SHOWN & 30" INSERTS. IF EITHER OF THESE VARY, CONSULT THE SALES REPRESENTATIVE.

APPROVAL
THIS ARRANGEMENT AND SUPPLEMENTARY NOTES APPROVED

SIGNED: _____ DATE: _____

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Gen2®
4500# @ 200 F.P.M.
SEISMIC 2

Otis
A United Technologies Company

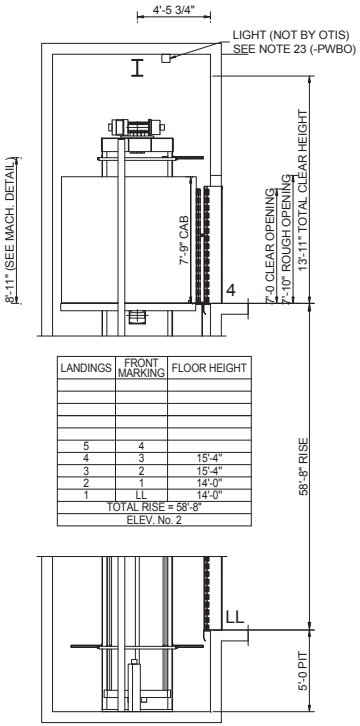
DWG. NO.:	G2S 4500-PN
BUILDING	Webster University ISB
LOCATION	Webster Groves MO
CONT. WITH	Paric
OWNER	Webster University
ARCHT.	Cannon Design
CONTRACT NO.	635607 -- Elevator #2 -- Date: 7.20.16

NOTE - DO NOT SCALE THIS DRAWING

REFER TO DWG'S. NO. G2S 4500-PWBO, G2S 4500-EL, G2S 4500-CR

EXPRESS DRAW: WEB:19

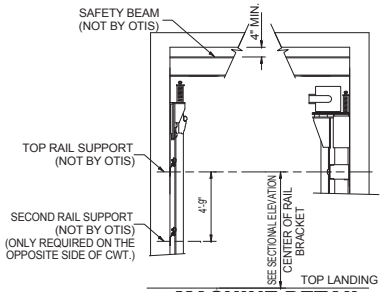
TABLE 1 CAR RAIL BRACKET INSERT TABLE	ELEV. No. 2
4'-9"	11th BRACKET LOC. FROM 10th BRKT.
4'-2"	10th BRACKET LOC. FROM 9th BRKT.
7'-8"	9th BRACKET LOC. FROM 8th BRKT.
7'-8"	8th BRACKET LOC. FROM 7th BRKT.
7'-8"	7th BRACKET LOC. FROM 6th BRKT.
7'-8"	6th BRACKET LOC. FROM 5th BRKT.
7'-0"	5th BRACKET LOC. FROM 4th BRKT.
7'-0"	4th BRACKET LOC. FROM 3rd BRKT.
5'-0"	3rd BRACKET LOC. FROM 2nd BRKT.
10'-0"	2nd BRACKET LOC. FROM 1st BRKT. (REQ'D)
4'-0"	1st BRACKET LOC. FROM PIT FLOOR



LANDINGS	FRONT MARKING	FLOOR HEIGHT
5	4	
4	3	15'-4"
3	2	15'-4"
2	1	14'-0"
1	LL	14'-0"
TOTAL RISE = 58'-8"		
ELEV. No. 2		

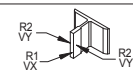
SECTIONAL ELEVATION

FOR MAX. SPACING BETWEEN INSERTS SEE RAIL FORCE DETAIL



MACHINE DETAIL

RAIL FORCE & BRACKET SPACING DETAIL



SEE NOTES 6 & 7

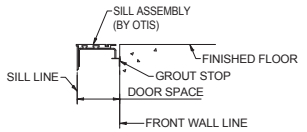
CAR	R1	573 lbs
	R2	274 lbs
	VX	1276 lbs
	VY	638 lbs
	MAXIMUM BRACKET SPACING	11' 0"
	RAIL SIZE	1
CWT	R1	359 lbs
	R2	26 lbs
	VX	1342 lbs
	VY	671 lbs
	MAXIMUM BRACKET SPACING	11' 0"
	RAIL SIZE	1-1/2
DEH (DEAD END HITCH)	R1	870 lbs
	R2	2740 lbs

IN MULTICAR GROUPS THE VALUES ABOVE ARE THE LARGEST VALUES FOR THE ENTIRE GROUP

FIRST INTERMEDIATE RAIL SUPPORT LOCATION TO BE LOCATED 14' 0" FROM PIT FLOOR. ALL OTHER INTERMEDIATE SUPPORTS CANNOT EXCEED THE MAXIMUM BRACKET SPACING IN THE RAIL FORCE & BRACKET SPACING DETAIL

CAR R1 = SAFETY APPLICATION
CWT R1 = LOADING OR RUNNING
R2 = LOADING OR RUNNING

REQUIREMENTS FOR RAIL BRACKET SUPPORT (NOT BY OTIS):
DEFLECTION NOT TO EXCEED 1/8"
BASED ON HORIZONTAL RAIL FORCES.



DETAIL "A" SILL SUPPORT

ADEQUATE SUPPORT AT ALL FASTENING POINTS OF ENTRANCE ASSEMBLY REQUIRED. MUST WITHSTAND A HORIZONTAL PULL-OUT FORCE OF 140 LBS. @ EA. FASTENING POINT (8 @ EA. ENTRANCE) INCLUDING SUPPORT FOR CENTER SILL SUPPORT BRACKET (NOT BY OTIS).

APPROVAL
THIS ARRANGEMENT AND SUPPLEMENTARY NOTES APPROVED

SIGNED: _____ DATE: _____

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Gen2®

4500# @ 200 F.P.M.
SEISMIC 2

Otis
A United Technologies Company

DWG. NO.: G2S 4500-EL
BUILDING Webster University ISB
LOCATION Webster Groves MO
CONT. WITH Paric
OWNER Webster University
ARCHT. Cannon Design
CONTRACT NO. 635607 -- Elevator #2 -- Date: 7.20.16

NOTE - DO NOT SCALE THIS DRAWING

REFER TO DWG'S. NO. G2S 4500-PWBO, G2S 4500-PN, G2S 4500-CR

EXPRESS DRAW: WEB:19

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. Failure to provide the items specified in this list will result in additional work performed by Otis Elevator beyond the scope of our contract causing installation delays. A change order will be submitted by Otis for materials and/or labor expended.

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 roll-able access to the elevator hoistway at the ground level, located within 100 feet (30480mm) of the hoistway and is larger than 25 x 20 feet (7620mm x 6096mm) per elevator. 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 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.

3. 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

4. Provide and install a steel, I-beam shaped safety beam with a maximum flange width of 8 11/16" (220mm), from side wall to side wall at the top of the hoistway, capable of withstanding a minimum net live load of 7500 lb (3402 kg) per elevator. Reference Otis Layout for location. A 4" minimum clearance is required from top of beam to top of hoistway.

   If your jobsite voltage = 600VAC three phase or 240VAC single phase, and your controller is to be located in the hoistway entrance, one of the two option below must be done.

   Option 1: An additional steel I-beam needs to be provided and installed. It is to be located per the Otis layout & sized the same as the safety beam for the purpose of mounting the transformer provide by Otis (See overhead requirements).

   Option 2: No second beam needed. Place a transformer in an electrical room. The transformer must be mounted and wired as per the National Electrical Code (ANSI/NFPA 70). See Otis layout and fact sheets for details.

5. Provide a clear plumb hoistway with variations from the size shown on the Otis layout not to exceed -0"/+1" (25mm) 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 comply with the rail reaction forces detailed on the Otis Contract Layout. Provide adequate support for the top rail brackets at locations above the top landing as specified on the Otis Layout. Provide separator beams where required. Unless approved by Otis, 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 the Otis layout. Any rail bracket mounting surfaces that are not in line with the finished hoistway dimension (i.e. the clear hoistway line) may need to be extended to meet the required distance. 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 on car rail side, opposite cwt., (2) vertical tubes spaced at 20.4" (518mm) on center are required for car rail brackets with "A" dimension >= 5.76" (146mm).

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. Finish floor and grout, if required, between entrances and building sill line. For MRL installations, a horizontal support member is to be provided 20" (508mm) above the clear opening at the controller landing to support the entrance and controller components. If any other floor height exceeds 12'-0" (3657mm), a horizontal support member is to be provided 12" (305mm) above the clear opening.

8. Prior to the start of installation, provide a dry, properly framed, enclosed and vented hoistway in accordance with all applicable codes.

9. 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. (90.7kg) 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.

10. Provide a pit floor designed to sustain vertical forces (based on safety impact) on car and counterweight rails and impact loads on car and counterweight buffers as shown on the Otis 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 fire fighters emergency operation (FEO) a sump pump/drain shall be provided that shall have the capacity to remove a minimum of 11.4 m3/h (3,000 gal/h) per elevator (2.2.2.5, ASME A17.1-2007/CSA B44-07). Otis recommends that the owner verify the drain or sump pump system is in compliance with all applicable codes and laws.

11. The front entrance wall at the main landing and top landing, is not to be constructed until after all elevator equipment is installed in the hoistway (the entire front wall - CLEAR HOISTWAY WIDTH - must be open for installation). Remaining front entrance walls are not to be constructed until after door frames and sills are in place.

    The rough openings, per sizes shown on the Otis layout, are required. Prior to the completion and turnover of the elevator(s), all entrance walls must be installed and rough openings filled in complete to maintain fire rated hoistway requirements.

12. Provide and install a fixed vertical iron ladder in each pit as required by governing code and located per Otis layout or as coordinated with Otis personnel. Ladder width and pit wall pocket requirements are shown in the pit plan view on the Otis layout.

13. Install 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.

14. Glass used in hoistway construction must block 98% or more of incident full-spectrum ultraviolet radiation for the full height of the hoistway.

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 A17.1-2007, section 2.3.2.3.

    If an emergency door in a blind hoistway is required, provide an outward swinging single section type door with door closer and a self closing barrier per ASME A17.1-2007, section 2.11.1.2. Contact your local Otis personnel for a detailed drawing (AAA26900D_FMI) showing Otis specific requirements.

MRL Machine Space Prep/Work

16. Maintain the temperature at the top of the hoistway (machine space) between 32º F (0º C) and 104º F (40º C). This space also includes the car controller which is mounted at the top landing. Relative humidity shall not to exceed 95% non-condensing. Provide ventilation to suit Otis heat release amounts as shown in 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 machinery space temperature exceeds this requirement, contact your local Otis sales representative for assistance.

17. Install a permanent light fixture at the top of the hoistway (machine space) of not less than 200-lux (19 fc) as measured at the level of the standing surface on the car when the elevator is at the top landing. Light switch is to be located in the hoistway per the Otis layout.

18. Install a permanent light fixture at the top landing entrance (control space), in the hall, of not less than 200-lux (19 fc) as measured at the floor level. Light switch is to be located close to the elevator entrance.

Control Room/Space and Machine Space Prep/Work

19. Provide a suitable control room/space(s) with access and ventilation in accordance with all applicable codes and regulations. The control room/space(s) shall be maintained at a temperature between 32F (0C) and 104F (40C) 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 control room/space(s) temperatures exceed these requirements, contact your local Otis sales representative for assistance.

20. Provide illumination of control room/space(s) of not less than 200 LUX (19 FC) as measured at floor level. Light switch is to be located within 18" (157 mm) to the lock-jamb side of the access door to the control room/space(s).

21. Provide control room/space(s) with self-closing and self-locking doors with a group 2 locking device. In addition, ensure that all air gaps around the doors are sealed (i.e. threshold, weather stripping, etc.).

22. Maintain the temperature at the top of the hoistway (machine space) between 32º F (0º C) and 104º F (45º C). Relative humidity shall not to exceed 95% non-condensing. Provide ventilation to suit Otis heat release amounts as shown in Otis Confirmation of Power Supply form. If your machinery space temperature exceeds this requirement, contact your local Otis sales representative for assistance.

23. Install a permanent light fixture at the top of the hoistway (machine space) of not less than 200-lux (19 fc) as measured at the level of the standing surface on the car when the elevator is at the top landing. Light switch is to be located in the hoistway per the Otis layout.

Fire Prevention Prep/Work

24. 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).

25. 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 below:

       1) 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.

       2) If the control room/space(s) are 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 landing.

    C. Requirements for intermittently illuminating the fire hat visual signal in the car operating panel, either 1) or 2) must be selected.

       1) For a single unit, or group of elevators having control room/space(s) and one common hoistway, provide one additional normally closed contact representing the control room/space(s) and hoistway smoke detectors.

       2) If the group contains more than one hoistway, and hoistway smoke detectors are installed, provide one normally closed contact for each elevator. The contact is to represent the smoke detectors in the control room/space(s) or hoistway containing that particular elevator.

26. In Canada 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 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 space.

    D. If the 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 landing. For each group of elevators, provide in addition to the above, a normally closed contact representing the sensing devices in the pit or at the top of the hoistway (For the Fire Hat in the Elevator).

27. In the United States, if sprinklers are installed in the hoistway(s), or machine space(s), a means to automatically disconnect the main line power supply of the affected elevator and any other power supply used to move the elevator upon or prior to the application of water is required (unless prohibited by local code). Smoke detectors shall not be used to activate sprinklers in hoistway(s), or machinery spaces or to disconnect the mainline power supply.

    In addition, when the Automatic Recovery Operation (ARO) is specified, the means provided to automatically disconnect power to the elevator shall be equipped with an additional auxiliary contact that is positively opened when power is removed from the elevator system. This automatically controlled mainline disconnect must be provided with all associated wiring and conduit to the controller.

28. Provide an "ABC" fire extinguisher, minimum 10 lbs for machine space, and located convenient to the top landing elevator entrance.

29. Provide control room/space(s) and door to code compliant fire-resistive construction.

Electrical Requirements

30. 3 Phase Power MRL - Provide a permanent three (3) phase electrical-feeder system with a separate equipment-grounding conductor terminating in the elevator controller located at the top landing or transformer located at the top of the hoistway. Permanent three (3) phase electrical-feeder to be terminated at the elevator controller or transformer at the start of installation of the top landing elevator entrance and the timing of connection to Otis controller shall be coordinated with the elevator installer.
    shall be coordinated with the elevator installer. 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. Provide 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 elevator controller [NEC 620-51, 620-61(D), and 620-62] or [CEC Rule 38-013 (2) (a)] located at the point of power distribution in the building. The disconnecting means required by the National Electrical Code or Canadian Electrical Code CEC [Rule 38-051] shall be provided with all associated wiring and conduit to the elevator controller. Size of main contacts to suit elevator power characteristics. Fuses, if provided, are to be current limiting class J or equivalent. Circuit breakers, if provided, are to have current limiting characteristics equivalent to class J fuses. Fuses or circuit breakers are to be time delay to cover the full load up accelerating current. Accelerating current typically is the peak as indicated on the Otis Confirmation of Power Supply Form, and lasts for duration not to exceed 7 seconds. 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. The building power system used to operate the elevator(s) shall be capable of supplying non linear loads and be capable of absorbing the regenerated power listed on the Otis Confirmation of Power Supply form.

    Single Phase Power MRL - Provide a permanent single phase electrical-feeder system with a separate equipment-grounding conductor terminating in the transformer located at the top of the hoistway. Permanent single phase electrical-feeder to be terminated at the transformer at the start of installation of the top landing elevator entrance and the timing of connection to Otis controller shall be coordinated with the elevator installer. Feeder conductors and grounding conductor sized according to elevator current characteristics shown on the Otis Confirmation of Power Supply form. Feeder conductors and grounding conductor must be copper. Provide 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 elevator controller [NEC building. The disconnecting means required by the National Electrical Code or Canadian Electrical Code CEC [Rule 620-51, 620-61(D), and 620-62] or [CEC Rule 38-013 (2) (a)] located at the point of power distribution in the 38-051] shall be provided with all associated wiring and conduit to the elevator controller. Size of main contacts to suit elevator power characteristics. Fuses, if provided, are to be current limiting class J or equivalent. Circuit breakers, if provided, are to have current limiting characteristics equivalent to class J fuses. Fuses or circuit breakers are to be time delay to cover the full load up accelerating current. Accelerating current typically is the peak as indicated on the Otis Confirmation of Power Supply Form, and lasts for duration not to exceed 7 seconds. 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. The building power system used to operate the elevator(s) shall be capable of supplying non linear loads and be capable of absorbing the regenerated power listed on the Otis Confirmation of Power Supply form.

31. 3 Phase Power Control Room/Space - Provide a permanent three (3) phase electrical-feeder system with a separate equipment-grounding conductor terminating in the control room/space(s), 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)]. The disconnecting means required by the National Electrical Code or Canadian 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. 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. Accelerating current typically is the peak as indicated on the Otis Confirmation of Power Supply Form, and lasts for duration not to exceed 7 seconds. 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. The building power system used to operate the elevator(s) shall be capable of supplying non linear loads and be capable of absorbing the regenerated power listed on the Otis Confirmation of Power Supply form.

    Single Phase Power Control Room/Space - Provide a permanent single phase electrical-feeder system with a separate equipment-grounding conductor terminating in the control room/space(s), 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)]. The disconnecting means required by the National Electrical Code or Canadian 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. 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. Accelerating current typically is the peak as indicated on the Otis Confirmation of Power Supply Form, and lasts for duration not to exceed 7 seconds. 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. The building power system used to operate the elevator(s) shall be capable of supplying non linear loads and be capable of absorbing the regenerated power listed on the Otis Confirmation of Power Supply form.

32. Provide a dedicated 125 volt, 15 ampere single-phase branch circuit with a fused disconnect switch or circuit breaker located at the point of power distribution in the building. The fused disconnect or circuit breaker shall be capable of being locked in the open position. 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 [NEC620-53] or Canadian Electrical Code [CEC Rule 38-053]. Termination of this branch circuit shall be in the elevator controller located at the top landing and shall be connected at the same time as the permanent three (3) phase power referenced in the previous paragraph.

33. All 125 volt, 15 or 20 ampere single-phase receptacles installed in pits, machine spaces, control rooms/space(s) shall be of the ground-fault circuit-interrupter type (GFCI). A dedicated single-phase receptacle supplying a permanently installed pit sump pump shall not require GFCI protection.

34. Provide electric power for lights, tools, welding, hoisting, etc. during installation with sufficient power for starting, testing and adjusting the elevator. Provide a 220 volt, 30 ampere single-phase 4 wire electrical supply for platform operation during construction, available at the start of elevator installation.

35. Provide one (1) dedicated outside telephone line, per elevator, and terminated at the controller designated by the Otis construction superintendent. Reference the A17.1 code and the Otis power of confirmation letter for specific requirements.

36. In areas under the jurisdiction of AMSE A17.1-2004/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 A17.1-2004 CSA B44 or later, section 2.27.1.1.4 for exact requirements.

37. [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.

38. [Optional] For installations having emergency (standby) power, provide the standby power unit and means for starting it. The emergency (standby) power unit shall deliver to the elevator via disconnect switches in the building power distribution location or disconnect switches in the control room/space(s), sufficient power to operate one or more elevators at a time at full rated speed, and rated load.

    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 system provided shall comply with ANSI/NFPA 70 requirements 620.91. The table in section "ELEVATOR REGENERATIVE POWER REQUIREMENTS", on the Otis Confirmation of Power Supply form, contains the elevator system power regenerated under an overhauling load. The information contained in the form is to be used to determine regenerative power absorption capability for the emergency (standby) power distribution system.

    Note: The building Emergency (Standby Power) Generator system used to operate the elevator(s) shall be capable of supplying non-linear loads.

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.

Gen2®

3500# @ 200 F.P.M.
SEISMIC 2

Otis
A United Technologies Company

DWG. NO.: G2S 3500-PWBO

BUILDING Webster University ISB

LOCATION Webster Groves MO

CONT. WITH Paric

OWNER Webster University

ARCHT. Cannon Design

CONTRACT NO. 635608 -- Elevator #1 -- Date: 7.20.16

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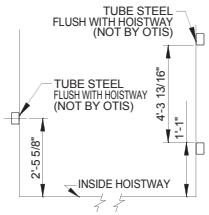
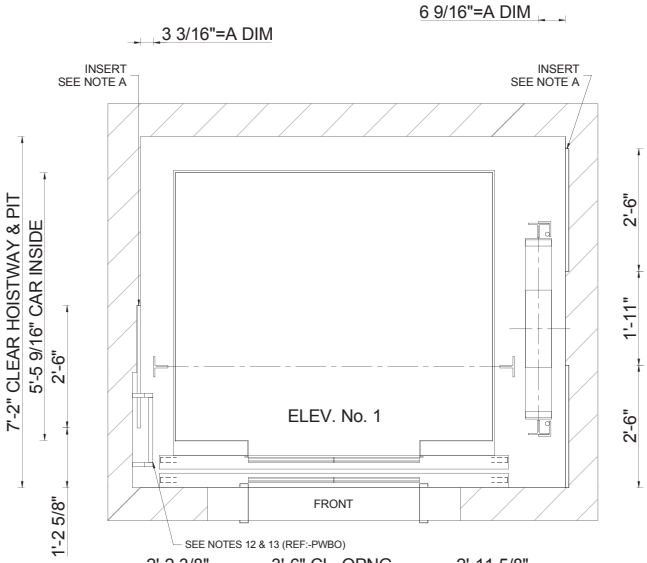
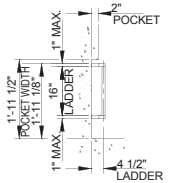


TUBE STEEL RAIL BRACKET SUPPORT
ELEV. No. 1

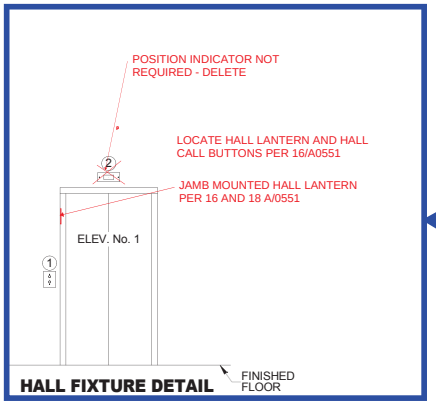


PLAN VIEW
SEE NOTE 5, PWBO SHEET



LADDER AND POCKET DETAIL
ELEV. No. 1
RECESS NOT NEEDED FOR LADDER

SUMP PITS TO BE INSTALLED PER 1/2 - A0551

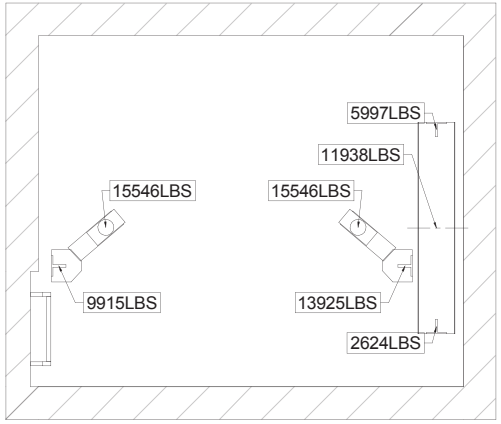


HALL FIXTURE DETAIL

PREVIOUS MARKUP FOR REFERENCE

HALL FIXTURE DETAIL

① HALL BUTTONS @ ALL FLOORS
② HALL LANTERNS @ FLOOR(S) 1, 2, 3, 4, 4



PIT PLAN VIEW
FORCE SHOWN INCLUDES DOUBLING FOR IMPACT

DIRECTIONAL ARROW INDICATES NORTH

NOTE A
THESE DIMENSIONS ARE BASED ON HOISTWAY SIZES SHOWN & 30" INSERTS. IF EITHER OF THESE VARY, CONSULT THE SALES REPRESENTATIVE.

APPROVAL
THIS ARRANGEMENT AND SUPPLEMENTARY NOTES APPROVED

SIGNED: _____ DATE: _____

THIS WORK AND THE INFORMATION IT CONTAINS ARE THE PROPERTY OF OTIS ELEVATOR COMPANY ("OTIS"). IT IS DELIVERED TO OTHERS ON THE EXPRESS CONDITION THAT IT WILL BE USED ONLY FOR OR ON BEHALF OF OTIS; THAT NEITHER IT NOR THE INFORMATION IT CONTAINS WILL BE REPRODUCED OR DISCLOSED. IN WHOLE OR IN PART, WITHOUT THE WRITTEN CONSENT OF OTIS; AND THAT ON DEMAND IT AND ANY COPIES WILL BE PROMPTLY RETURNED TO OTIS.

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Gen2®
3500# @ 200 F.P.M.
SEISMIC 2

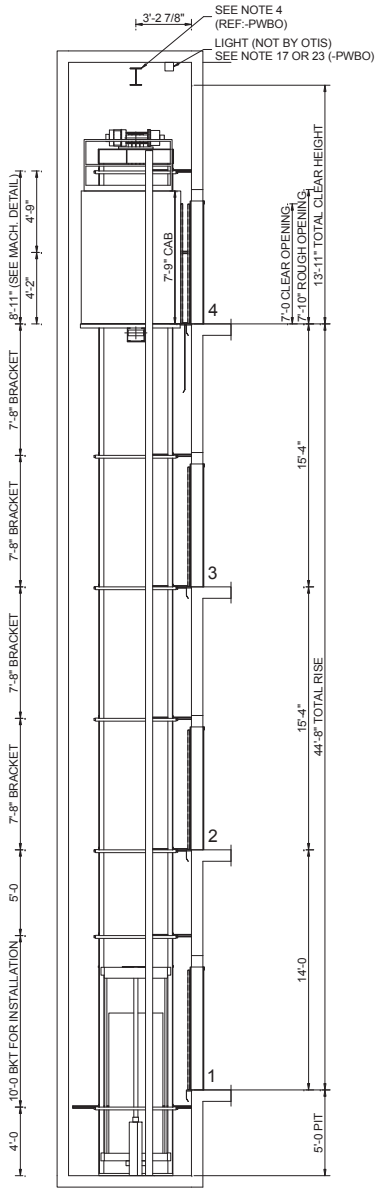
Otis
A United Technologies Company

DWG. NO.:	G2S 3500-PN
BUILDING	Webster University ISB
LOCATION	Webster Groves MO
CONT. WITH	Paric
OWNER	Webster University
ARCHT.	Cannon Design
CONTRACT NO.	635608 -- Elevator #1 -- Date: 7.20.16

NOTE - DO NOT SCALE THIS DRAWING

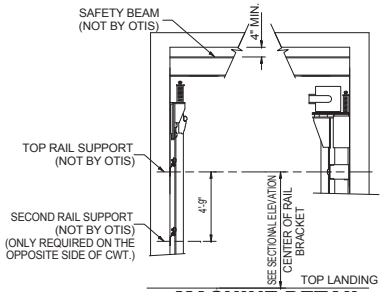
REFER TO DWG'S. NO. G2S 3500-PWBO, G2S 3500-EL, G2S 3500-CR

EXPRESS DRAW: WEB:19



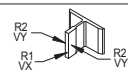
SECTIONAL ELEVATION

FOR MAX. SPACING BETWEEN INSERTS SEE RAIL FORCE DETAIL



MACHINE DETAIL

RAIL FORCE & BRACKET SPACING DETAIL



SEE NOTES 6 & 7

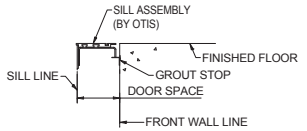
CAR	R1	519 lbs
	R2	90 lbs
	VX	1018 lbs
	VY	509 lbs
	MAXIMUM BRACKET SPACING	12' 0"
	RAIL SIZE	1-1/2
CWT	R1	266 lbs
	R2	19 lbs
	VX	1071 lbs
	VY	535 lbs
	MAXIMUM BRACKET SPACING	12' 0"
	RAIL SIZE	1-1/2
DEH (DEAD END HITCH)	R1	660 lbs
	R2	1590 lbs

IN MULTICAR GROUPS THE VALUES ABOVE ARE THE LARGEST VALUES FOR THE ENTIRE GROUP

FIRST INTERMEDIATE RAIL SUPPORT LOCATION TO BE LOCATED 14' 0" FROM PIT FLOOR. ALL OTHER INTERMEDIATE SUPPORTS CANNOT EXCEED THE MAXIMUM BRACKET SPACING IN THE RAIL FORCE & BRACKET SPACING DETAIL

CAR R1 = SAFETY APPLICATION
CWT R1 = LOADING OR RUNNING
R2 = LOADING OR RUNNING

REQUIREMENTS FOR RAIL BRACKET SUPPORT (NOT BY OTIS):
DEFLECTION NOT TO EXCEED 1/8"
BASED ON HORIZONTAL RAIL FORCES.



DETAIL "A" SILL SUPPORT

ADEQUATE SUPPORT AT ALL FASTENING POINTS OF ENTRANCE ASSEMBLY REQUIRED. MUST WITHSTAND A HORIZONTAL PULL-OUT FORCE OF 140 LBS. @ EA. FASTENING POINT (8 @ EA. ENTRANCE) INCLUDING SUPPORT FOR CENTER SILL SUPPORT BRACKET (NOT BY OTIS).

APPROVAL
THIS ARRANGEMENT AND SUPPLEMENTARY NOTES APPROVED

SIGNED: _____ DATE: _____

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Gen2®

3500# @ 200 F.P.M.
SEISMIC 2

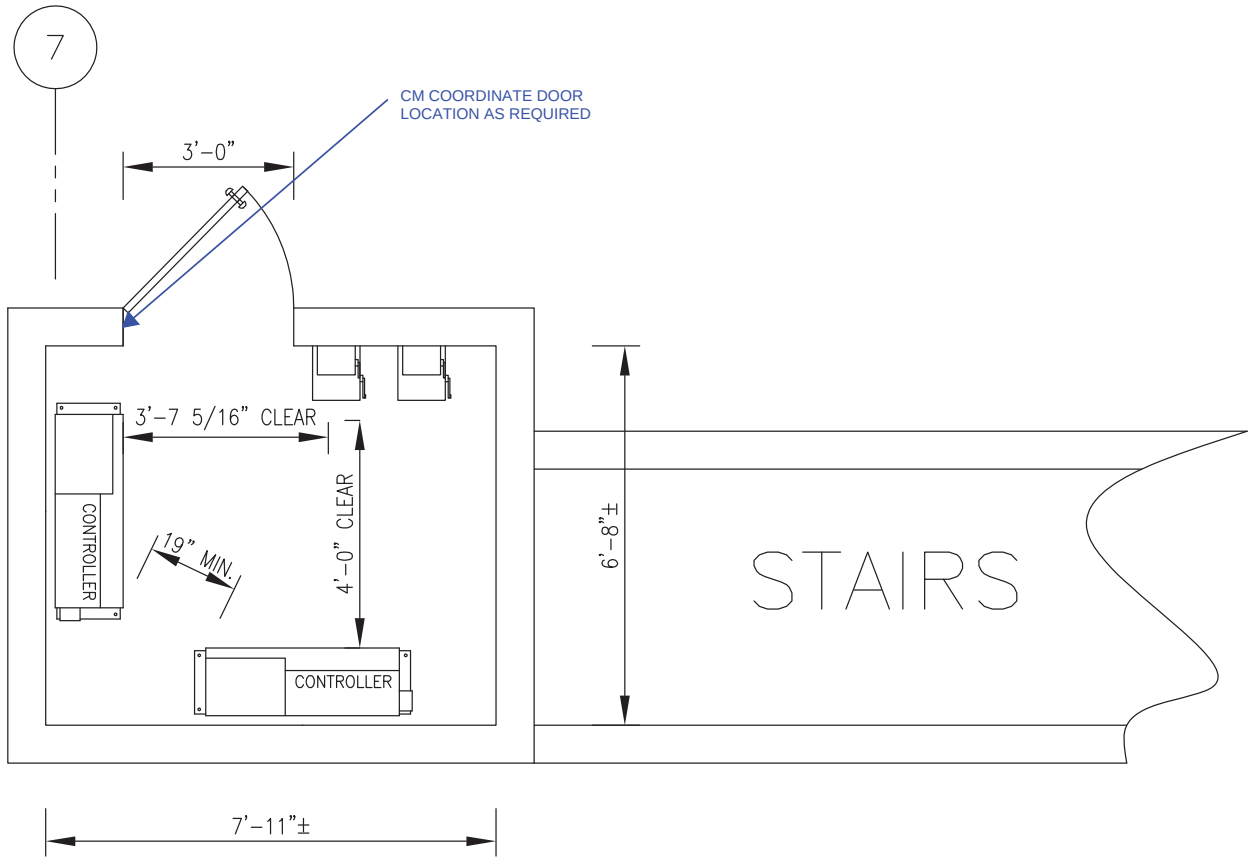
Otis
A United Technologies Company

DWG. NO.: G2S 3500-EL
BUILDING Webster University ISB
LOCATION Webster Groves MO
CONT. WITH Paric
OWNER Webster University
ARCHT. Cannon Design
CONTRACT NO. 635608 -- Elevator #1 -- Date: 7.20.16

NOTE - DO NOT SCALE THIS DRAWING

REFER TO DWG'S. NO. G2S 3500-PWBO, G2S 3500-PN, G2S 3500-CR

EXPRESS DRAW: WEB:19



ATTN: Mike Mosella
PROJECT NAME: Webster University
DRAFTER: Kimberly W. Cudd
DATE: 7/19/2016

WM TAO & ASSOCIATES
CONSULTING ENGINEERS

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: August 2, 2016

Attention: stl-cac@cannondesign.com

Contact Person / WTA Field Inspector: Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Bill Shaw
Tom Becker (FG)

Project No. WT 14127.01
FG 235-001

☐ UPS ☐ Courier ☒ **Email**

Copies	No.	Description
1 PDF	142100E01A	Submittal No.'s:
		(Cannon #14 2100-006) - (Paric #15051-0154) – (FG #None)
		• Elevator Shop Drawings REV 1 - **Resubmittal**
		Confirmation of Power for Elevator Systems - Resubmittal

Submittal Review Comments

Reviewed only for comments made in original submittal 142100 E01 (14 2100-006).

Elevator controls shall be programmed to allow only one elevator (#2) to operate when emergency generator is supplying power.

c: **Kelvin Patel**
Kpatel@cannondesign.com

☒ ***Reviewed** ☐ Furnish as Noted

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.

WTASHOP - RE: WT 14127.01 - Webster ISB - 14 2100-006 REV002

From: Tom Becker <tomb@faithgroupllc.com>
To: WTASHOP <wtashop@wmtao.com>
Date: 8/1/2016 9:24 AM
Subject: RE: WT 14127.01 - Webster ISB - 14 2100-006 REV002
Cc: "Bill Shaw (bshaw@wmtao.com)" <bshaw@wmtao.com>, Patrick Garner <pgarner...

Sara,
We reviewed the elevator submittal and have no comments.
Thanks
Tom

From: WTASHOP [wtashop@wmtao.com]
Sent: Tuesday, July 26, 2016 12:20 PM
To: Tom Becker <tomb@faithgroupllc.com>; Bill Shaw <bshaw@wmtao.com>; Patrick Garner <pgarner@wmtao.com>
Subject: Fwd: WT 14127.01 - Webster ISB - 14 2100-006 REV002

Tom & Bill, for your review.

Thanks.

ENSURE YOUR SUBMITTALS ARE BEING PROCESSED!!! **Please include wtashop@wmtao.com, *Sara Trout*, in all of your shop drawing correspondence in order to expedite & track. *Thank you.***

Sara Trout
Shop Drawing Coordinator

WM TAO & ASSOCIATES CONSULTING ENGINEERS

7955 Manchester Road, Suite 125
St. Louis, MO 63143-2711
Direct: 314-884-7645
Office: 314-884-7600
wtashop@wmtao.com

WTASHOP - Webster ISB - 14 2100-006 REV002

From: STL-CAC <STL-CAC@CANNONDESIGN.COM>
To: 'Patrick Garner' <pgarner@wmtao.com>, WTASHOP <wtashop@wmtao.com>
Date: 7/25/2016 11:07 AM
Subject: Webster ISB - 14 2100-006 ~~REV002~~ **REV001**
Cc: "Patel, Kelvin" <kpatel@CANNONDESIGN.COM>, "Grossman, Lynn" <lgrossman@C...
Attachments: 142100-006 Elevator shop drawings and product data REV 1.pdf

Attached for review.

Melissa Pirtle
Construction Admin
CANNONDESIGN
1100 Clark Ave
St. Louis, Missouri 63102
T 314.425.8797 • M
cannondesign.com

CANNONDESIGN

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

WEBSTER UNIVERSITY ISB
PROJECT NAME

8274 BIG BEND BLVD
ADDRESS

NUMBER

WEBSTER UNIVERSITY
OWNER

CANNON DESIGN
ARCHITECT / ENGINEER

DEVIN D GATES
SUBMITTED BY

142100-006
CONTRACTOR / CM SUBMITTAL NO.

CANNON DESIGN SUBMITTAL NO.

DRAWING / DETAIL REFERENCE

142100
SPECIFICATION SECTION / PARAGRAPH

Otis
MANUFACTURER / SUPPLIER

ITEM / PRODUCT ID

REQUIRED DATE

PRIORITY

○ CRITICAL

ITEM BEING SUBMITTED (check only one)

- ◉ Shop Drawings
- ○ Samples (_____ copies)
- ○ LEED Submittal
- ○ Certification / Qualifications
- ○ Record Documents
- ○ Product Data
- ○ Coordination Drawing
- ○ Calculations
- ○ Schedules
- ○ O&M Manuals
- ○ Other _____

ITEM BEING SUBMITTED FOR (check only one)

◉ Action ○ Information Only ○ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)

PARIC

PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By:
Devin D. Gates

DEVIN D GATES — 071816
REVIEWED BY — DATE

To be completed by Reviewer

14 2100-006 ~~REV002~~ **REV001**
CANNON DESIGN SUBMITTAL NUMBER

7/25/16
RECEIVED DATE

- ○ A. No Exceptions Taken
  No further review of submittal is required.
- ◉ B. Make Corrections Noted
  Incorporate corrections in work; resubmission is not required.
- ○ C. Revise and Resubmit
  Revise as noted, and resubmit for review.
- ○ D. Rejected
  Submittal is not in compliance with Contract Documents; provide new submittal.
- ○ E. For Record / Information Only
  Submittal was reviewed for Record / Information purposes only.
- ○ F. Not Required for Review
  Submittal is not required by Contract Documents and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

A/E COMMENTS ○ See attached sheet(s) for additional comments

NOTE: NOT ALL COMMENTS WERE PICKED UP FROM PREVIOUS REVIEW NEW COMMENTS ARE IN BLUE.

Lynn Grossman — Digitally signed by Lynn Grossman DN: C=US, E=lgrossman@cannondesign.com, O=CannonDesign, CN=Lynn Grossman Date: 2016.08.03 12:07:01-05'00' — 08.03.2016
REVIEWED BY — DATE

PARIC
EXPERIENCE. EXCELLENCE.
77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0154

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 07/22/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

RE: Elevator shop drawings REV 1

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☑ Approval	☑ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	**SENT VIA:**	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☐ Other:	☐ Separate Cover Via:	☐ Due Date:

Item	*Package*	*Code*	*Rev.*	*Copies*	*Date*	*Description*	*Status*
Submittal		142100-006	1		07/22/2016	Elevator shop drawings REV 1	Approved as Noted

NOTES:

CC:

Signed: _____
Devin Gates