

# ATTACHMENT A-3

11/24/2014

**Schindler Elevator Corporation**

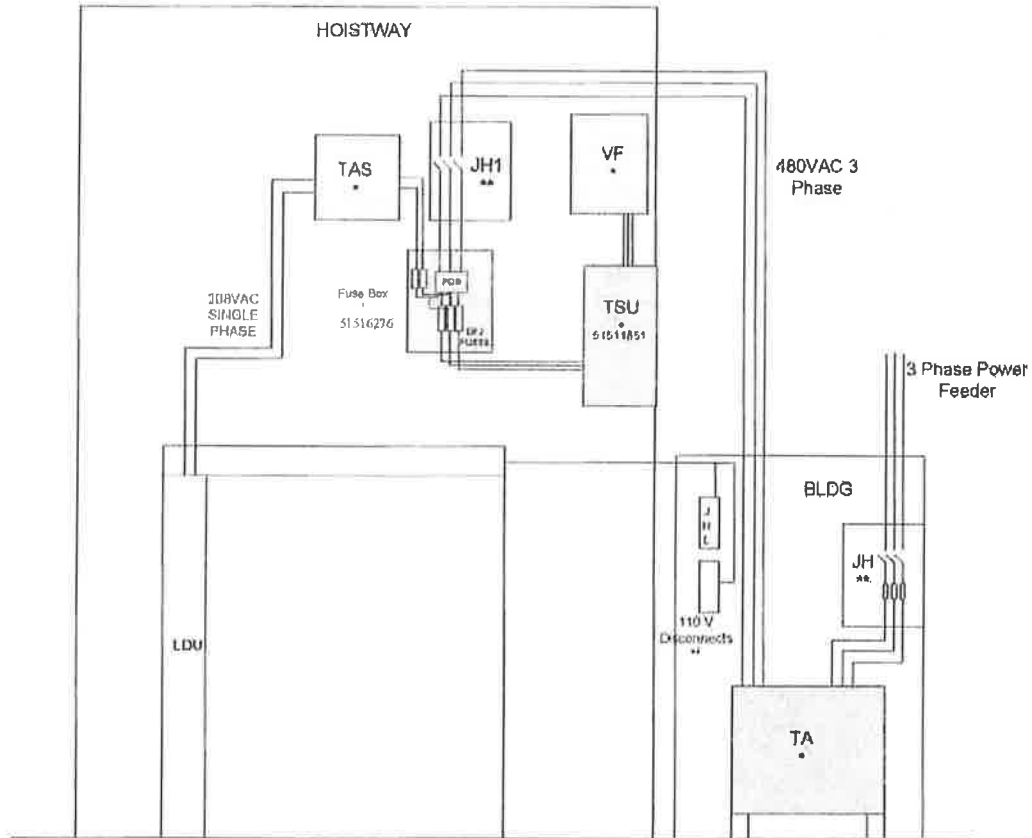
3300 Elevator Power Data

Mission Building  
810 5th St Nw  
Washington, DC 20001

Opp ID: 0200191119-A-A-01  
Neg#: 704285  
Unit(s): 01  
Product Code: 451  
Sales Office: 3210  
Installing Office: 3210

GO#: J2128  
Capacity: 3500 lbs  
Speed: 150 fpm  
Travel: 55 ft. 9 in.

3300 ELECTRICAL SYSTEM LAYOUT  
BLDG VOLTAGE = 208, 230, 240VAC 3 Phase  
Car Capacity = 1500 kg @ 0.75 m/s  
Drive = FCL 4-1-19



**Abbreviations used:**

JH – Mainline Disconnect  
JH1 – Hoistway Auxiliary Disconnect  
JHS – Inspection and Text Panel Switch  
KVA – Kilo Volt Amperes  
LDU – Inspection and Test Panel  
NA – Not Applicable  
OCPD – Over Current Protection Device  
TA – 3 Phase Auto Transformer

SCCR – Short Circuit Current Rating  
TSU – Motor Control  
TAS – Test & Inspection Panel Autotransformer  
VFD – Variable Frequency Drive  
XFMR – Transformer  
PDB – Power Distribution Block  
M – Motor  
(JH, JH1 and 110V disconnects by GC)

\* Components provided by Schindler

\*\* Components to be provided by contractor

Table for Electrical Contractor – Elevator Power System Parameters

<b>SECTION 1: BUILDING POWER SUPPLY</b>		
Parameter	Value	Notes
Utility Building Supply (VAC/phase/Freq)	208 Volts 3 Phase 60 Hz	3 Phase, balanced line to line, 3 wire, no neutral, and Ground to be provided. Voltage fluctuation of building service provided by local utility to be within +/- 10% of the specified voltage. 3% maximum phase to phase fluctuation.
Permissible Voltage Drop (%) from building to TSU	3%	Not to exceed 3% under any condition in the feeders within the building from the building service provided by the local utility to the motor control (TSU).
<b>SECTION 2: MOTOR CONTROL XFMR</b>		
Motor Control Transformer ident number	51516319	If required (See Sec. 2 of contractor sheet for details)
Motor Control XFMR power rating (KVA)	20	
Primary Voltage (Input)	208 VAC	Should be same as building supply voltage
TA XFMR Secondary Voltage (Output)	480 VAC	Should be same as Motor Control Input Voltage
Motor Control XFMR Rated Input Current (Amps)	56 Amps	Maximum capability
Motor Control Transformer Inrush Current (Amps)	560 Amps	Motor Control Transformer In-rush (for 0.1 second)
Motor Control Transformer Output Current (Amps)	24 Amps	Maximum capability
<b>SECTION 3: DISCONNECTS AND PROTECTION DEVICES</b>		
Current consumption by Drive (Amps)	29.00 Amps	Drive – Accelerating (non-continuous) <3.5 Secs
	22.00 Amps	Drive – Running (non-continuous) < 60 Secs
Rated Motor HP	10.5	Rated Motor HP
Current consumption by LDU	1.6 Amps	Control (continuous component of total current)
	3.4 Amps	Control (maximum non-continuous current)
SCCR rating of system	5000 Amps	Maximum RMS Symmetrical Let-Thru current of fuses at mains disconnect cannot exceed this value.
JH Disconnect Switch (Amps)	Sized by GC	To be determined by GC/EC based on input current to downstream device and rules in NEC/CEC or local code.
JH Disconnect Switch Location		See section 2 of contractor sheet for details
Recommended Overcurrent protection (located within mainline disconnect JH) current rating max: (Amps)	70 Amps	Maximum fuse value at mains disconnect (JH). The following must be considered by contractor in selecting fuse type: - Motor Control Transformer Inrush current - I2t curve must not allow fuse to open with current loads identified above. - prospective Short Circuit Fault current at mains disconnect - SCCR of elevator equipment. - Current-limiting fuses are recommended. - Contractor should size wires from xfmr secondary (when applicable), to TSU such that the derated ampacity of the wires exceeds the current output of the xfmr 24. All wiring to be carried out per relevant rules in NEC/CEC or local code.
JH1 Disconnect Switch (Amps)	Sized by GC	See section 2 of contractor sheet for details. Must be unfused. Must be provided with auxiliary contact per schematics.
Hoistway Disconnect switch (JH1) Location	In Hoistway	See section 2 of contractor sheet for details. Must be provided with auxiliary contact per schematics.
Motor Control Input Voltage	480 VAC	Input Voltage to Motor Drive
Required Motor Control protection fuses (in fuse box)	35 Amps	Type – BUSSMANN DFJ, Qty - 3
Required LDU feeder protection fuses in fuse box)	5 Amps	Type – Class CC, Qty – 2, Location – In fuse box.
Recommended LDU Transformer	51516255	See Section 3 of contractor sheet for details
LDU transformer (TAS) Primary Voltage	480 VAC Single Phase	See Section 3 of contractor sheet for details
LDU transformer (TAS) Secondary Voltage	208 VAC	See section 3 of contractor sheet for details
Recommended LDU transformer (TAS) Sec Fuses	8 Amps	Location – In TAS (LDU Xfmr), in hoistway, Qty 2
<b>SECTION 4: HEAT EMISSIONS</b>		
Motor Control transformer heat emissions(Btu/Hr)	2048 BTU/hr	Typically not in hoistway
Hoistway Heat Emissions (Btu/Hr)	4620 BTU/hr	Includes LDU, TSU, VFD, Machine and TAS. Does not include the MOTOR CONTROL XFMR

**Table for Electrical Contractor - Physical Wiring & Conduit Limitations**

Parameter Description	Motor Control (TSU)	Inspection & Test Panel (LDU)	unit
	value	value	
JH Aux1,2 wire size	-----	18	AWG
Terminal Temperature Rating	60	60	Deg C
Power Input Min AWG *	20	14	AWG
Power Input Max AWG *	4	4	AWG
Equip Ground Conductor Min AWG *	14	26	AWG
Equip Ground Conductor Max AWG *	4	12	AWG
Minimum Input Power Conduit KO trade size	1.00	0.5	inches

- Physical size only. No consideration made for electrical requirements.

**Notes:**

- a. To minimize harmonic distortion interference with other equipment, dedicated transformers and feeders shall be provided for elevator use only.
- b. Electrical contractor to supply feeders and ground of copper conductors, and circuit protective devices from the building service to our Motor Control (TSU) and Test and Inspection panel (LDU) in compliance with local code requirements. All three legs of the 3-phase feeder must be hot with respect to ground. Center-tap grounded leg configuration (a.k.a. wild leg) is not supported.
- c. The permissible voltage drop for elevator feeders shall not exceed 3% from the service within the building delivered to our motor controller supply terminals. Feeders are to be sized by the electrical contractor to ensure this requirement.
- d. Schindler does not size feeder wires. All calculations for feeder sizes and insulation type are to be performed by electrical contractor.
- e. Fusebox, Motor control transformer and test and Inspection panel transformer when required will be supplied by Schindler. All Wiring up to LDU and TSU to be provided by GC.
- f. The continuous load due to the Control is taken from two phases of the input and will result in an unbalanced load on the line.
- g. Contractor should size wires from XFMR to secondary (when applicable) to the TSU such that the derated ampacity of the wires can withstand the current output of the XFMR 24. All wiring to be carried out per relevant rules in NEC/CEC or local code.
- h. The JH and JH1 disconnects each require one auxiliary contact per car to prevent unintended initiation of the automatic evacuation feature. This auxiliary contact in each disconnect a) must open when the disconnect is in the "OFF" state and b) must be wired by the Electrical Contractor in series with each other, and c) must terminate in the Inspection & Test Panel (LDU). Auxiliary contact within JH & JH1 are to be rated for the following: 24Volts DC, 2000 milliamperes (Max), 135 milliamperes (Min) non-inductive

11/24/2014

Schindler Elevator Corporation 3300 Elevator Power Data

Mission Building  
810 5th St Nw  
Washington, DC 20001

**Neg#:** 704285  
**Unit(s):** 01  
**Product Code:** 451  
**Sales Office:** 3210  
**Installing Office:** 3210

**GO#:** J2128  
**Capacity:** 3500 lbs  
**Speed:** 150 fpm  
**Travel:** 55 ft. 9 in.

Detailed Sheet for Electrical Contractor

<b>REQUIREMENT</b>	<b>CONTRACTOR- SPECIFICATIONS, RECOMMENDATIONS AND DATA.</b> Refer to the layout drawings for placement and maximum size of electrical boxes.
<b>ABBREVIATIONS/ACRONYMS</b>	<p>Please read the following acronyms. These acronyms will be used in this document for simplicity. Refer back to this list if necessary to understand what any acronym used in this document means.</p> <p>BTU – British Thermal Units  CEC – Canadian Electric Code (Check to see equiv)  JH – Mainline Disconnect  JH1 – Hoistway Auxiliary Disconnect  JHS – Inspection and Test Panel Switch  KVA – Kilo Volt Amperes  LDU – Inspection and Test Panel  NEC – National Electric Code (NFPA 70)  NA – Not Applicable  OCPD – Over Current Protection Device (ie. Fuse)  SCCR – Short Circuit Current Rating  TA – 3 Phase Autotransformer  TSU – Motor Control  TAS – Test and Inspection panel Autotransformer  VAC – Volts AC  VFD – Variable Frequency Drive  XFMR – Transformer</p>
<b>1. POWER DISTRIBUTION REQUIREMENTS OVERVIEW</b>	<p>Elevator system consists of two loads that require appropriately sized equipment and feeders:</p> <ol style="list-style-type: none"> <li>1. Motor Control (TSU) located at the top of the Hoistway</li> <li>2. Inspection &amp; Test Panel (LDU) located within the door jamb at floor 7.</li> </ol> <p>Building shall supply and install the following equipment (and wiring/conduit) per requirements identified elsewhere within this document:</p> <p>In Machinery Space outside Hoistway:</p> <ol style="list-style-type: none"> <li>1. Fusible main line disconnect (JH) with auxiliary contact &amp; shunt trip, for elevator system</li> <li>2. Overcurrent protective devices within Motor Control Autotransformer when applicable</li> <li>3. Disconnecting means (JHL) for auxiliary power and car lighting</li> <li>4. Overcurrent protective devices within main line disconnect (JH).</li> <li>5. Ground Fault Protection, as required per NEC 620-61</li> <li>6. Disconnecting means for top of hoistway machinery space</li> <li>7. Disconnecting means for hoistway pit lighting</li> </ol> <p>In Machinery space at top of hoistway</p> <ol style="list-style-type: none"> <li>8. Non-fusible disconnect (JH1) with auxiliary contact, for motor control</li> </ol>

	<p>Schindler will supply and building shall install the following equipment (and wiring/conduit) per requirements identified elsewhere within this document:</p> <p>In Machinery space outside hoistway: 9. Motor Control Autotransformer as required</p> <p>In Machinery Space at top of hoistway: 10. Inspection and Test Panel Autotransformer (TAS) as required 11. Fuse box and Overcurrent protective devices within Fuse Box</p>
<b>AVAILABLE MAINLINE VOLTAGE</b>	<b>Per site survey, the available mainline voltage is 208 VAC, 3-Phase, 60Hz.</b>

<b>2. MAIN POWER SOURCE FOR MOTOR CONTROL</b>	<p>480 Volts, 3 Phase, 60 Hertz. 22.00 Amperes RMS;</p> <p>Due to nature of operation, input current to motor control shall be considered to be non-continuous unless prohibited by local codes.</p>
<b>SUPPLY CHARACTERISTICS</b>	<p>3 Phase , balanced line to line, 3 wire, no neutral, and ground wire to be provided. Voltage fluctuation of building service provided by local utility to be within +/- 10% of the specified voltage. 3% maximum phase to phase fluctuation. One supply feeder per motor control.</p>
<b>MOTOR CONTROL AUTO-TRANSFORMER (WHEN APPLICABLE)</b>	<p>If the required motor control supply voltage is not available from the building, an autotransformer with a secondary output voltage &amp; output current capability meeting the requirements below shall be provided. This section to be skipped if MOTOR CONTROL xfmr is not required for the installation.</p> <ul style="list-style-type: none"> <li>• Motor Control Transformer ident number 51516319</li> <li>• Motor Control XFMR power rating (KVA) 20</li> <li>• Primary voltage 208 VAC 3-Phase</li> <li>• Secondary Phases: 3</li> <li>• Output Neutral: none</li> <li>• Motor Control Transformer Secondary voltage 480 VAC</li> <li>• Maximum Input Current Capability : 56 Amperes RMS</li> <li>• Maximum Input Surge Current: 560 Amperes RMS</li> <li>• Maximum output current capability: 24 Amperes RMS</li> <li>• Maximum duty cycle: 50 %</li> <li>• Maximum starts per hour: 180</li> <li>• Frequency: 60Hz</li> <li>• Heat emission for the Motor control autotransformer: 2048 BTU/Hour</li> </ul> <p>• Primary fusing: as required per applicable code; protected by fuses located in JH. Recommended maximum overcurrent protection (within JH) current rating max: 70 Amps (based on xfmr nameplate). Schindler does not size the main OCPD or the disconnects and this is to be carried out by the electrical contractor. Schindler recommends the use of fuses for overcurrent protection.</p> <ul style="list-style-type: none"> <li>• Secondary fusing: If and as required by design and applicable code.</li> </ul> <p>If the motor control autotransformer is required:</p>

	<ol style="list-style-type: none"> <li>1. Its primary shall be connected to the JH disconnect output</li> <li>2. Its secondary shall be connected to JH1 disconnect input.</li> </ol>
<b>VOLTAGE TOLERANCE</b>	<ol style="list-style-type: none"> <li>1. Voltage fluctuation of the building service provided by the local utility shall be within <math>\pm 10\%</math> of the specified Motor Control supply voltage.</li> <li>2. Maximum phase-to-phase voltage imbalance shall be <math>\pm 3\%</math>.</li> </ol>
<b>PERMISSIBLE VOLTAGE DROP</b>	Not to exceed 3% under any condition in the feeders within the building from the building service provided by the local utility to the motor control (TSU). Feeders are to be sized by electrical contractor to ensure this requirement.
<b>MOTOR CONTROL PARAMETERS</b>	<p>Motor Control Input Current:</p> <ol style="list-style-type: none"> <li>1. At constant speed: 22.00 Amperes RMS</li> <li>2. While accelerating: 29.00 Amperes RMS for maximum duration of 3.5 sec.</li> <li>3. Maximum run time (Constant speed): 40 seconds</li> <li>4. Input Voltage: 480 VAC</li> <li>5. Required Motor Control protection fuses (within fuse box)</li> </ol> <p>If the required motor control supply voltage is not available from the building, an autotransformer with a secondary output voltage &amp; output current capability meeting the requirements below shall be provided.</p>
<b>MOTOR CONTROL POWER FEEDERS</b>	<p>Building shall supply and install properly sized feeders, ground, and conduit, from:</p> <ol style="list-style-type: none"> <li>1. the building mains service to the elevator main disconnect (JH)</li> <li>2a. the elevator main disconnect (JH) to the MOTOR CONTROL XFMR (if installed)</li> </ol> <p style="text-align: center;">-or-</p> <ol style="list-style-type: none"> <li>2b. elevator main disconnect (JH) to the Hoistway Auxiliary disconnect (JH1)</li> </ol> <p>If MOTOR CONTROL XFMR is not installed</p> <ol style="list-style-type: none"> <li>6. JH1 disconnect to the fuse box.</li> <li>7. fuse box to the motor control (TSU). The TSU unit is wired to the VFD (Drive)</li> </ol> <p>TSU requirements are as follows:</p> <ol style="list-style-type: none"> <li>1. The TSU terminal temperature rating is 60 deg C.</li> <li>2. All TSU wiring terminals are rated for use with copper only.</li> <li>3. The minimum power input wire at the TSU is 20 AWG.</li> <li>4. The maximum power input wire at the TSU is 4 AWG.</li> <li>5. The minimum equipment grounding conductor at the TSU is 14 AWG.</li> <li>6. The maximum equipment grounding conductor at the TSU is 4 AWG.</li> <li>7. The conduit knockout trade size at the TSU is 1.00 inches.</li> </ol> <p>Please note: Schindler does not size feeder wires. All calculations for feeder sizes and insulation type are to be performed by electrical contractor.</p> <p>Contractor should size wires from xfmr secondary (when applicable) to the TSU such that the derated ampacity of the wires can withstand the current output of the xfmr 24. All wiring to be carried out per relevant rules in NEC/CEC or local code.</p>
<b>MAIN AND MOTOR CONTROL: DISCONNECTING MEANS &amp; OVERCURRENT PROTECTION</b>	<ol style="list-style-type: none"> <li>1. The main elevator system disconnect (JH) shall be a lockable fusible three-pole device and shall be located outside the hoistway, in a common location with the (JHL) disconnecting means for auxiliary power and lighting. (see "AUXILIARY POWER SOURCE FOR CAR LIGHTS &amp; FAN" for JHL requirements; also see job layout drawings).</li> </ol> <p>The JH and JHL disconnects shall be located in a key lockable electrical enclosure or electric utility closet, reserved exclusively for the elevator equipment, preferably at</p>

the landing floor 7 per NEC 620-51 or per local requirements.

For optimal space usage, disconnects from elevators in the same group/bank may be grouped together in a single enclosure/utility closet

2. An additional three-pole non-fused disconnect (JH1) shall be located within the hoistway, within sight of the motor control (TSU/VFD). See job layout drawings for additional details.
3. A fuse box shall be located within the hoistway, within sight of the motor control (TSU) and Drive (VFD). See job layout drawings for additional details.

This fuse box shall contain the following

- A. 3 Pole class J fuse block and required DFJ fuses 35 for drive protection
- B. 2 Pole class CC fuse block and required class CC fuses 5A, to protect wiring to test and inspection panel (LDU) or test and inspection panel autotransformer (TAS).

NOTE: The 3 drive protection fuses in the fuse box are intended to protect the drive against damage in the event of a drive component failure. They are not intended to function as overcurrent protective fuses for the system wiring.

JH and JH1 disconnects each require provisions to be locked out and tagged out by a qualified elevator service technician, in order to perform maintenance and or repair. (Provisions for locking or adding a lock to the disconnecting means shall be installed and remain in place with or without the lock installed.) . The Electrical contractor should supply a lockable disconnect per NEC 620-51(a), (b), and NEC 620-62, with appropriate signage per NEC 620-51(c), (d), and NEC 620-52(a), (b), and (c).

The JH and JH1 disconnects each require one auxiliary contact per car to prevent unintended initiation of the automatic evacuation feature. This auxiliary contact in each disconnect a) must open when the disconnect is in the "OFF" state and b) must be wired by the Electrical Contractor in series with each other, and c) must terminate in the Inspection & Test Panel (LDU).

Auxiliary contact within JH & JH1 are to be rated for the following:  
24 Volts DC  
2000 milliamperes (Max)  
135 milliamperes (Min)

Auxiliary contact wiring terminals shall be suitable for use with 18 AWG copper conductors.

Each JH and JH1 disconnect must be clearly marked with the designation of the elevator for which it serves.

Recommended Overcurrent protection (within JH) current rating max: 70 Amps (based on xfmr nameplate). This is the recommended overcurrent protection device (OCPD) size. Schindler does not size the main OCPD or disconnects and this is to be carried out by the electrical contractor. Schindler recommends the use of fuses for overcurrent protection.

Required Drive Protection (within fuse box): In addition to the OCPD required within JH, additional drive / semiconductor fuses are required to protect the motor control. These three Class-J fuses are to be located within the fuse box . The required DFJ Class J fuses that meet the SCCR and let-through requirements of the TSU, as well as the fuse box for the system, are as follows:



	<p style="text-align: center;">Required Fuse: Bussmann DFJ 35 ampere, Qty 3</p> <p>Additional requirements for JH and JH1 disconnects (common unless otherwise specified):</p> <ol style="list-style-type: none"> <li>1. SCCR rating of the motor control (TSU) is 5000 Amps</li> <li>2. If a sprinkler system is installed in the hoistway or on the 7th floor: The building shall provide shunt trip activation of the main elevator disconnect (JH) triggered by contacts of the building heat detectors which provides independent disconnection of electrical power to both machine/motor control and Inspection &amp; Test Panel prior to sprinkler activation as required per ASME A17.1 2.8.2.3 and/or local jurisdictions. This function is not part of the elevator control or any other equipment provided by Schindler Elevator Corp.</li> <li>3. JH and JH1 disconnect shall be NEMA 1 rated or greater.</li> </ol> <hr/> <p>In addition to the JH and JH1 disconnects, a fuse box shall be provided by SEC (Schindler) and be wired by the building.</p> <p>The short circuit current rating (SCCR) of the LDU and TSU that is supplied by the disconnects and the fuse box is 5000 Amperes</p> <ol style="list-style-type: none"> <li>4. Fuse Box shall be Nema 1 Rated and CSA or UL certified/listed</li> <li>5. Electrical contractor to supply motor-feeder/motor-branch short circuit protection as required per NEC 620-61 (c) and (d)</li> </ol>
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<p><b>3. POWER SOURCE FOR INSPECTION AND TEST PANEL (LDU)</b></p>	<p>208V, 1 phase, 60 Hz., <math>\pm 10\%</math>  1.6 Amps continuous + 1.8 Amps Non-continuous.</p>
<p><b>INSPECTION &amp; TEST PANEL AUTOTRANSFORMER ( as required)</b></p>	<p>For installations where 208VAC is unavailable, an autotransformer with a dedicated secondary for the Inspection &amp; Test Panel (LDU) per the following specifications shall be supplied and installed by the building:</p> <ul style="list-style-type: none"> <li>• Power Rating : 1KVA or larger</li> <li>• Primary voltage: 480 VAC Single Phase</li> <li>• Secondary Phases: Single (line-line)</li> <li>• Output Neutral: none</li> <li>• Secondary voltage : 208 VAC</li> <li>• Secondary output current, continuous portion: 1.6 Amperes RMS</li> <li>• Secondary output current, non-continuous portion: 1.8 Amperes RMS</li> <li>• Frequency 60Hz</li> <li>• Primary fusing: as required per applicable code. Recommended fuse 5 amps per table 3 (In Fuse Box).</li> <li>• Secondary tap fusing: as required per applicable code and per design. Recommended fuse 8 amps per table 3.</li> </ul> <p>If the Inspection &amp; Test Panel (LDU) autotransformer (TAS) is required:</p> <ol style="list-style-type: none"> <li>1. Its primary shall be connected to the output of the two pole fuse block in the fuse box and shall be protected with two class CC current limiting fuses whose max rating shall not be greater than 5 AMPS</li> </ol>

	<p>2. It was determined that the secondary shall be protected with two class CC current limiting fuses whose rating shall not be greater than 8 AMPS and shall be connected to the JHS circuit breaker input in the LDU. The fuses to protect the secondary will reside in a class CC fuse block in the autotransformer casing which will be provided as part of the autotransformer assembly if supplied by Schindler.</p>
SUPPLY CHARACTERISTICS	208VAC line to line. One supply per Inspection & Test Panel (LDU).
VOLTAGE TOLERANCE	<p>1. Voltage fluctuation provided to the Inspection &amp; Test Panel (LDU) shall be within <math>\pm 10\%</math> of the specified Inspection &amp; Test Panel (LDU) supply voltage.</p> <p>2. Maximum phase-to-phase voltage imbalance shall be <math>\pm 3\%</math>.</p>
INSPECTION & TEST PANEL FEEDERS	<p>Building shall supply and install properly sized feeders, ground, and conduit, from:</p> <ol style="list-style-type: none"> <li>1. The building mains service to the elevator main disconnect (JH)</li> <li>2. The elevator main disconnect (JH) to the hoistway motor control disconnect (JH1) and then from the JH1 disconnect to the fuse box .</li> <li>3a. Fuse box to the Inspection &amp; Test Panel autotransformer primary (if required and installed), and from the Inspection &amp; Test Panel autotransformer secondary to the Inspection &amp; Test Panel breaker (JHS) in the LDU</li> <li style="text-align: center;">-or-</li> <li>3b. Fuse box to the Inspection &amp; Test Panel breaker (JHS) in the LDU if autotransformer is not required/installed.</li> </ol> <p>The LDU wiring requirements are as follows:</p> <ol style="list-style-type: none"> <li>1. The LDU terminal temperature rating is 60 deg C.</li> <li>2. All LDU wiring terminals are rated for use with copper only.</li> <li>3. The minimum power input wire at the LDU is 14 AWG.</li> <li>4. The maximum power input wire at the LDU is 4 AWG.</li> <li>5. The minimum equipment grounding conductor at the LDU is 26 AWG.</li> <li>6. The maximum equipment grounding conductor at the LDU is 12 AWG.</li> <li>7. The conduit knockout trade size at the LDU is 0.5 inches.</li> </ol> <p>Please note: Schindler does not size feeder wires. All calculations for feeder sizes and insulation type are to be performed by the electrical contractor.</p>

4. AUXILIARY POWER SOURCE FOR CAR LIGHTS & FAN (CAR LIGHTING)	<p>120 Volts, 1 Phase, 60 Hertz, 15 Amps. One Supply per Car Controller for Car Lights, Fan and Receptacle per NEC 620-22.</p> <p>A lockable disconnect (JHL) is required per NEC 620-53. A <u>single</u> pole Circuit Breaker or fused disconnect is required (per car).</p> <p>The JHL disconnect shall be located outside the hoistway, in a common location with the (JH) Main elevator System disconnect. (see "MAIN AND MOTOR CONTROL: DISCONNECTING MEANS" for JH requirements; also see job layout drawings).</p>
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	<p>The JHL and JH disconnects shall be located in a key-lockable electrical enclosure or electric utility closet, reserved exclusively for the elevator equipment, preferably at the landing floor 7 per NEC 620-51 or per local requirements.</p> <p>For optimal space usage, disconnects from elevators in the same group / bank may be grouped together in a single enclosure or utility closet.</p> <p>Each JHL disconnect must be NEMA1-rated.</p> <p>The Electrical Contractor shall supply the feeder and ground wire in a conduit from the JHL disconnect to the Inspection &amp; Test Panel (LDU).</p> <p>The following are the requirements of the feeder and conduit: Maximum Feeder Gauge Size: 14AWG</p> <p>Conduit Size:                3/4"</p> <p>Provisions must be made for automatically providing power to this circuit from the building auxiliary (emergency) power generator.</p>
<p>5. CONVENIENCE FEATURES</p>	<p>Lighting, light switch and duplex convenience outlet(s) in each elevator pit, at each Inspection &amp; Test Panel (LDU), and within each motor control (TSU) space are to be provided by the Electrical Contractor per NEC620.22 thru 620.25. Each 125-volt, single-phase, 20-ampere receptacle must be of the ground-fault circuit-interrupt (GFCI) type per NEC 620-85.</p> <p>The permanent lighting fixture that is provided in the pit shall provide an illumination of not less than 100 lux at the pit floor and at the pit platform, when provided. 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 access door.</p> <p>ANSI A17.1 rule # 2.7.9.1 and rule # 2.7.6.5.2 require the permanent illumination for the TSU and LDU spaces to be a minimum of 200 lux at floor level or working platform level.</p> <ul style="list-style-type: none"> <li>• The light switch for the working platform level about the TSU/VFD in the hoistway shall be within easy reach of the access to the hoistway.</li> <li>• A switch placed inside or close to the enclosure for the LDU shall control lighting of the enclosure. Where practicable, locate the light control switch on the lock-jamb side of the access door to the LDU.</li> <li>• Disconnecting means for top of hoistway machinery space and for hoistway pit lighting to be provided by building.</li> </ul>
<p>HOISTWAY WIRING</p>	<p>For all wiring in the hoistway, flexible cords and cables that are components of approved elevator equipment shall be supported and protected from physical damage by routing within appropriate conduit.</p>
<p>HEATING AND COOLING FOR INSPECTION &amp; TEST PANEL (LDU) &amp; MOTOR CONTROL (TSU)</p>	<p>The ambient temperature at the LDU and TSU must be maintained between 32 and 104 degrees Fahrenheit (0 to 40 Celsius).</p> <ul style="list-style-type: none"> <li>• Heating and/or cooling may be required to maintain the required temperatures.</li> <li>• Acceptable humidity level shall be maintained at 95% or less non-condensing.</li> </ul> <p>For sizing any required heating and/or cooling equipment:</p> <ul style="list-style-type: none"> <li>• The heat emission for the Inspection &amp; Test Panel (LDU) is 600 BTU/Hour</li> </ul>

	<p>with normal load cycle conditions.</p> <ul style="list-style-type: none"> <li>• The heat emission for the hoistway equipment is 4620 BTU/Hour with normal load cycle conditions.</li> <li>• The heat emission for the motor control XFMR is 2048 BTU/hr with normal load cycle conditions.</li> </ul>
UTILIZATION EQUIPMENT POWER SOURCE	Additional branch circuits, other than the lighting feed, shall be provided to supply other equipment such as displays, intercoms, TVs, etc., as required per NEC 620.25 and 620.55.
POWER SOURCE FOR EARTHQUAKE SENSOR	If an earthquake sensor (Seismic Switch) is required for the installation per Seismic Zone 2 or 3 requirements, an additional single phase 120VAC branch circuit, in addition to the car lighting feed, shall be provided by the building and routed in appropriate conduits to power the sensor.
SMOKE DETECTOR NOTES	Smoke Detectors required for firefighters service ASME A17.1-2000 2.27.3.2 (ASME Rule 211.3b) shall provide normally closed contacts rated for application of 24Vdc at 10mA resistive for each smoke detector that opens upon activation. The following Smoke Detector outputs are required to be supplied to the LDU: <ul style="list-style-type: none"> <li>• Main Floor Smoke Detector</li> <li>• Landing Floor Smoke Detectors (All but main floor)</li> <li>• Machinery Space (Hoistway) Smoke Detector: Where the hoistway contains the motor controller or is equipped with sprinklers, a smoke detector shall also be located in the hoistway in the machinery space. In jurisdictions adopting A17.1-2010, this smoke detector is always required.</li> </ul>
POWER SUPPLY FOR INSTALLATION (Optional if Power Hoist is used)	A temporary power supply is required per group of elevators for installation work. <ul style="list-style-type: none"> <li>• 220 V, 1 phase, 50/60 Hz, 20 Amp power supply, GFCI protected.</li> <li>• A Time-Delay fuse is recommended for over current protection.</li> </ul>
EMERGENCY POWER (Option)	<ol style="list-style-type: none"> <li>1. An emergency generator is to be provided that has the same voltage characteristics as the normal power supply, and has the capacity to delivery sufficient power to the main disconnect switches for the elevator for operating the specified number of elevators, used during the emergency at full speed and full load. <ul style="list-style-type: none"> <li>• Transformer in-rush current (typically ) may have significant impact to the generator performance when the power is restored after a loss of power on the elevator feeder.</li> <li>• For emergency generator selection, during operation the mains current for each operating elevator ramps up to 29.00 amps within 0.25 seconds and then decreases to less than 22.00 amps after 3.5 seconds.</li> </ul> </li> <li>2. Automatic transfer switch, or switches, is (are) to be provided for transferring from the normal to the emergency power source and back.</li> <li>3. Emergency power operation signals – The following separate indicating signals will be required from the automatic transfer switch to the RCC in the control space for each group of elevators <ol style="list-style-type: none"> <li>3.1. One dry contact (“RNO”) to close on emergency power and open on normal power. Rated for application of 24Vdc 2000 mA resistive. Provide two #18 AWG stranded copper wires.</li> <li>3.2. One normally open dry contact (“RNOPRW”) rated for application of 24Vdc at 2000 mA resistive to close 30 to 60 seconds prior to a) transfer onto emergency power or b) back to normal power. This is to prevent transfer of power while an elevator is moving, which can occur during return to normal power or on an operating test. Provide two #18 AWG stranded copper.</li> </ol> </li> </ol>

	<p>It is required that the car lighting and remote lobby monitoring/communications equipment be arranged to operate from the emergency power supply in accordance with the applicable building code.</p> <p>It is required that the emergency indicator or panel be installed within sight of the elevators to enable emergency personnel to view the elevators and the panel/indicator at the same time.</p>
By _____	Date _____ Time _____

# Schindler Elevator Corporation

HITT CONTRACTING INC  
 2900 Fairview Park Dr  
 Falls Church, VA 22042



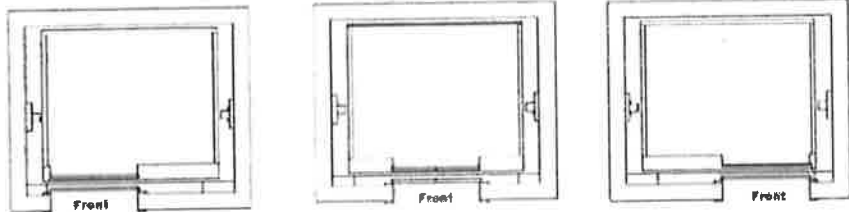
Contact: Julie Whitman  
 Telephone 3014197708  
 Fax 3014197701  
 E-mail Julie.Whitman@US.Schindler.com  
 Page 1 of 6  
 Date 12/2/2014  
 Subject Design & Finishes Confirmation

Opportunity Number 0200191119  
 Project: Mission Building  
 810 5th St Nw  
 Washington, DC 20001

Please return this completed submittal along with two (2) complete sets of approved drawings by \_\_\_\_\_ Simply confirm by initialing on the line to the right of each Design & Finish statement.  
 NOTE: Manufacturing cannot begin until this submittal is returned.

Schindler's 3300 showroom at [www.schindler3300na.com](http://www.schindler3300na.com) provides an easy-to-use cab configurator to finalize the finished features of your cab. If you use the configurator, please return the results with this submittal.

1	Power supply to be 208 volts - 3 phase, 60 cycles. Enclosed you will find a copy of our power data for review and approval by your electrical engineer and electrical contractor.	_____ Confirm
2	<p>Floor markings for car station, car position indicator and Braille plates will be B, 1, 2R, 2, 3, 4, 5.</p> <p>Available floor markings are                  A, B, C, E, F, G, H, I, J, L, M, O, P, R, S, U, UL, LL, PH, SS, RC                  -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6, 7, 8                  1R, 2R, 3R, 4R                  2A, 3A, 4A                  2B, 3B, 4B                  P1,                  *0, *1, *L, *S, *LL</p> <p>If you prefer alternate markings, please note your desired selections</p> <p>_____</p>	<p>TS</p> <p>_____ Confirm</p>

<p>3</p>	<p>Main egress floor to be 1.</p> <p>If you would prefer an alternate main egress, please note your desired selection _____</p> <p><b>NOTE:</b> Where local code requires, an asterisk will be provided to designate the main egress floor adjacent to the floor marking.</p> <p>The following markings are available with the floor marking and asterisk on the same plate: *0,*1, *2, *L and *LL. (see example).</p>  <p>All other main egress markings will require use of the adjacent blank (see example).</p> 	<p>TS _____</p> <p>Confirm</p>
<p>4</p>	<p>Firefighter's emergency return feature is included with smoke sensors by others.</p> <p>The primary return floor will be 1.        The alternate return floor will be 2.</p> <p>If you prefer an alternate return floor(s) please note _____</p>	<p>TS _____</p> <p>Confirm</p>
<p>5</p>	<p>Hoistway entrances to be as follows:</p> <ul style="list-style-type: none"> <li>- Car 1: Front, Two Speed Side Opening, Left hand door opening.</li> <li>- Car 1: Rear, Two Speed Side Opening, Right hand door</li> <li>- Door Size: 42" wide x 84" high.</li> </ul> <p>Examples of Typical Configurations: (Center Opening not available on 2100 lb car)</p> 	<p>TS _____</p> <p>Confirm</p>

<p><b>6</b></p>	<p>Hoist beam(s) at top of elevator hoistway to be located as per Schindler layout drawings with a minimum rated capacity of 7500 lbs and clearly labeled with this capacity.</p> <p>Hoistway width = 8' 4"          If not accurate change to _____</p> <p>Hoistway depth = 7' 7.625"          If not accurate change to _____</p> <p>Hoistway overhead = 13' 4"          If not accurate change to _____</p> <p>Pit depth = 5' 0"          If not accurate change to _____</p> <p>Travel = 55' 9"          If not accurate change to _____</p>	<p style="text-align: center; color: red;">TS</p> <hr/> <p>Confirm</p>												
<p><b>7</b></p>	<p>Hoistway entrances including, doors and jambs finish will be:</p> <p>6 Painted Door(s)          1 Stainless Steel #4 Door(s)</p> <table border="1" data-bbox="316 1228 1104 1438"> <tr> <td>Memphis Grey – (P419)</td> <td>Edmonton White – (E081)</td> </tr> <tr> <td>Montreal Blue – (P420)</td> <td>Sarasota Yellow – (SW6903)</td> </tr> <tr> <td>Havasu Beige – (E053)</td> <td>Tucson Orange – (SW6886)</td> </tr> <tr> <td>Napa Burgundy – (E074)</td> <td><b>Tupelo Taupe Primer – (E098)</b></td> </tr> <tr> <td>Denver Ivy – (E058)</td> <td>Jacksonville Bronze – (E039)</td> </tr> <tr> <td>Cleveland Satin – (E035)</td> <td></td> </tr> </table>	Memphis Grey – (P419)	Edmonton White – (E081)	Montreal Blue – (P420)	Sarasota Yellow – (SW6903)	Havasu Beige – (E053)	Tucson Orange – (SW6886)	Napa Burgundy – (E074)	<b>Tupelo Taupe Primer – (E098)</b>	Denver Ivy – (E058)	Jacksonville Bronze – (E039)	Cleveland Satin – (E035)		<hr/> <p>Confirm</p>
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<p>8</p>	<p>Cab type is standard Schindler 3300. Cab walls to be laminated : Refer to Schindler Standard Plastic Laminate Finishes brochure.</p> <div style="border: 1px solid red; padding: 5px; width: fit-content; margin: 10px auto;"> <p style="color: red;">Cab walls to be Brushed Stainless Steel</p> </div>	<p>Confirm</p>
<p>9</p>	<p>Cab ceiling to be - Stainless Steel #4.</p>	<p style="color: red; text-align: center;">TS</p> <p>Confirm</p>
<p>10</p>	<p>Handrails to be - Brushed Aluminum.</p>	<p style="color: red; text-align: center;">TS</p> <p>Confirm</p>
<p>11</p>	<p>Cab doors to be Stainless Steel #4.</p>	<p style="color: red; text-align: center;">TS</p> <p>Confirm</p>
<p>12</p>	<p>Cab front return and transom to be Stainless Steel #4.</p>	<p style="color: red; text-align: center;">TS</p> <p>Confirm</p>
<p>13</p>	<p>Sills to be aluminum. Platform recess to be 3/8" (10 mm). Additional cab weight including floor NOT to exceed 2,600 lbs.</p>	<p style="color: red; text-align: center;">TS</p> <p>Acknowledge</p>