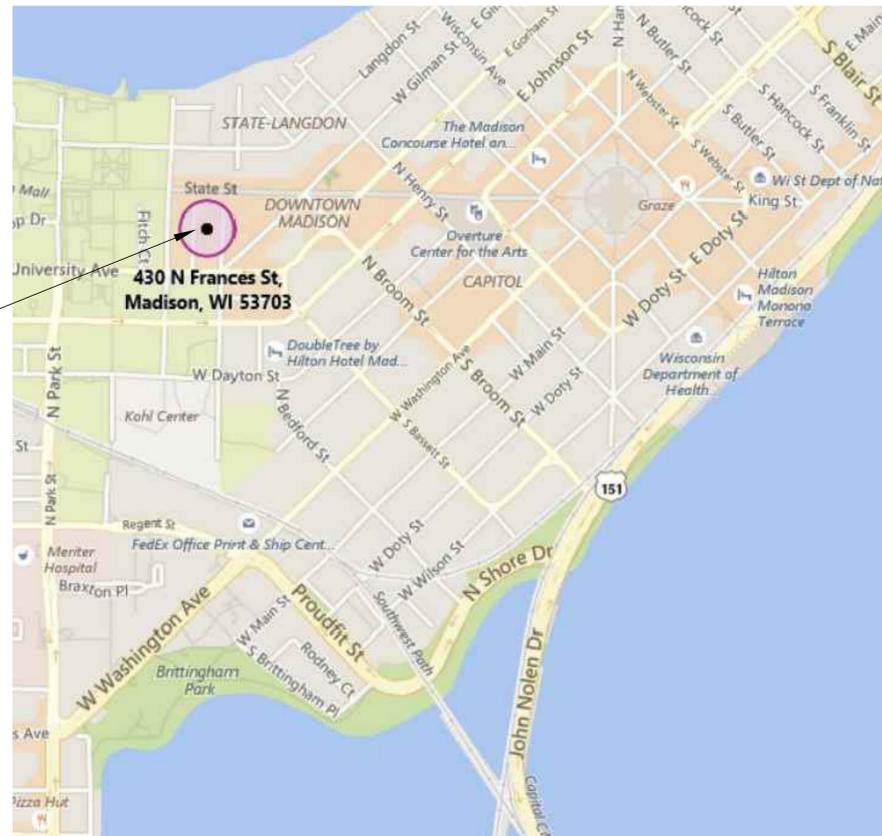


CITY OF MADISON

2018 STATE STREET CAMPUS - FRANCES PARKING GARAGE ELECTRICAL MODIFICATIONS AND UPGRADES

CITY OF MADISON CONTRACT NO. 8156 BID DRAWINGS

STATE STREET CAMPUS (FRANCES) GARAGE
430 N. FRANCES ST.



PARTIAL CITY OF MADISON LOCATION MAP



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PROJECT:

2018 STATE STREET
CAMPUS - FRANCES
PARKING GARAGE

ELECTRICAL
MODIFICATIONS AND
UPGRADES

PROJECT LOCATION:

430 N. FRANCES STREET
MADISON, WI 53703

PLAN MODIFICATIONS:

| # | Date | Description |
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Design/Drawn: HEI
Approved: HEI

SHEET TITLE:
ELECTRICAL SYMBOLS,
NOTES AND ABBREVIATIONS

SHEET NUMBER:

T000

JSD PROJECT NO:

PROJECT NOTES

GENERAL PROJECT ELECTRICAL NEW WORK NOTES:

- ALL NEW BRANCH CIRCUITS SHALL CONSIST OF NEW RACEWAY, CONDUCTORS, FITTINGS, ETC... INSTALLED ON EXISTING BUILDING FINISHES. REUSE OF EXISTING RACEWAY, CONDUCTORS, FITTINGS, ETC... IS NOT PERMITTED UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.
- PROJECT SEQUENCE AND LUMINAIRE SPACING WILL ALLOW FOR NEW LUMINAIRES AND ASSOCIATED INFRASTRUCTURE TO BE INSTALLED WHILE THE EXISTING LIGHTING SYSTEM IS STILL IN PLACE. THE RAMP SHALL BE PROVIDED WITH LIGHTING AT ALL TIMES BY WAY OF THE EXISTING LIGHTING SYSTEMS OR THE NEW SYSTEM. REFER TO FRONT END SPECIFICATION AND INSTRUCTIONS TO BIDDERS FOR THE QUANTITY OF PARKING SPACES AVAILABLE EACH DAY TO PERFORM WORK.
- ALL BRANCH CIRCUITS SHALL HAVE EQUIPMENT GROUND CONDUCTORS.
- PROVIDE SEPARATE NEUTRAL FOR EACH BRANCH CIRCUIT PHASE CONDUCTOR.
- ALL LUMINAIRES SHALL BE PROVIDED WITH LABELS IDENTIFYING THE PANEL NAME AND CIRCUIT BRANCH, FIRMLY ATTACHED, TO THE OUTSIDE OF THE LUMINAIRE. PRIOR TO LABELING, PROVIDE EXAMPLE MOCK-UP ON ONE FIXTURE FOR OWNER REVIEW AND ACCEPTANCE. AFTER ACCEPTANCE REMAINING LABELS ARE PERMITTED TO BE INSTALLED.
- WHERE NEW DEVICES ARE SHOWN THE ELECTRICAL CONTRACTOR SHALL DO ALL CUTTING AND DO ALL PATCHING AND PAINTING OF EXISTING WALLS.

GENERAL PROJECT ELECTRICAL DEMOLITION REQUIREMENTS:

- ELECTRICAL CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS AT THE PROJECT SITE BEFORE SUBMITTING COST PROPOSAL.
- THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO VERIFY DEVICES NOT SHOWN. ALL DEVICES NEED TO BE REMOVED IN THE DEMOLITION AREA UNLESS NOTED ON THE DRAWINGS.
- IT IS MANDATORY THAT THE EXISTING BUILDING REMAIN IN CONTINUOUS AND NON-INTERRUPTED OPERATION DURING REMODELING/ALTERING. SERVICES TO EXISTING BUILDING SHALL BE KEPT ON CONTINUOUS OPERATION INCLUDING POWER, LIGHTING, TELEPHONE, FIRE ALARM, ETC. ANY ABSOLUTELY NECESSARY INTERRUPTION OF THESE SERVICES TO ACCOMPLISH PROJECT CONSTRUCTION, SHALL BE HELD TO A MINIMUM AND ARRANGED WITH THE OWNER TWO (2) WEEKS IN ADVANCE. TEMPORARY SERVICES SHALL BE FURNISHED AND INSTALLED WHERE NECESSARY TO ACCOMPLISH THIS PURPOSE. TEMPORARIES SHALL BE REMOVED ONLY AFTER NEW PERMANENT SERVICES ARE INSTALLED AND FULLY OPERATIONAL.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN DEMOLITION, REMOVAL, CAPPING, STORING, ABANDONING, DISCONNECTING, RELOCATING AND RECONNECTION OF EXISTING ELECTRICAL EQUIPMENT AND MATERIAL. ALL CUTTING, PATCHING, REPAIRING, REPLACEMENT AND REFINISHING, SHALL MATCH THE EXISTING CONSTRUCTION AS NEARLY AS POSSIBLE.
- EXCEPT WHERE OTHERWISE SHOWN OR NOTED ON DRAWING - "TO BE RETAINED, RELOCATED" OR HEREINAFTER NOTED, ALL EXISTING ELECTRICAL EQUIPMENT AND MATERIAL IN AREAS TO BE REMODELED/ALTERED SHALL BE REMOVED WHERE THEY INTERFERE WITH PROPOSED NEW CONSTRUCTION AND/OR INTERFERE WITH PROPOSED USAGE OF SPACE BY OWNER AS FOLLOWS:
 - REMOVE ANY CONDUITS PROTRUDING ABOVE FINISHED FLOOR, CAP AND FINISH OVER WITH FLOOR MATERIAL TO MATCH EXISTING.
 - REMOVE ALL LIGHT FIXTURES, SWITCHES, ETC. AND ASSOCIATED WIRING NOTED FOR DEMOLITION.
 - ANY FEEDERS, CONDUITS, BRANCH CIRCUITS, SIGNAL AND TELEPHONE CIRCUITS, ETC. PASSING THROUGH THE REMODELED AREAS TO SERVE (OR BE SERVED FROM) EXISTING ADJACENT, REMOTE OR SURROUNDING AREAS THAT ARE TO REMAIN, SHALL BE RETAINED AND KEPT OPERATIONAL AND SHALL BE REROUTED IN ALL CASES WHERE THEY INTERFERE WITH ANY NEW WORK OR USAGE TO BE ACCOMPLISHED IN THE REMODELED AREA.
 - WHERE DEVICES ARE OMITTED FROM PRESENT BRANCH CIRCUITS, THE REMAINING DEVICES SHALL BE REWIRED, IF NEEDED AND AS REQUIRED, TO REMAIN ON THEIR RESPECTIVE CIRCUITS AND IN OPERATING CONDITION.
- ALL WIRING (POWER, LIGHTING) NOT REUSED FOR REMODELING AREAS SHALL BE COMPLETELY REMOVED BACK TO ASSOCIATED PANELS. EMPTY BOXES AND CONDUITS SHALL BE REMOVED BEYOND REMODELED AREA.
- THE OWNER SHALL HAVE THE FIRST CHOICE TO ACCEPT EXISTING DEVICES BEING REMOVED.

GENERAL PROJECT FUEL PIPING NEW WORK NOTES:

- PITCH HORIZONTAL PIPING DOWN 1" IN 60 FEET IN THE DIRECTION OF FLOW. INSTALL A 4" MINIMUM DEPTH DIRT LEG AT THE BOTTOM OF EACH VERTICAL RUN AND AT EACH APPLIANCE. WHEN INSTALLING MAINS AND BRANCHES, CAP GAS TIGHT EACH TEE OR PIPE END WHICH WILL NOT BE IMMEDIATELY EXTENDED. ALL BRANCH CONNECTIONS TO THE MAIN SHALL BE FROM THE TOP OR SIDE OF THE MAIN.
- INSTALL A SHUT OFF VALVE AT EACH APPLIANCE. PROVIDE A VALVED CONNECTION AT THE MAIN FOR EQUIPMENT AND APPLIANCES FURNISHED BY OTHERS.
- EACH GAS PRESSURE REDUCING VALVE VENT AND RELIEF VALVE VENT SHALL BE RUN SEPARATELY TO A POINT OUTSIDE OF THE BUILDING, TERMINATED WITH A SCREENED VENT CAP, AND LOCATED ACCORDING TO GAS UTILITY REGULATIONS.

ELECTRICAL ABBREVIATIONS

| ABBR | DESCRIPTION | ABBR | DESCRIPTION |
|----------|--|------|----------------------------------|
| A | AMP AMPERE | MMC | MANUAL MOTOR CONTROLLER |
| AC | ABOVE COUNTER | MOA | MULTI-OUTLET ASSEMBLY |
| AFF | ABOVE FINISHED FLOOR | MSS | MANUAL STARTER SWITCH |
| AIC | AMPERE INTERRUPTING CAPACITY | MTR | MOTOR |
| AL | ALUMINUM | MC | MECHANICAL CONTRACTOR |
| ARCH | ARCHITECT, ARCHITECTURE | MFR | MANUFACTURER |
| ATS | AUTOMATIC TRANSFER SWITCH | N/C | NORMALLY CLOSED |
| AUX | AUXILIARY | N/O | NORMALLY OPEN |
| AV | AUDIO - VISUAL | NEC | NATIONAL ELECTRICAL CODE |
| AP | ACCESS PANEL | NEMA | NATIONAL ELECTRICAL MFR'S ASSOC. |
| BC | BELOW COUNTER | NFSS | NON-FUSED SAFETY SWITCH |
| BTM | BOTTOM | NIC | NOT IN CONTRACT |
| C | CONDUIT | NL | NIGHT LIGHT |
| CB | CIRCUIT BREAKER | NTS | NOT TO SCALE |
| CCTV | CLOSED CIRCUIT TELEVISION | O.C. | ON CENTER |
| CRT | CATHODE-RAY TUBE | OL | OVERLOADS |
| C/T | CURRENT TRANSFORMER | P | POLE |
| CU | COPPER | PF | POWER FACTOR |
| CTR | COUNTER | PH | PHASE |
| DC | DIRECT CURRENT | PNL | PANEL |
| DISC | DISCONNECT | PP | POWER POLE |
| DIST | DISTRIBUTION | PR | PAIR |
| DN | DOWN | PRI | PRIMARY |
| EC | ELECTRICAL CONTRACTOR | P/T | POTENTIAL TRANSFORMER |
| ECB | ENCLOSED CIRCUIT BREAKER | PVC | POLYVINYL CHLORIDE |
| ELEC | ELECTRIC, ELECTRICAL | PC | PLUMBING CONTRACTOR |
| EM | EMERGENCY | RMC | RIGID METALLIC CONDUIT |
| EMT | ELECTRICAL METALLIC TUBING | REQD | REQUIRED |
| EQ | EQUIPMENT | RVT | REDUCED VOLTAGE TRANSFORMER |
| EWC | ELECTRIC WATER COOLER | SIN | SOLID NEUTRAL |
| EX | EXISTING | SPEC | SPECIFICATION |
| EXP | EXPLOSION PROOF | SPKR | SPEAKER |
| EXT | EXTERIOR | SP | SPARE |
| F | FUSE | SW | SWITCH |
| FA | FIRE ALARM | SWBD | SWITCHBOARD |
| FLR | FLOOR | SWGR | SWITCHGEAR |
| FVNR | FULL VOLTAGE NON-REVERSING | SQFT | SQUARE FOOT |
| FVR | FULL VOLTAGE REVERSING | SS | STAINLESS STEEL |
| FBO | FURNISHED BY OWNER/ OTHERS | SC | SECURITY CONTRACTOR |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER | TEL | TELEPHONE TERM TERMINAL |
| GND, GRD | GROUND | XFMR | TRANSFORMER |
| GC | GENERAL CONTRACTOR | TV | TELEVISION |
| GWH | GAS WATER HEATER | TYP | TYPICAL |
| HOA | HAND-OFF-AUTOMATIC SWITCH | UE | UNDERGROUND ELECTRICAL |
| HP | HORSEPOWER | UG | UNDERGROUND |
| HV | HIGH VOLTAGE | UH | UNIT HEATER |
| HVAC | HEATING, VENTILATING, AIR CONDITIONING | UT | UNDERGROUND TELEPHONE |
| HC | HEATING CONTRACTOR | UOD | UNLESS OTHERWISE DENOTED |
| IMC | INTERMEDIATE METALLIC CONDUIT | V | VOLT |
| JB | JUNCTION BOX | VA | VOLT AMPERES |
| KV | KILOVOLT | VFD | VARIABLE FREQUENCY DRIVE |
| KVA | KILOVOLT-AMPERE | VOL | VOLUME |
| KVAR | KILOVOLT-AMPERE REACTIVE | VC | VENTILATION CONTRACTOR |
| KW | KILOWATT | W | WATT |
| KWH | KILOWATT HOUR | W/ | WITH |
| LV | LOW VOLTAGE | W/O | WITHOUT |
| MCC | MOTOR CONTROL CENTER | WG | WIRE GUARD/PROTECTIVE SHIELDING |
| MCP | MOTOR CIRCUIT PROTECTOR | WP | WEATHERPROOF |
| MCB | MAIN CIRCUIT BREAKER | 2S1W | 2 SPEED SINGLE WINDING |
| MIN | MINIMUM | 2S2W | 2 SPEED DOUBLE WINDING |
| MISC | MISCELLANEOUS | TFA | TO FLOOR ABOVE |
| MLO | MAIN LUGS ONLY | TFB | TO FLOOR BELOW |

NOTE:
THIS IS A COMPOSITE LIST OF ABBREVIATIONS, NOT ALL PERTAIN SPECIFICALLY TO THIS JOB.

HVAC SYMBOL LIST

| SYMBOL | DESCRIPTION |
|--------|-------------------------------------|
| — NG — | NATURAL GAS WITH PRESSURE INDICATED |
| — O — | ELBOW TURNED UP |
| — G — | ELBOW TURNED DOWN |
| — T — | TEE - TOP OUTLET |
| — B — | TEE - BOTTOM OUTLET |
| — S — | SCREWED UNION |
| — F — | FLANGED UNION |
| — V — | PRESSURE REDUCING VALVE |
| — C — | NEW CONNECTION TO EXISTING |
| [CO-S] | CARBON DIOXIDE SENSOR |

POWER SYSTEMS

| SYMBOL | DESCRIPTION |
|--------------------------------|---|
| [SWBD 1] | LARGE ELECTRICAL EQUIPMENT WITH DESIGNATION - DRAWN TO SCALE |
| [Hatched Box] | DISTRIBUTION PANEL WITH DESIGNATION |
| [Hatched Box] | BRANCH PANEL WITH DESIGNATION |
| [Motor Symbol] | MOTOR WITH DESIGNATION |
| [Mechanical Symbol] | MECHANICAL EQUIPMENT CONNECTION WITH DESIGNATION |
| [Disconnect Symbol] | DISCONNECT SWITCH |
| [Motor Starter Symbol] | MOTOR STARTER |
| [Combination Symbol] | COMBINATION MOTOR STARTER / DISCONNECT SWITCH |
| [VFD Symbol] | VARIABLE FREQUENCY DRIVE |
| [MMS Symbol] | MANUAL MOTOR STARTER WITH THERMAL OVERLOADS |
| [MTS Symbol] | MOTOR RATED TOGGLE SWITCH |
| [Junction Box Symbol] | JUNCTION BOX |
| [Pull Box Symbol] | PULL BOX |
| [Contactor Symbol] | CONTACTOR |
| [Control Panel Symbol] | EQUIPMENT CONTROL PANEL |
| [Transformer Symbol] | TRANSFORMER |
| [Poke Thru Symbol] | POKE THRU |
| [Equipment Connection Symbol] | EQUIPMENT CONNECTION |
| [GEN Symbol] | GENERATOR REMOTE ANNUNCIATOR |
| [TAP Symbol] | BUSSED TAP CABINET |
| [GDS Symbol] | GENERATOR DOCKING STATION |
| [PP Symbol] | AUTOMATIC DOOR OPERATOR ACTIVATION PUSH PLATE |
| [EPO Symbol] | EMERGENCY POWER OFF STATION |
| [UP Symbol] | UP - DOWN - STOP PUSH BUTTON CONTROL STATION |
| [Denotes Wall Mounting Symbol] | DENOTES WALL MOUNTING |
| [Ground Bus Bar Symbol] | GROUND BUS BAR - WALL MOUNTED |
| [Grounding System Type Symbol] | GROUNDING SYSTEM TYPE: GEB - GROUNDING ELECTRODE MGEB - MAIN GROUNDING ELECTRODE TGB - TELECOMMUNICATIONS GROUND |
| [Ground Symbol] | GROUND |

SHEET KEYED NOTED

| | |
|------------------|----------------------|
| [Diamond Symbol] | NEW WORK NOTE |
| [Square Symbol] | DEMOLITION WORK NOTE |

DETAILING ANNOTATION

| SYMBOL | DESCRIPTION |
|----------------------------------|------------------------------------|
| [Enlarged Floor Plan Mark] | ENLARGED FLOOR PLAN OR DETAIL MARK |
| [Detail Reference Symbol] | DETAIL REFERENCE |
| [Sheet Reference Symbol] | SHEET REFERENCE |
| [Section Mark Symbol] | SECTION MARK |
| [Detail Reference Symbol] | DETAIL REFERENCE |
| [Sheet Reference Symbol] | SHEET REFERENCE |
| [Interior Elevation Mark Symbol] | INTERIOR ELEVATION MARK |
| [Detail Reference Symbol] | DETAIL REFERENCE |
| [Sheet Reference Symbol] | SHEET REFERENCE |

LINE WEIGHT KEY

| | |
|--------------------|--|
| [Dark Solid Line] | ALL ITEMS INDICATED BY A DARK SOLID LINE ARE NEW |
| [Light Solid Line] | ALL ITEMS INDICATED BY A LIGHT SOLID LINE ARE EXISTING TO REMAIN |
| [Dark Dashed Line] | ALL ITEMS INDICATED BY A DARK DASHED LINE ARE EXISTING TO BE REMOVED OR RELOCATED. |

RECEPTACLES

| SYMBOL | DESCRIPTION |
|--|--|
| [Simplex Receptacle Symbol] | SIMPLEX RECEPTACLE |
| [Simplex Receptacle Emergency Symbol] | SIMPLEX RECEPTACLE EMERGENCY |
| [Simplex Receptacle Above Counter Symbol] | SIMPLEX RECEPTACLE ABOVE COUNTER |
| [Duplex Receptacle Symbol] | DUPLEX RECEPTACLE |
| [Duplex Receptacle Types Symbol] | DUPLEX RECEPTACLE TYPES: EWC - ELECTRIC WATER COOLER G - GROUND FAULT CIRCUIT INTERRUPTER TV - TELEVISION OUTLET, ISOLATED GROUND TYPE. T - TAMPER RESISTANT W - WEATHER RESISTANT IG - ISOLATED GROUND PRJ - CEILING MOUNTED VIDEO PROJECTOR, ISOLATED GROUND TYPE |
| [Duplex Receptacle Above Counter Symbol] | DUPLEX RECEPTACLE ABOVE COUNTER |
| [Double Duplex Receptacle Symbol] | DOUBLE DUPLEX RECEPTACLE |
| [Floor Mounted Duplex Receptacle Symbol] | FLOOR MOUNTED DUPLEX RECEPTACLE |
| [Ceiling Mounted Duplex Receptacle Symbol] | CEILING MOUNTED DUPLEX RECEPTACLE |
| [Duplex Receptacle Emergency Symbol] | DUPLEX RECEPTACLE EMERGENCY |
| [Duplex Receptacle Above Counter Emergency Symbol] | DUPLEX RECEPTACLE ABOVE COUNTER EMERGENCY |
| [Quadruplex Receptacle Emergency Symbol] | QUADRUPLIX RECEPTACLE EMERGENCY |
| [Recessed Floor Box Symbol] | RECESSED FLOOR BOX - SEE FLOOR BOX SCHEDULE |
| [Floor Box Designation Symbol] | FLOOR BOX DESIGNATION. SEE FLOOR BOX SCHEDULE |
| [Receptacles in Surface Raceway Assembly Symbol] | RECEPTACLES IN SURFACE RACEWAY ASSEMBLY |
| [Raceway Designation Symbol] | RACEWAY DESIGNATION, SEE SURFACE RACEWAY SCHEDULE |

SWITCHES

| SYMBOL | DESCRIPTION |
|---|---|
| [Single Pole Symbol] | SINGLE POLE (LOWER CASE LETTER INDICATES SWITCH LEG) |
| [Switch Types Symbol] | SWITCH TYPES: 2 - DOUBLE POLE 3 - THREE WAY 4 - FOUR WAY D - DIMMER PL - FLUOR LIGHT T - TIMER K - KEYED |
| [Occupancy Sensor Symbol] | OCCUPANCY SENSOR - SEE SCHEDULE |
| [Sensor Type Symbol] | SENSOR TYPE SWITCHING DESIGNATION |
| [Indoor Photo Sensor Symbol] | INDOOR PHOTO SENSOR - DAYLIGHT SENSOR - SEE SCHEDULE |
| [Sensor Type Symbol] | SENSOR TYPE SWITCHING DESIGNATION |
| [Classroom Switch Station Symbol] | CLASSROOM SWITCH STATION - SEE SCHEDULE |
| [Switch Designation Symbol] | SWITCH DESIGNATION |
| [Emergency Lighting Control Relay Symbol] | EMERGENCY LIGHTING CONTROL RELAY, UL924 LISTED |

LIGHTING FIXTURES

| SYMBOL | DESCRIPTION |
|---|--|
| [Fixture Type Symbol] | FIXTURE TYPE |
| [Circuit Control Device Symbol] | CIRCUIT CONTROL DEVICE |
| [Surface/Recessed Linear Fluorescent, Normal Power Symbol] | SURFACE/ RECESSED LINEAR FLUORESCENT, NORMAL POWER |
| [Surface/Recessed Linear Fluorescent, Emergency Power Symbol] | SURFACE/ RECESSED LINEAR FLUORESCENT, EMERGENCY POWER |
| [Linear Wall Wash, Normal Power Symbol] | LINEAR WALL WASH, NORMAL POWER |
| [Linear Wall Wash, Emergency Power Symbol] | LINEAR WALL WASH, EMERGENCY POWER |
| [Linear Pendant, Normal Power Symbol] | LINEAR PENDANT, NORMAL POWER |
| [Cove Strip, Normal Power Symbol] | COVE STRIP, NORMAL POWER |
| [Linear Wall Mounted, Normal Power Symbol] | LINEAR WALL MOUNTED, NORMAL POWER |
| [Recessed Multi Spot, Normal Power Symbol] | RECESSED MULTI SPOT, NORMAL POWER |
| [Surface/Suspended Pendant, Normal Power Symbol] | SURFACE/SUSPENDED PENDANT, NORMAL POWER |
| [Surface/Suspended Fluorescent, Normal Power Symbol] | SURFACE/SUSPENDED FLUORESCENT, NORMAL POWER |
| [Surface/Suspended Fluorescent, Emergency Power Symbol] | SURFACE/SUSPENDED FLUORESCENT, EMERGENCY POWER |
| [Surface/Recessed Downlight, Normal Power Symbol] | SURFACE / RECESSED DOWNLIGHT, NORMAL POWER |
| [Surface/Recessed Downlight, Emergency Power Symbol] | SURFACE / RECESSED DOWNLIGHT, EMERGENCY POWER |
| [Surface/Recessed Wall Wash, Normal Power Symbol] | SURFACE / RECESSED WALL WASH, NORMAL POWER |
| [Surface/Recessed Wall Wash, Emergency Power Symbol] | SURFACE / RECESSED WALL WASH, EMERGENCY POWER |
| [Wall Mounted Sconce or Wallpack, Normal Power Symbol] | WALL MOUNTED SCONCE OR WALLPACK, NORMAL POWER |
| [Wall Mounted Sconce or Wallpack, Emergency Power Symbol] | WALL MOUNTED SCONCE OR WALLPACK, EMERGENCY POWER |
| [Recessed Downlight, Normal Power Symbol] | RECESSED DOWNLIGHT, NORMAL POWER |
| [Task Light - Positional Base Type Symbol] | TASK LIGHT - POSITIONAL BASE TYPE. |
| [Exit Sign, Ceiling Mounted - Faces and Arrows as Shown Symbol] | EXIT SIGN, CEILING MOUNTED - FACES AND ARROWS AS SHOWN |
| [Exit Sign, Wall Mounted - Faces and Arrows as Shown Symbol] | EXIT SIGN, WALL MOUNTED - FACES AND ARROWS AS SHOWN |
| [Battery Pack Emergency Lighting Symbol] | BATTERY PACK EMERGENCY LIGHTING |
| [Denotes Wall Mounting of Light Symbol] | DENOTES WALL MOUNTING OF LIGHT |



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PROJECT:

2018 STATE STREET
CAMPUS - FRANCES
PARKING GARAGE

ELECTRICAL
MODIFICATIONS AND
UPGRADES

PROJECT LOCATION:
430 N. FRANCES STREET
MADISON, WI 53703

PLAN MODIFICATIONS:

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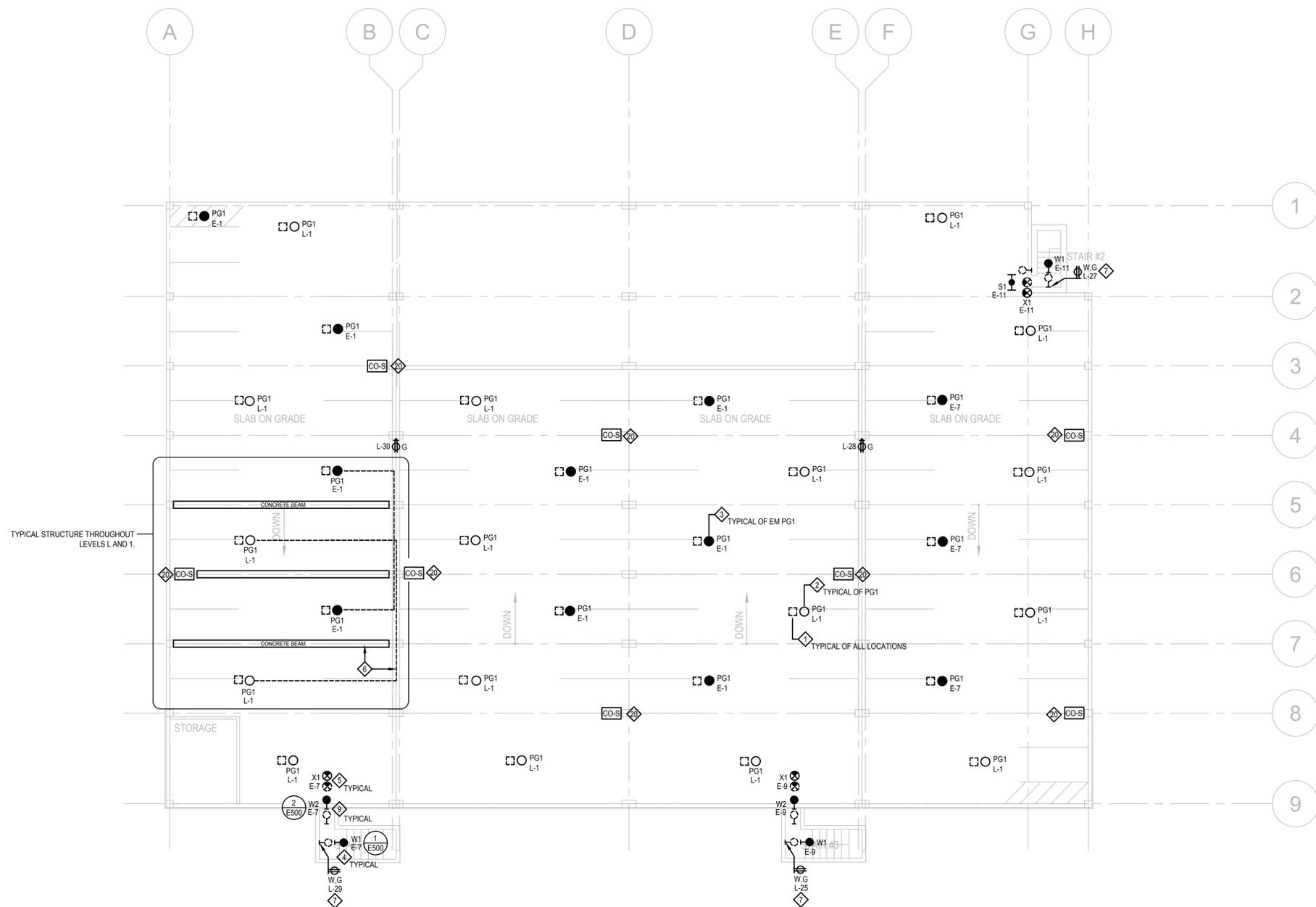
Design/Drawn: HEI
Approved: HEI

SHEET TITLE:
ELECTRICAL SYMBOLS,
NOTES AND ABBREVIATIONS

SHEET NUMBER:

E000

JSD PROJECT NO:



1 LEVEL L ELECTRICAL PLAN
 SCALE: 1/16" = 1'-0"
 24' 0 2 8 16 32

LIGHT FIXTURE LEGEND

- FIXTURE DESIGNATION - SEE SCHEDULE
- PG1
- L-3 LIGHTING CIRCUIT
- pce CONTROL DESIGNATION (IF APPLICABLE)
- SHADED / FILLED LOCATION INDICATES EMERGENCY POWER

LINE WEIGHT KEY

- ALL ITEMS INDICATED BY A DARK SOLID LINE ARE NEW
- ALL ITEMS INDICATED BY A LIGHT SOLID LINE ARE EXISTING TO REMAIN
- ALL ITEMS INDICATED BY A DARK DASHED LINE ARE EXISTING TO BE REMOVED OR RELOCATED.

GENERAL NOTES:

- REFER TO SHEET E000 FOR GENERAL PROJECT NOTES.
- ALL RACEWAY AND CONDUCTORS FROM PANELS E AND L SHALL BE NEW.

KEYED ELECTRICAL NOTES:

- REMOVE EXISTING HD LUMINAIRE ALONG WITH ASSOCIATED BRANCH CIRCUIT AND EXPOSED RACEWAY. RACEWAY EMBEDDED WITHIN CONCRETE STRUCTURE TO BE ABANDONED IN PLACE.
- INSTALL NEW LED LUMINAIRE. CONNECT TO NEW BRANCH CIRCUIT INDICATED.
- NEW LED LUMINAIRE FED FROM EMERGENCY LIGHTING PANELBOARD. BRANCH CIRCUIT CONDUCTORS SHALL BE ROUTED WITHIN NEW DEDICATED RACEWAY COMPLYING WITH NEC 700.
- REMOVE EXISTING WALL MOUNT STAIR LIGHT AND INSTALL NEW WALL MOUNT FIXTURE BELOW.
- REMOVE EXISTING EXIT SIGN AND INSTALL NEW EXIT SIGN AS DIRECT REPLACEMENT.
- LEVEL L AND LEVEL 1 ARE SOLID BEAMS WITH NO EAST-WEST PATH TO ROUTE RACEWAY FROM FIXTURE TO FIXTURE. RACEWAY SHALL BE ROUTED IN OPEN SPACE BETWEEN RAMP SECTIONS.
- MOUNT RECEPTACLE AT 18" AFF IN STAIR WITH COVER (CAST-IN-USE STYLE) AND PADLOCK HASP. CORE CONCRETE LANDINGS AS REQUIRED TO ROUTE RACEWAY VERTICALLY.
- REPLACE EXISTING WALL MOUNTED LIGHT ABOVE STAIR DOOR. CONNECT TO CIRCUIT NOTED.
- SURFACE MOUNT CARBON MONOXIDE SENSOR MOUNTED AT 60" AFF ON FACE OF COLUMN OR WALL. PROVIDE WIRED CONNECTIONS BETWEEN SENSORS AND TO MONITORING CONTROL PANEL LOCATED IN LEVEL 1 MECHANICAL ROOM. ALL WIRING SHALL BE IN PVC CONDUIT.



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**2018 STATE STREET
 CAMPUS - FRANCES
 PARKING GARAGE**

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 MODIFICATIONS AND
 UPGRADES**

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 MADISON, WI 53703**

PLAN MODIFICATIONS:

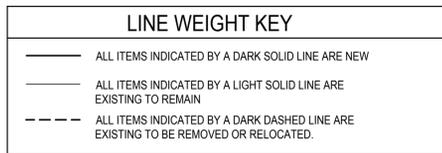
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Design/Drawn: HEI
 Approved: HEI

SHEET TITLE:
**LEVEL L
 ELECTRICAL
 PLAN**

SHEET NUMBER:
E100

JSD PROJECT NO:

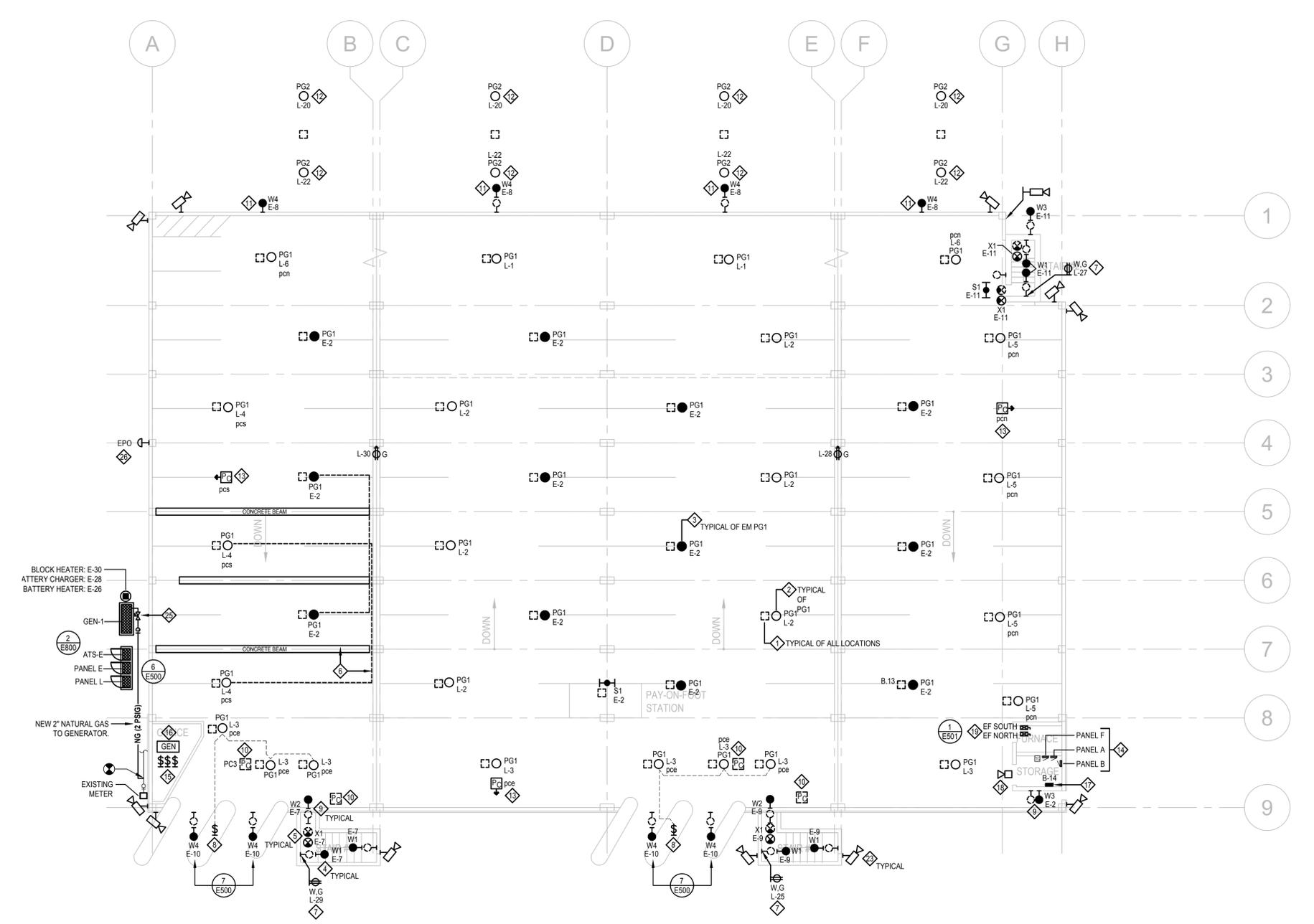


GENERAL NOTES:

- REFER TO SHEET E000 FOR GENERAL PROJECT NOTES.
- ALL RACEWAY AND CONDUCTORS FROM PANELS E AND L SHALL BE NEW.

KEYED ELECTRICAL NOTES:

- REMOVE EXISTING HID LUMINAIRE ALONG WITH ASSOCIATED BRANCH CIRCUIT AND EXPOSED RACEWAY. RACEWAY EMBEDDED WITHIN CONCRETE STRUCTURE TO BE ABANDONED IN PLACE.
- INSTALL NEW LED LUMINAIRE. CONNECT TO NEW BRANCH CIRCUIT INDICATED.
- NEW LED LUMINAIRE FED FROM EMERGENCY LIGHTING PANELBOARD. BRANCH CIRCUIT CONDUCTORS SHALL BE ROUTED WITHIN NEW DEDICATED RACEWAY COMPLYING WITH NEC 700.
- REMOVE EXISTING WALL MOUNT STAIR LIGHT AND INSTALL NEW WALL MOUNT FIXTURE BELOW.
- REMOVE EXISTING EXIT SIGN AND INSTALL NEW EXIT SIGN AS DIRECT REPLACEMENT.
- LEVEL L AND LEVEL 1 ARE SOLID BEAMS WITH NO EAST-WEST PATH TO ROUTE RACEWAY FROM FIXTURE TO FIXTURE. RACEWAY SHALL BE ROUTED IN OPEN SPACE BETWEEN RAMP SECTIONS.
- MOUNT RECEPTACLE AT 18" AFF IN STAIR WITH COVER (CAST IN-USE STYLE) AND PADLOCK HASP. CORE CONCRETE LANDINGS AS REQUIRED TO ROUTE RACEWAY VERTICALLY.
- WIRE FOR 0-10V DIMMING CONTROL. PROVIDE WATTSTOPPER ADF-120277-W OR SIMILAR AND MOUNT IN ATTENDANT BOOTH. ON-OFF SWITCHING CONTROL DOES NOT OCCUR AT DIMMER.
- REPLACE EXISTING WALL MOUNTED LIGHT WITH NEW AS DIRECT REPLACEMENT. CONNECT TO CIRCUIT NOTED.
- REMOVE EXISTING PHOTOCELL DEVICE ALONG WITH ASSOCIATED WIRING AND EXPOSED RACEWAY.
- MOUNT 18" DOWN FROM LEVEL 1 BARRIER WALL AT APPROXIMATELY THE SAME HEIGHT AS THE REMOVED FIXTURES.
- MOUNT FIXTURES BELOW LEVEL 2 BRIDGE OVER HAWTHORNE CT. TO ILLUMINATE ALLEY PAVEMENT.
- PHOTOCELL WITH INPUT TO CONTROLLABLE BREAKER SYSTEM.
- EXISTING PANELS TO REMAIN. PROVIDE NEW PANEL DIRECTORY TO REFLECT REVISED CIRCUITING AND REMOVED LOADS.
- OVERRIDE SWITCH INPUTS TO CONTROLLABLE BREAKER SYSTEM FOR TEMPORARY OVERRIDE OF: STAIR RECEPTACLES (ON/OFF), RAMP LIGHTING (ALL ON) AND RAMP RECEPTACLES (ON/OFF). MOUNT IN OFFICE AND COORDINATE LOCATION WITH OWNER PRIOR TO ROUGH IN.
- GENERATOR REMOTE ANNUNCIATOR. MOUNT IN OFFICE AT 60" AFF TO CENTER OF PANEL. COORDINATE LOCATION WITH OWNER PRIOR TO ROUGH IN.
- CO MONITORING SYSTEM HEAD END. PROVIDE A DEDICATED 120V CIRCUIT FROM EXISTING PANEL B.
- CO MONITORING SYSTEM REMOTE ALARM HORN. MOUNT ABOVE DOOR.
- NEW COMBINATION 30A-3P NON-FUSED DISCONNECT AND FVNR MOTOR STARTER FOR EXISTING GARAGE EXHAUST FANS. RECONFIGURE PANEL B CIRCUITS 31.33.55 AND 32.34.36 TO BE ROUTED THROUGH MOTOR STARTERS FOR INTERLOCK WITH CO MONITORING SYSTEM. STACK ENCLOSURES VERTICALLY IN EXISTING FURNACE ROOM. FIELD VERIFY EXISTING MOTOR HP AND ADJUST STARTER OVERLOADS AS REQUIRED.
- PROVIDE AS PART OF THIS PROJECT A 4" SQUARE PVC JUNCTION BOX WITH GASKETED COVER AND DEDICATED 1/2" PVC RACEWAY TO RAMP OFFICE FOR FUTURE CAMERA.
- PROVIDE PRESSURE REDUCING VALVE TO ACHIEVE REQUIRED 7-11 IN. H2O AND MAKE FINAL NATURAL GAS CONNECTION TO GENERATOR. FUEL SUPPLY LINE INLET ON GENERATOR IS 1-1/4" NPT. COORDINATE PRESSURE REQUIREMENTS WITH GENERATOR SUBMITTAL.
- EMERGENCY POWER OFF STATION FOR GENERATOR. SEE SPECIFICATION FOR STATION REQUIREMENTS.



1 LEVEL 1 ELECTRICAL PLAN
 SCALE: 1/16" = 1'-0"
 24' 0" 2' 8" 16" 32'



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 Email: info@henneman.com
 Website: http://www.henneman.com
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PROJECT:
**2018 STATE STREET
 CAMPUS - FRANCES
 PARKING GARAGE**

**ELECTRICAL
 MODIFICATIONS AND
 UPGRADES**

PROJECT LOCATION:
**430 N. FRANCES STREET
 MADISON, WI 53703**

PLAN MODIFICATIONS:

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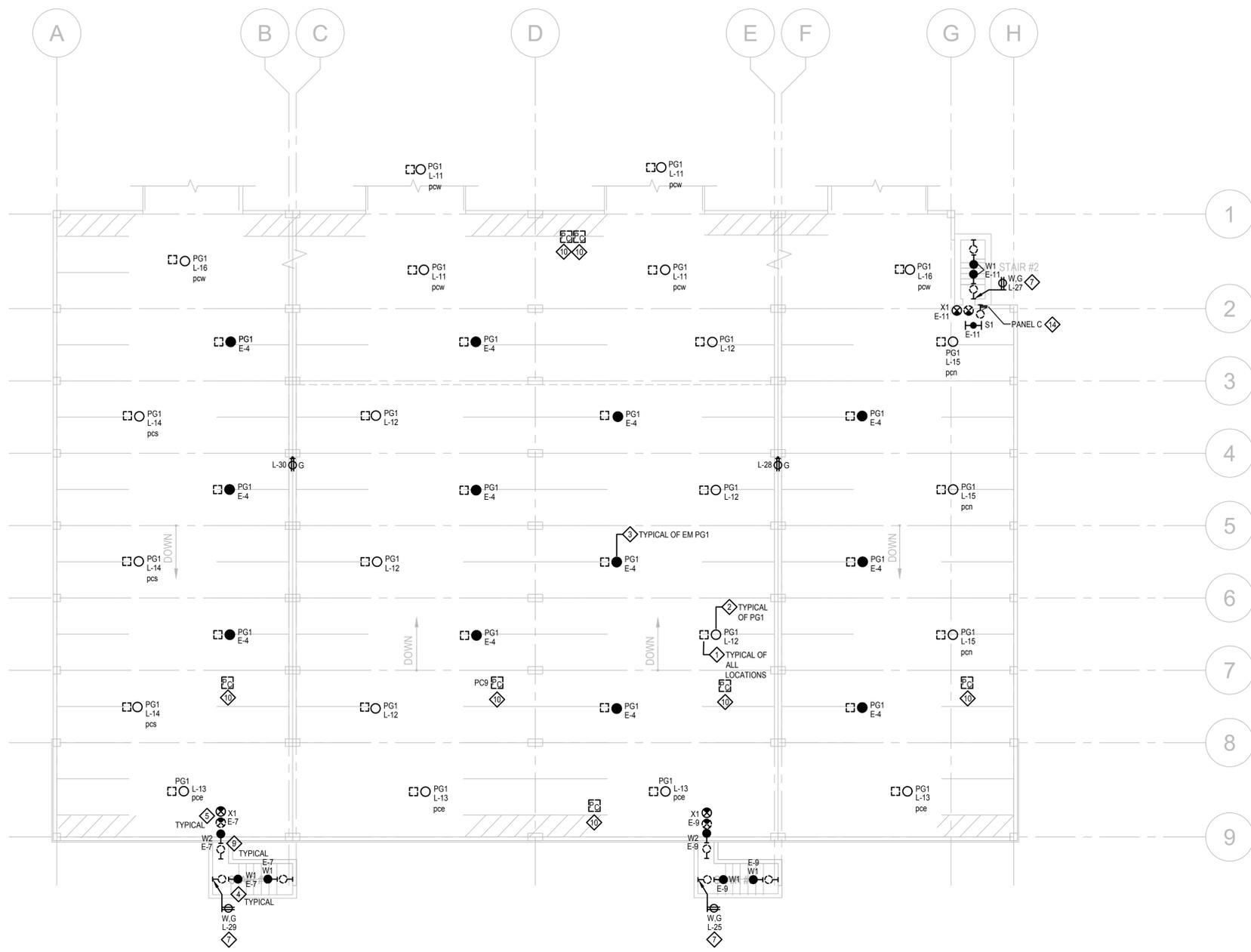
Design/Drawn: HEI
 Approved: HEI

SHEET TITLE:
**LEVEL 1
 ELECTRICAL
 PLAN**

SHEET NUMBER:
E101

JSD PROJECT NO:

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1 LEVEL 3 ELECTRICAL PLAN
 SCALE: 1/16" = 1'-0"
 24' 0 2 8 16 32

LIGHT FIXTURE LEGEND

- FIXTURE DESIGNATION - SEE SCHEDULE
- PG1 L-3 LIGHTING CIRCUIT
- pce CONTROL DESIGNATION (IF APPLICABLE)
- SHADED / FILLED LOCATION INDICATES EMERGENCY POWER

LINE WEIGHT KEY

- ALL ITEMS INDICATED BY A DARK SOLID LINE ARE NEW
- ALL ITEMS INDICATED BY A LIGHT SOLID LINE ARE EXISTING TO REMAIN
- ALL ITEMS INDICATED BY A DARK DASHED LINE ARE EXISTING TO BE REMOVED OR RELOCATED.

GENERAL NOTES:

- REFER TO SHEET E000 FOR GENERAL PROJECT NOTES.
- ALL RACEWAY AND CONDUCTORS FROM PANELS E AND L SHALL BE NEW.

KEYED ELECTRICAL NOTES:

- REMOVE EXISTING HID LUMINAIRE ALONG WITH ASSOCIATED BRANCH CIRCUIT AND EXPOSED RACEWAY. RACEWAY EMBEDDED WITHIN CONCRETE STRUCTURE TO BE ABANDONED IN PLACE.
- INSTALL NEW LED LUMINAIRE. CONNECT TO NEW BRANCH CIRCUIT INDICATED.
- NEW LED LUMINAIRE FED FROM EMERGENCY LIGHTING PANELBOARD. BRANCH CIRCUIT CONDUCTORS SHALL BE ROUTED WITHIN NEW DEDICATED RACEWAY COMPLYING WITH NEC 700.
- REMOVE EXISTING WALL MOUNT STAIR LIGHT AND INSTALL NEW WALL MOUNT FIXTURE BELOW.
- REMOVE EXISTING EXIT SIGN AND INSTALL NEW EXIT SIGN AS DIRECT REPLACEMENT.
- MOUNT RECEPTACLE AT 18" AFF IN STAIR WITH COVER (CAST IN-USE STYLE) AND PADLOCK HASP. CORE CONCRETE LANDINGS AS REQUIRED TO ROUTE RACEWAY VERTICALLY.
- REPLACE EXISTING WALL MOUNTED LIGHT WITH NEW AS DIRECT REPLACEMENT. CONNECT TO CIRCUIT NOTED.
- REMOVE EXISTING PHOTOCELL DEVICE ALONG WITH ASSOCIATED WIRING AND EXPOSED RACEWAY.
- EXISTING PANEL TO REMAIN. PROVIDE NEW PANEL DIRECTORY TO REFLECT REVISED CIRCUITING AND REMOVED LOADS.



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CONSULTANT:



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 Website: http://www.henneman.com
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PROJECT:
**2018 STATE STREET
 CAMPUS - FRANCES
 PARKING GARAGE**

**ELECTRICAL
 MODIFICATIONS AND
 UPGRADES**

PROJECT LOCATION:
**430 N. FRANCES STREET
 MADISON, WI 53703**

PLAN MODIFICATIONS:

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Design/Drawn: HEI
 Approved: HEI

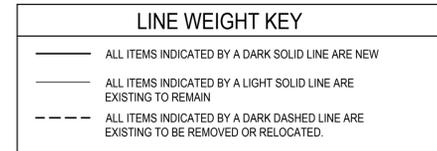
SHEET TITLE:
**LEVEL 3
 ELECTRICAL
 PLAN**

SHEET NUMBER:
E103

JSD PROJECT NO:

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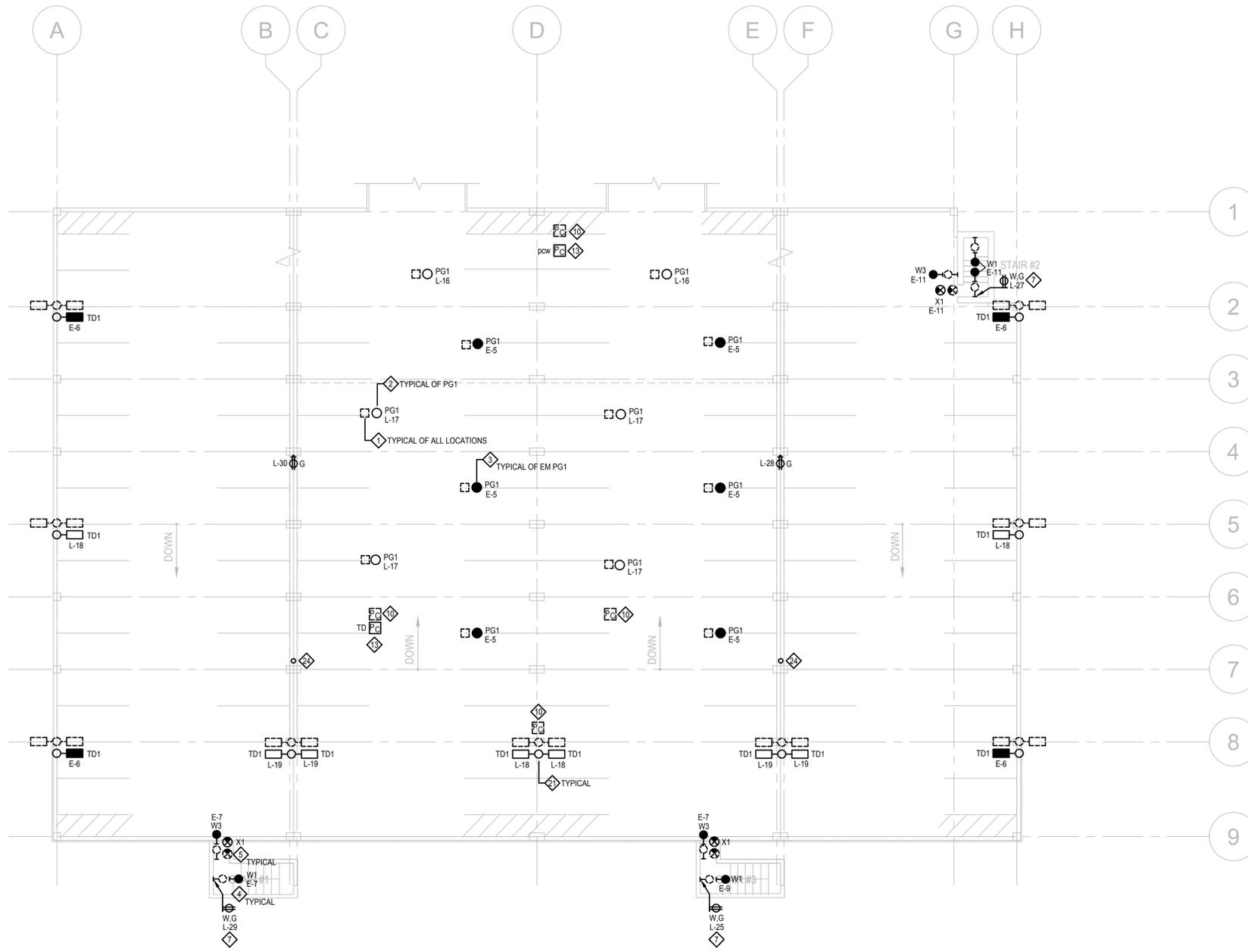


GENERAL NOTES:

- REFER TO SHEET E000 FOR GENERAL PROJECT NOTES.
- ALL RACEWAY AND CONDUCTORS FROM PANELS E AND L SHALL BE NEW.

KEYED ELECTRICAL NOTES:

- REMOVE EXISTING HID LUMINAIRE ALONG WITH ASSOCIATED BRANCH CIRCUIT AND EXPOSED RACEWAY. RACEWAY EMBEDDED WITHIN CONCRETE STRUCTURE TO BE ABANDONED IN PLACE.
- INSTALL NEW LED LUMINAIRE. CONNECT TO NEW BRANCH CIRCUIT INDICATED.
- NEW LED LUMINAIRE FED FROM EMERGENCY LIGHTING PANEL BOARD. BRANCH CIRCUIT CONDUCTORS SHALL BE ROUTED WITHIN NEW DEDICATED RACEWAY COMPLYING WITH NEC 700.
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- REMOVE EXISTING EXIT SIGN AND INSTALL NEW EXIT SIGN AS DIRECT REPLACEMENT.
- MOUNT RECEPTACLE AT 18" AFF IN STAIR WITH COVER (CAST IN-USE STYLE) AND PADLOCK HASP. CORE CONCRETE LANDINGS AS REQUIRED TO ROUTE RACEWAY VERTICALLY.
- REMOVE EXISTING PHOTOCELL DEVICE ALONG WITH ASSOCIATED WIRING AND EXPOSED RACEWAY.
- PHOTOCELL WITH INPUT TO CONTROLLABLE BREAKER SYSTEM.
- PROVIDE NEW LIGHT POLE COMPATIBLE WITH EXISTING POLE BASE BOLT PATTERN.
- PROVIDE 1.5" PVC RACEWAY FROM RAMP OFFICE ON LEVEL 1 TO CEILING OF LEVEL 4 FOR FUTURE CAMERA CABLING.



1 LEVEL 4 ELECTRICAL PLAN
 SCALE: 1/16" = 1'-0"
 24" 0 2 8 16 32



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PROJECT:
**2018 STATE STREET
 CAMPUS - FRANCES
 PARKING GARAGE**

ELECTRICAL
 MODIFICATIONS AND
 UPGRADES

PROJECT LOCATION:
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 MADISON, WI 53703**

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Design/Drawn: HEI
 Approved: HEI

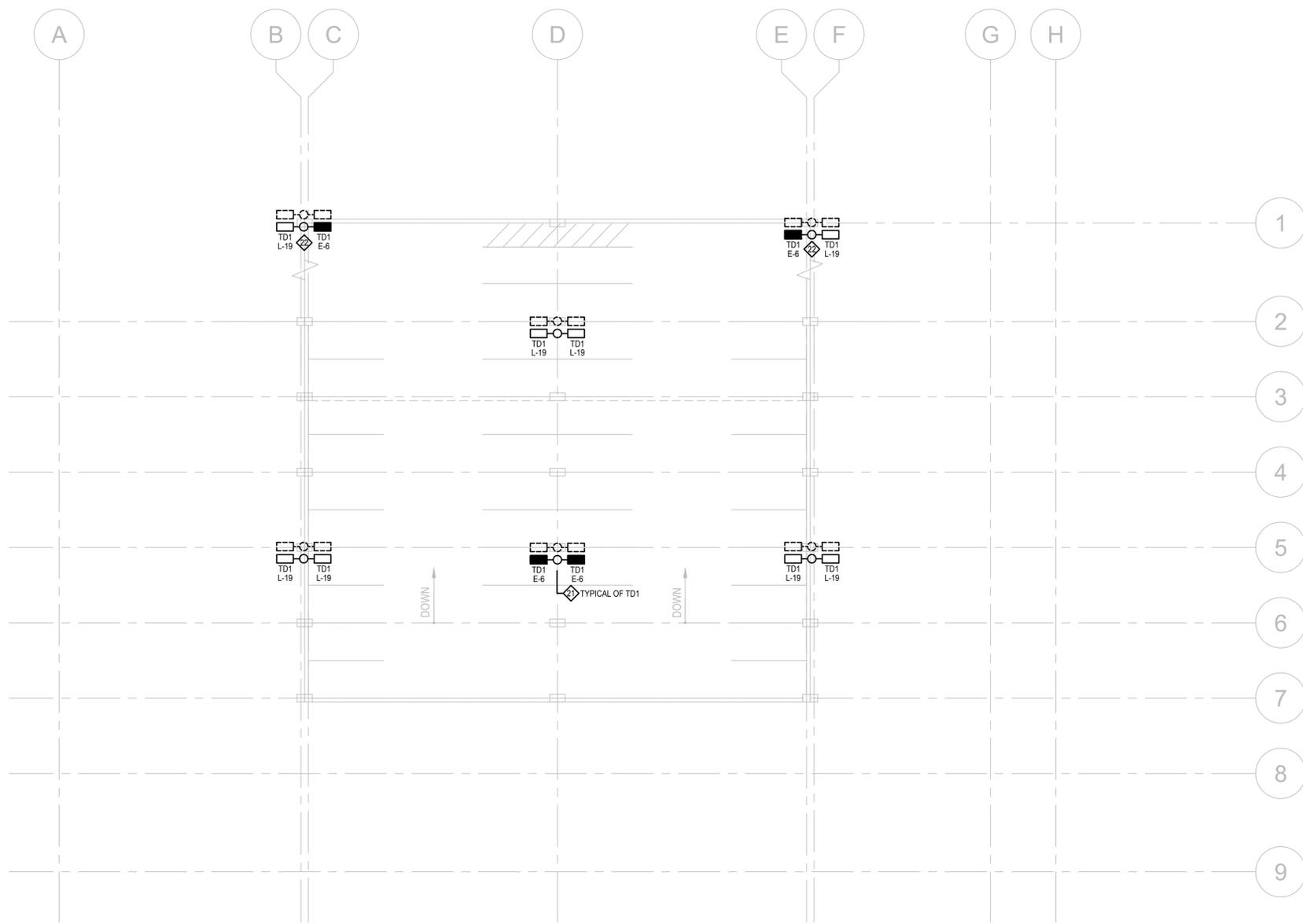
SHEET TITLE:
**LEVEL 4
 ELECTRICAL
 PLAN**

SHEET NUMBER:
E104

JSD PROJECT NO:

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1 LEVEL 5 ELECTRICAL PLAN
 SCALE: 1/16" = 1'-0"
 24' 0 2 8 16 32

LIGHT FIXTURE LEGEND

FIXTURE DESIGNATION - SEE SCHEDULE

PC1
 L-3 ← LIGHTING CIRCUIT
 pce ← CONTROL DESIGNATION (IF APPLICABLE)
 ● ← SHADED / FILLED LOCATION INDICATES EMERGENCY POWER

LINE WEIGHT KEY

ALL ITEMS INDICATED BY A DARK SOLID LINE ARE NEW

ALL ITEMS INDICATED BY A LIGHT SOLID LINE ARE EXISTING TO REMAIN

ALL ITEMS INDICATED BY A DARK DASHED LINE ARE EXISTING TO BE REMOVED OR RELOCATED.

GENERAL NOTES:

- REFER TO SHEET E000 FOR GENERAL PROJECT NOTES.
- ALL RACEWAY AND CONDUCTORS FROM PANELS E AND L SHALL BE NEW.

KEYED ELECTRICAL NOTES:

- PROVIDE NEW LIGHT POLE COMPATIBLE WITH EXISTING POLE BASE BOLT PATTERN.
- POLE LOCATION HAS EMERGENCY AND NORMAL POWER SOURCES. PROVIDE MULTIPLE RACEWAY TO POLE BASE. EMERGENCY POWER SHALL ENTER SIDE OF POLE BY WAY OF A SURFACE CONDUIT NPT FITTING INSTALLED 12" ABOVE POLE BASE.



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PROJECT:
**2018 STATE STREET
 CAMPUS - FRANCES
 PARKING GARAGE**

**ELECTRICAL
 MODIFICATIONS AND
 UPGRADES**

PROJECT LOCATION:
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 MADISON, WI 53703**

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Design/Drawn: HEI
 Approved: HEI

SHEET TITLE:
**LEVEL 5
 ELECTRICAL
 PLAN**

SHEET NUMBER:
E105

JSD PROJECT NO:

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PROVIDE SUPPLEMENTAL GALVANIZED CHANNEL STRUT SYSTEM AT OPENING TO SUPPORT CONDUIT. MODIFY FENCE SYSTEM AS REQUIRED.

GENERATOR AND ENCLOSURES:

CONCRETE BASE:

CONDUIT ROUTE OUT BOTTOM OF ALL ENCLOSURES AND UNDERGROUND TO EXTERIOR WALL OF RAMP.



6 GENERATOR RACEWAY DETAIL
NO SCALE

MOUNT FIXTURES WITH SURFACE RACEWAY ON NORTH FACADE. CENTER VERTICALLY ON CONCRETE PANEL. SEE FLOOR PLAN FOR QUANTITY AND LOCATIONS.



3 NORTH FACADE LIGHT FIXTURE MOUNTING ELEVATION
NO SCALE



REMOVE EXISTING LIGHT FIXTURE. BACK BOX CAST INTO MASONRY TO REMAIN.

MOUNT LIGHT TO STAINLESS COVER PLATE.

NEW 12GA STAINLESS STEEL COVER (16" X 16") OVER OPENING. SECURE TO BRICK WITH EMBED ANCHORS AND STAINLESS SCREWS TO ALLOW FOR REMOVAL. PROVIDE GASKET BETWEEN COVER AND BRICK.

7 EAST ENTRY FIXTURE REPLACEMENT DETAIL
NO SCALE



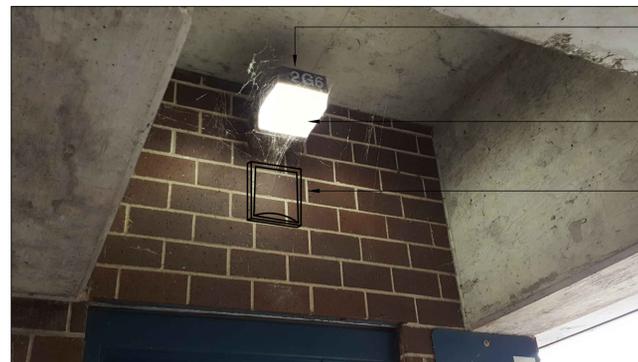
FIRST NUMBER REPRESENTS FLOOR LEVEL. L= LOWER LEVEL, 1= FIRST LEVEL, AND SO ON.

SECOND NUMBER REPRESENTS AISLE DESIGNATION.

THIRD NUMBER REPRESENTS FIXTURE NUMBER.

ALL FIXTURES ON PROJECT SHALL BE LABELED PER DETAIL. PROVIDE 2" HIGH WHITE LETTERING ON BLACK BACKGROUND. CONTRACTOR SHALL MOCK-UP A SINGLE LABELING LOCATION FOR OWNER APPROVAL PRIOR TO APPLYING LABELS TO ALL FIXTURES.

5 TYPICAL FIXTURE LABELING
NO SCALE



REMOVE EXISTING LIGHT FIXTURE.

INSTALL JUNCTION BOX AT EXISTING FIXTURE LOCATION AND EXTEND NEW PVC RACEWAY TO NEW FIXTURE LOCATION.

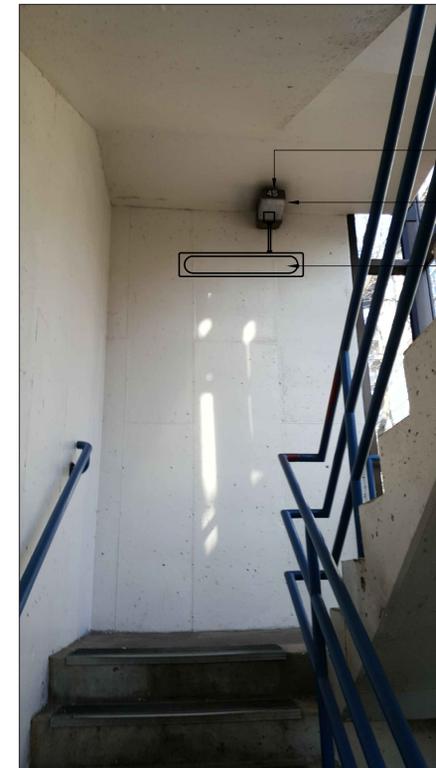
NEW WALL FIXTURE TYPE W2. SURFACE MOUNT TO BRICK WALL.

2 TYPICAL TYPE W2 STAIR LIGHT REPLACEMENT DETAIL
NO SCALE

EXISTING OPENING IN CONCRETE BEAMS ABOVE DRIVES ISLE FOR CONDUIT ROUTING.



4 TYPICAL BEAM OPENING AT LEVELS 2 - 4
NO SCALE



REMOVE EXISTING LIGHT FIXTURE.

INSTALL JUNCTION BOX AT EXISTING FIXTURE LOCATION AND EXTEND NEW PVC RACEWAY TO NEW FIXTURE LOCATION.

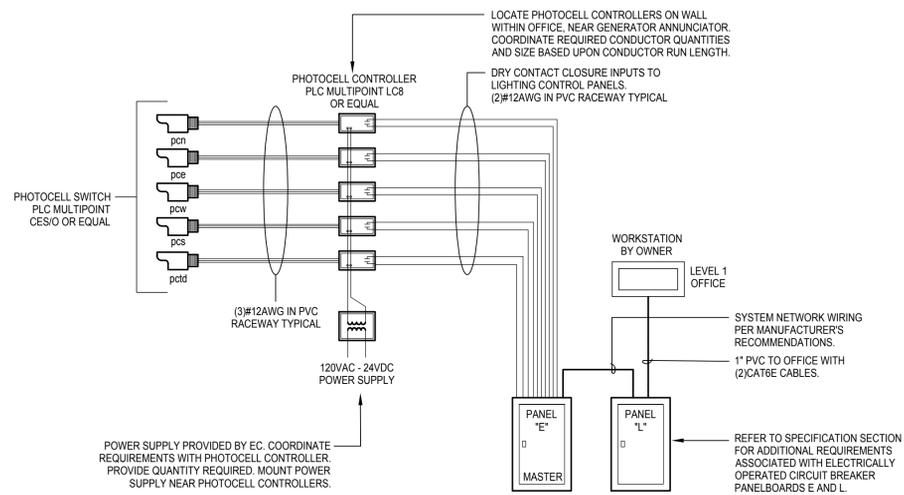
NEW WALL FIXTURE TYPE W1. SURFACE MOUNT TO CONCRETE WALL.

1 TYPICAL TYPE W1 STAIR LIGHT REPLACEMENT DETAIL
NO SCALE

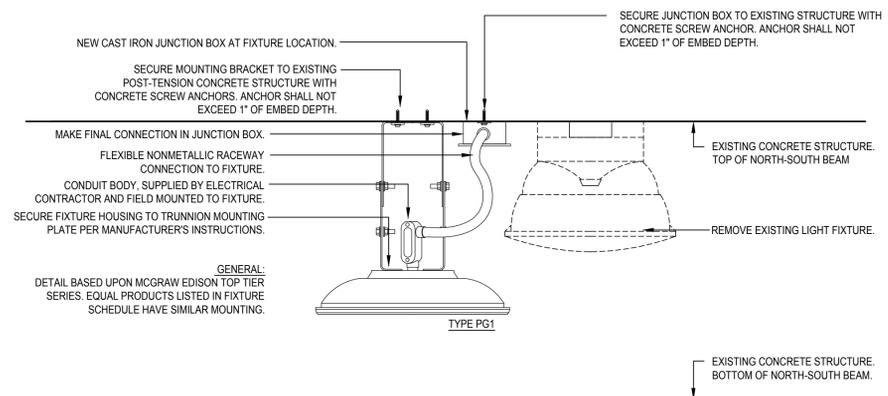


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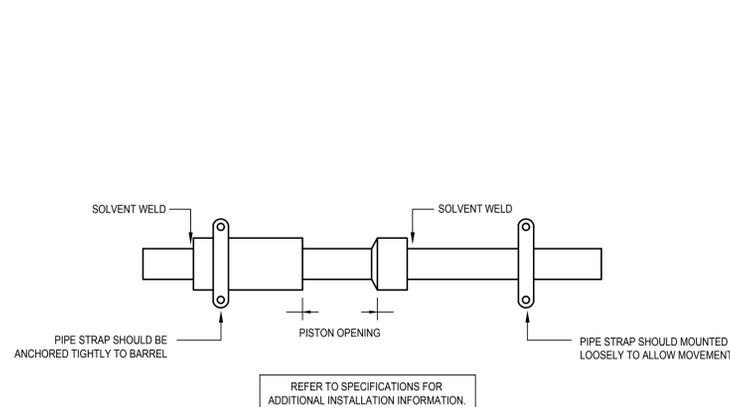
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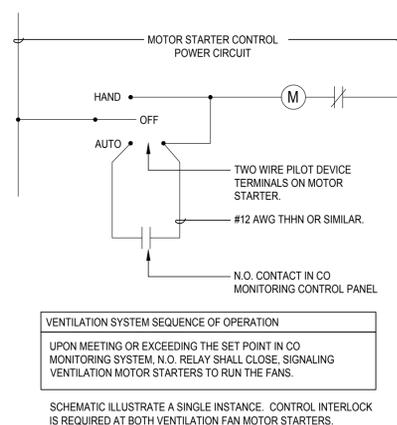
5 LIGHTING CONTROL SCHEMATIC
NO SCALE



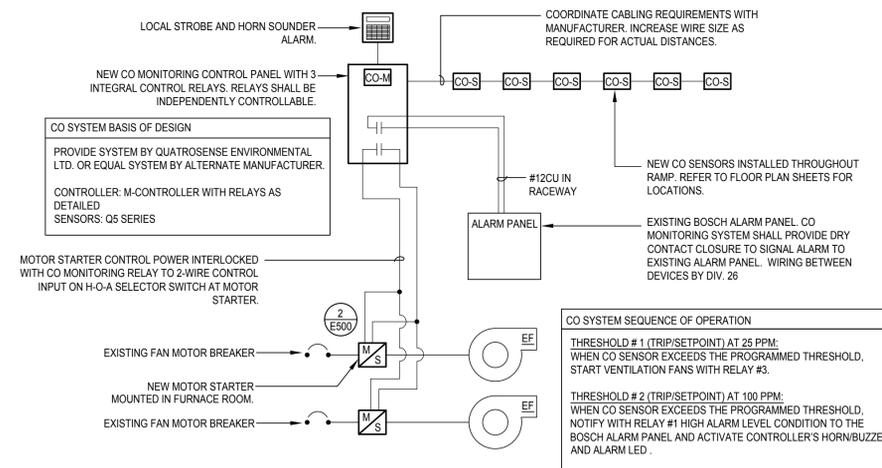
4 FIXTURE TYPE PG1 MOUNTING
NO SCALE



3 RACEWAY EXPANSION FITTING DETAIL
NO SCALE



2 VENTILATION FAN INTERLOCKING SCHEMATIC
NO SCALE



1 CO MONITORING SYSTEM SCHEMATIC
NO SCALE



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| LIGHTING FIXTURE SCHEDULE | | | | | | | | | | | | | | | | | | |
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| MARK | FIXTURE | | | WATTS | TYPE | SOURCE | | | BALLAST/DRIVER | | | | MOUNTING | | | MANUFACTURER | | REMARKS |
| | TYPE | DIFFUSER | | | | TEMP | CRI | QTY | TYPE | BF | INPUT WATTS | VOLTAGE | LOCATION | CONFIGURATION | SURFACE TYPE | NAME | MODEL NUMBER | |
| PG1 | LED PARKING GARAGE SURFACE MOUNT WIDE DISTRIBUTION | HIGH IMPACT HIGH PERFORMANCE ACRYLIC | 58 | LED | 4000K | 70 | 6,848 LUMENS | ELD | -- | 58 | 120 | CEILING | SURFACE | CONCRETE | COOPER EATON | TT.C4.LED.E1.WQ.TMB.GM | SUPPLY WITH TRUNNION MOUNT | |
| PG2 | LED PARKING GARAGE SURFACE MOUNT WIDE DISTRIBUTION | HIGH IMPACT HIGH PERFORMANCE ACRYLIC | 108 | LED | 4000K | 70 | 11,342 LUMENS | ELD | -- | 108 | 120 | CEILING | SURFACE | CONCRETE | COOPER EATON | TT.C6.LED.E1.WQ.GM | | |
| S1 | 48" LED LINEAR ENCLOSED WET LOCATION INDUSTRIAL | HIGH IMPACT HIGH PERFORMANCE ACRYLIC | 35 | LED | 4000K | 70 | 3,667 LUMENS | ELD | -- | 35 | 120 | CEILING | SURFACE | CONCRETE | LA LIGHTING | 3-WSE200.4K.4L.TP.WL.1DRDM.UNV.1.840 | | |
| TD1 | LED EXTERIOR AREA SITE POLE MOUNTED TYPE 4 DISTRIBUTION - 1 HEAD | CLEAR GLASS | 155 | LED | 4000K | 70 | 17,107 LUMENS PER HEAD | ELD | -- | 155 | 120 | TOP DECK | SURFACE | POLE | GARDCO | ECF-S.48L.1A.NW-G2.AR.4.120.MGY | SINGLE HEAD 20 FOOT ROUND NON-TAPERED ALUMINUM POLE VALMONT R2000050504S4 PAINTED TO MATCH FIXTURE OR EQUAL | |
| TD2 | LED EXTERIOR AREA SITE POLE MOUNTED TYPE 4 DISTRIBUTION - 2 HEAD | CLEAR GLASS | 155 | LED | 4000K | 70 | 17,107 LUMENS PER HEAD | ELD | -- | 310 | 120 | TOP DECK | SURFACE | POLE | GARDCO | ECF-S.48L.1A.NW-G2.AR.4.120.MGY | TWO HEADS AT 180 DEGREES 20 FOOT ROUND NON-TAPERED ALUMINUM POLE VALMONT R2000050504S4 PAINTED TO MATCH FIXTURE OR EQUAL | |
| W1 | SURFACE MOUNTED STAIRWELL FIXTURE WITH INTEGRAL PHOTOSENSOR - WALL MTD | HIGH IMPACT HIGH PERFORMANCE ACRYLIC | 27 | LED | 4000K | 70 | 2,541 LUMENS | ELD | -- | 27 | 120 | WALL | SURFACE | CONCRETE | LUMINAIRE LED | TLS9.1.25WHO.4000K.2B.120-277.OP.GRY.NO.DAMP.PC | | |
| W2 | LED WALLPACK | CLEAR GLASS | 21 | LED | 4000K | 70 | 2,565 LUMENS | ELD | -- | 21 | 120 | WALL | SURFACE | CONCRETE | RAB LIGHTING | SLIM18N | | |
| W3 | SURFACE MOUNTED LED WALLPACK WITH INTEGRAL PHOTOSENSOR - WALL MOUNTED | CLEAR GLASS | 21 | LED | 4000K | 70 | 2,565 LUMENS | ELD | -- | 21 | 120 | WALL | SURFACE | CONCRETE | RAB LIGHTING | SLIM18NPC | | |
| W4 | SURFACE MOUNTED LED WALLPACK WALL MOUNTED | CLEAR GLASS | 30 | LED | 4000K | 70 | 3,523 LUMENS | ELD | -- | 30 | 120 | WALL | SURFACE | CONCRETE | RAB LIGHTING | SLIM26N | | |
| X1 | LED EXIT SIGN SINGLE FACE WHITE HOUSING, RED LETTERS | IMPACT RESISTANT POLYCARBONATE | 2.7 | LED | -- | -- | -- | -- | -- | -- | 120 | WALL | SURFACE | CONCRETE | ISOLITE | MAX SERIES | | |

GENERAL NOTES:
A. REFER TO INTERIOR AND EXTERIOR LIGHTING SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING FIXTURE, BALLAST OR DRIVER REQUIREMENTS AND INSTALLATION REQUIREMENTS.
B. NOTED LUMEN QUANTITY IS DELIVERED LUMEN OUTPUT
C. NOTED DIMMING RANGE INDICATES MINIMUM PARAMETERS. LUMINAIRES WITH GREATER DIMMING RANGE ARE PERMITTED.
D. FIXTURES NOTED IN THIS SCHEDULE ARE TO ESTABLISH A BASIS OF DESIGN. PRODUCTS OTHER THAN THOSE LISTED IN THE SCHEDULE ARE PERMITTED SUBJECT TO MEETING THE REQUIREMENTS OF THE SCHEDULED FIXTURE'S QUALITY, PERFORMANCE, ENERGY, AESTHETICS, DIMENSIONS, ETC...

ABBREVIATIONS:
ELD - ELECTRONIC LED DRIVER OR POWER SUPPLY
EPS - ELECTRONIC PROGRAM START FLUORESCENT BALLAST
SD - DUAL CIRCUIT (SWITCH LEG) STEP DIMMING BALLAST OR DRIVER: 0/50/100
DIM - DIMMING
0-10V - ZERO TO TEN VOLT DC DIMMING FEATURE
FDB - FLUORESCENT DIMMING BALLAST
GWB - GYPSUM WALL BOARD, DRYWALL
ACT - ACOUSTICAL CEILING TILE IN SUSPENDED GRID SYSTEM, ACCESSIBLE
LMNS - LUMENS
BF - BALLAST FACTOR
ECO - LUTRON ECOSYSTEM COMPATIBLE BALLAST
CMU - CONCRETE MASONRY BLOCK
TBD - TO BE DETERMINED

NOTES:
1. NONE.



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PROJECT:
**2018 STATE STREET
CAMPUS - FRANCES
PARKING GARAGE**

**ELECTRICAL
MODIFICATIONS AND
UPGRADES**

PROJECT LOCATION:
**430 N. FRANCES STREET
MADISON, WI 53703**

PLAN MODIFICATIONS:

| # | Date | Description |
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Design/Drawn: HEI
Approved: HEI

SHEET TITLE:
**ELECTRICAL
SCHEDULES**

SHEET NUMBER:
E600

JSD PROJECT NO:

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| PANELBOARD NAME | VOLTAGE | | PHASE | | WIRE | | BUS SIZE | | MAIN | | AIC RATING | |
|--------------------------------------|------------|------------------|-----------------|---------|-----------|--------|----------|----------------------|----------------|--------|------------|-----------------------|
| L | 208 / 120 | | 3 4 | | 225 | | MLO | | 22kA | | | |
| LOCATION | FEED FROM | | SOURCE LOCATION | | # OF CKTS | | MOUNT | | NEMA ENCLOSURE | | | |
| SW EXTERIOR | PANEL 7 | | | | 42 | | SURFACE | | TYPE 3R | | | |
| LOAD | CB ACCESS. | POLE | BKR AMP | CKT# | VA | PHASE | VA | CKT# | BKR AMP | POLE | CB ACCESS. | LOAD |
| LEVEL L & 1 LIGHTING | | 1 | 20 | 1 | 810 | A | 225 | 2 | 20 | 1 | | LEVEL 1 LIGHTING |
| LEVEL 1 LIGHTING | | 1 | 20 | 3 | 360 | B | 135 | 4 | 20 | 1 | | LEVEL 1 LIGHTING |
| LEVEL 1 LIGHTING | | 1 | 20 | 5 | 180 | C | 180 | 6 | 20 | 1 | | LEVEL 1 & 2 LIGHTING |
| LEVEL 2 LIGHTING | | 1 | 20 | 7 | 270 | A | 180 | 8 | 20 | 1 | | LEVEL 2 LIGHTING |
| LEVEL 2 LIGHTING | | 1 | 20 | 9 | 135 | B | 135 | 10 | 20 | 1 | | LEVEL 2 LIGHTING |
| LEVEL 2 & 3 LIGHTING | | 1 | 20 | 11 | 180 | C | 270 | 12 | 20 | 1 | | LEVEL 3 LIGHTING |
| LEVEL 3 LIGHTING | | 1 | 20 | 13 | 180 | A | 135 | 14 | 20 | 1 | | LEVEL 3 LIGHTING |
| LEVEL 3 LIGHTING | | 1 | 20 | 15 | 135 | B | 180 | 16 | 20 | 1 | | LEVEL 3 & 4 LIGHTING |
| LEVEL 4 LIGHTING | | 1 | 20 | 17 | 180 | C | 620 | 18 | 20 | 1 | | LEVEL 4 LIGHTING |
| LEVEL 4 & 5 LIGHTING | | 1 | 20 | 19 | 1,860 | A | 360 | 20 | 20 | 1 | | HAWTHORNE LIGHTING A |
| SPARE | | 1 | 20 | 21 | 0 | B | 360 | 22 | 20 | 1 | | HAWTHORNE LIGHTING B |
| SPARE | | 1 | 20 | 23 | 0 | C | 104 | 24 | 20 | 1 | | SOUTH FAÇADE LIGHTING |
| RECEPTS - STAIR #3 | | 1 | 20 | 25 | 900 | A | 104 | 26 | 20 | 1 | | NORTH FAÇADE LIGHTING |
| RECEPTS - STAIR #2 | | 1 | 20 | 27 | 900 | B | 900 | 28 | 20 | 1 | | RAMP RECEPTS - NORTH |
| RECEPTS - STAIR #1 | | 1 | 20 | 29 | 900 | C | 900 | 30 | 20 | 1 | | RAMP RECEPTS - SOUTH |
| SPARE | | 1 | 20 | 31 | 0 | A | 0 | 32 | 20 | 1 | | SPARE |
| SPARE | | 1 | 20 | 33 | 0 | B | 0 | 34 | 20 | 1 | | SPARE |
| SPARE | | 1 | 20 | 35 | 0 | C | 0 | 36 | 20 | 1 | | SPARE |
| ATS-EM / PANEL 3 | | 3 | 100 | 37 | 2,740 | A | 0 | 38 | 20 | 1 | | SPARE |
| -- | | | | 39 | 2,150 | B | 0 | 40 | 20 | 1 | | SPARE |
| -- | | | | 41 | 3,960 | C | 500 | 42 | 20 | 1 | | ENCLOSURE HEATER |
| PANEL OPTIONS: | | RECEPT-VA @ | | per NEC | | 2,700 | | TOTAL CALC LOAD VA = | | 21,128 | | |
| | | LIGHTS STD-VA @ | | 100% | | 14,428 | | ADJUSTED VA = | | 21,128 | | |
| | | LIGHTS HOSP-VA @ | | per NEC | | - | | DEMAND AMPS = | | 59 | | |
| | | LIGHTS WARE-VA @ | | per NEC | | - | | ADJUSTED EXIST. KW = | | 0 | | |
| PANEL NOTES: | | MOTOR-VA @ | | 100% | | - | | LRG MOTOR LOAD VA = | | | | |
| POWERLINK CONTROLLABLE BREAKER PANEL | | KITCHEN-VA @ | | 100% | | - | | # OF ELEV(S) = | | | | |
| | | X-RAY-VA @ | | per NEC | | - | | | | | | |
| | | HEATING EQ-VA @ | | 100% | | - | | # OF KITCHEN EQUIP = | | | | |
| | | COOLING EQ-VA @ | | 100% | | - | | SUB-FEED PANEL(S) = | | | | |
| | | ELEVATOR-VA @ | | 100% | | - | | 25% GROWTH FACTOR = | | 15 | | |
| | | MISC-VA @ | | 100% | | 4,000 | | TOTAL DESIGN AMPS | | 60 | | |

| PANELBOARD NAME | VOLTAGE | | PHASE | | WIRE | | BUS SIZE | | MAIN | | AIC RATING | |
|--------------------------------------|---------------|------------------|-----------------|---------|-----------|-------|----------|----------------------|----------------|--------|------------|-------------------------|
| E | 208 / 120 | | 3 4 | | 225 | | MCB | | 22kA | | | |
| LOCATION | FEED FROM | | SOURCE LOCATION | | # OF CKTS | | MOUNT | | NEMA ENCLOSURE | | | |
| SW EXTERIOR | GEN / PANEL L | | | | 30 | | SURFACE | | TYPE 3R | | | |
| LOAD | CB ACCESS. | POLE | BKR AMP | CKT# | VA | PHASE | VA | CKT# | BKR AMP | POLE | CB ACCESS. | LOAD |
| LEVEL L LIGHTING | | 1 | 20 | 1 | 540 | A | 450 | 2 | 20 | 1 | | LEVEL 1 LIGHTING |
| LEVEL 2 LIGHTING | | 1 | 20 | 3 | 450 | B | 450 | 4 | 20 | 1 | | LEVEL 3 LIGHTING |
| LEVEL 4 LIGHTING | | 1 | 20 | 5 | 890 | C | 620 | 6 | 20 | 1 | | LEVEL 5 LIGHTING |
| STAIR #1 | | 1 | 20 | 7 | 350 | A | 400 | 8 | 20 | 1 | | HAWTHORNE WALL LIGHTING |
| STAIR #3 | | 1 | 20 | 9 | 350 | B | 400 | 10 | 20 | 1 | | EAST FAÇADE LIGHTING |
| STAIR #2 | | 1 | 20 | 11 | 350 | C | 100 | 12 | 20 | 1 | | NORTH FAÇADE LIGHTING |
| CO MONITORING HEAD END | | 1 | 20 | 13 | 500 | A | 0 | 14 | 20 | 1 | | SPARE |
| SPARE | | 1 | 20 | 15 | 0 | B | 0 | 16 | 20 | 1 | | SPARE |
| SPARE | | 1 | 20 | 17 | 0 | C | 0 | 18 | 20 | 1 | | SPARE |
| SPARE | | 1 | 20 | 19 | 0 | A | 0 | 20 | 20 | 1 | | SPARE |
| SPARE | | 1 | 20 | 21 | 0 | B | 0 | 22 | 20 | 1 | | SPARE |
| SPARE | | 1 | 20 | 23 | 0 | C | 0 | 24 | 20 | 1 | | SPARE |
| SPARE | | 1 | 20 | 25 | 0 | A | 500 | 26 | 20 | 1 | | GEN BATT HEATER |
| SPARE | | 1 | 20 | 27 | 0 | B | 500 | 28 | 20 | 1 | | GEN BATT CHARGER |
| ENCLOSURE HEATER | | 1 | 20 | 29 | 500 | C | 1,500 | 30 | 20 | 1 | | GEN COOLANT HEATER |
| PANEL OPTIONS: | | RECEPT-VA @ | | per NEC | | - | | TOTAL CALC LOAD VA = | | 8,850 | | |
| | | LIGHTS STD-VA @ | | 125% | | 6,688 | | ADJUSTED VA = | | 10,188 | | |
| | | LIGHTS HOSP-VA @ | | per NEC | | - | | DEMAND AMPS = | | 28 | | |
| | | LIGHTS WARE-VA @ | | per NEC | | - | | ADJUSTED EXIST. KW = | | 0 | | |
| PANEL NOTES: | | MOTOR-VA @ | | 100% | | - | | LRG MOTOR LOAD VA = | | | | |
| POWERLINK CONTROLLABLE BREAKER PANEL | | KITCHEN-VA @ | | 100% | | - | | # OF ELEV(S) = | | | | |
| | | X-RAY-VA @ | | per NEC | | - | | | | | | |
| | | HEATING EQ-VA @ | | 100% | | - | | # OF KITCHEN EQUIP = | | | | |
| | | COOLING EQ-VA @ | | 100% | | - | | SUB-FEED PANEL(S) = | | | | |
| | | ELEVATOR-VA @ | | 100% | | - | | 25% GROWTH FACTOR = | | 7 | | |
| | | MISC-VA @ | | 100% | | 3,500 | | TOTAL DESIGN AMPS | | 30 | | |



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PROJECT:

2018 STATE STREET
CAMPUS - FRANCES
PARKING GARAGE

ELECTRICAL
MODIFICATIONS AND
UPGRADES

PROJECT LOCATION:

430 N. FRANCES STREET
MADISON, WI 53703

PLAN MODIFICATIONS:

| # | Date: | Description: |
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Design/Drawn: HEI
Approved: HEI

SHEET TITLE:
ELECTRICAL
SCHEDULES

SHEET NUMBER:

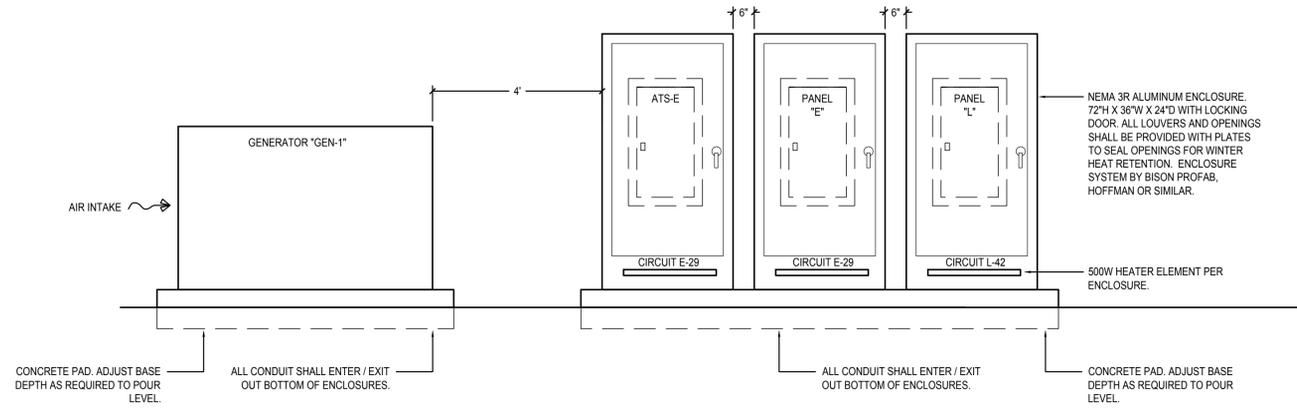
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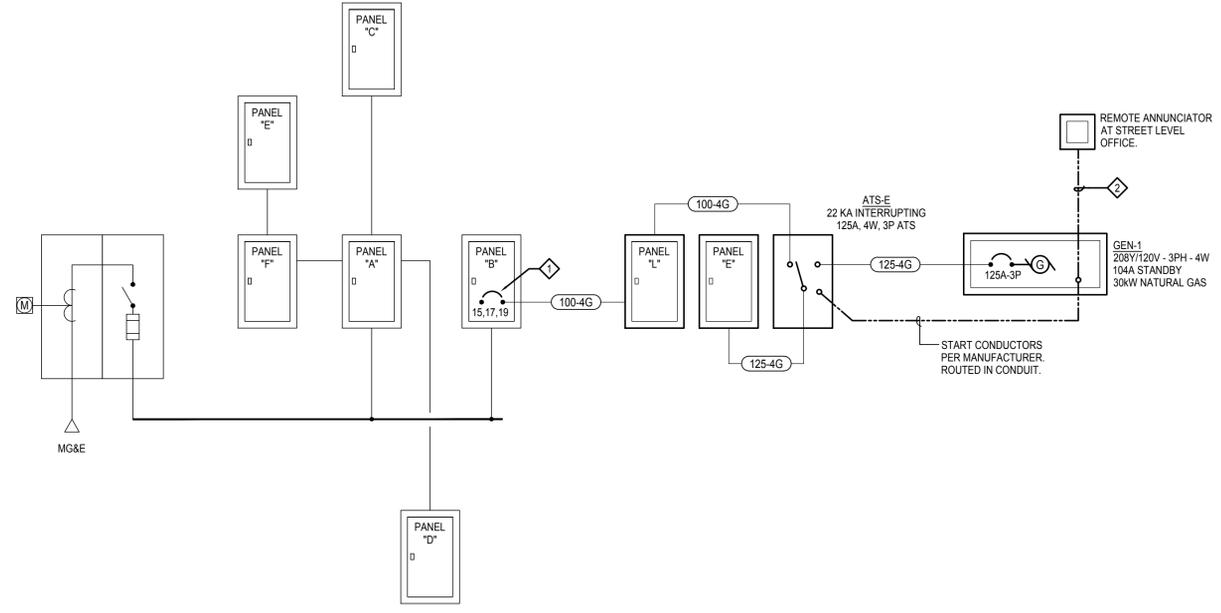
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GENERAL NOTES:
 1. REFER TO SHEET E000 FOR GENERAL PROJECT NOTES.

KEYED NEW WORK NOTES:
 ◊ REMOVE EXISTING 20A-1P BREAKERS IN SPACES 15 AND 17. PROVIDE NEW 100A, 3 POLE BREAKER IN EXISTING I-T-E PANEL. MOUNT IN SPACES 15,17,19.
 ◊ PROVIDE CABLING (PER MANUFACTURER'S REQUIREMENTS) BETWEEN GENERATOR AND REMOTE ANNUNCIATOR LOCATION. ROUTE IN 1/2" RACEWAY.



2 GENERATOR DISTRIBUTION DETAIL
 SCALE: 1/2" = 1'-0"
 12' 0' 1' 5'



1 ELECTRICAL RISER DIAGRAM
 NO SCALE

| FEEDER SCHEDULE (600 V) | | | | |
|-------------------------|------------------------|-----|--------------|---------------|
| FEEDER AMPACITY | CONDUCTOR SIZE (kcmil) | | CONDUIT SIZE | |
| | Ø & N | GRD | 3Ø & GRD. | 3Ø & N & GRD. |
| 20 | #12 | #12 | 3/4" | 3/4" |
| 30 | #10 | #10 | 3/4" | 3/4" |
| 40 | #8 | #10 | 3/4" | 1" |
| 50 | #6 | #10 | 1" | 1" |
| 70 | #4 | #8 | 1-1/4" | 1-1/4" |
| 80 | #3 | #8 | 1-1/4" | 1-1/4" |
| 100 | #1 | #8 | 1-1/2" | 2" |
| 110 | #2 | #6 | 1-1/4" | 1-1/2" |
| 125 | #1 | #6 | 1-1/2" | 2" |
| 150 | #1/0 | #6 | 1-1/2" | 2" |
| 175 | #2/0 | #6 | 2" | 2" |
| 200 | #3/0 | #6 | 2" | 2-1/2" |
| 225 | #4/0 | #4 | 2" | 2-1/2" |

GENERAL NOTES:

- THE ABOVE FEEDER SCHEDULE IS A SCHEDULE OF TYPICAL FEEDERS AND SOME SIZES MAY NOT BE UTILIZED.
- ALL CONDUCTOR AMPACITIES ARE BASED ON TABLE 310-16 OF THE NEC FOR COPPER CONDUCTOR TYPE THW/THWN.
- FEEDER SIZES SHOWN ON THE RISER DIAGRAM INDICATE FEEDER AMPACITIES AND DO NOT NECESSARILY CORRESPOND TO CIRCUIT BREAKER AMPACITIES. CERTAIN FEEDERS MAY BE SIZED FOR THE DERATION FACTORS REQUIRED BY CODE AND/OR ARE OVERSIZED FOR VOLTAGE DROP.
- WHERE MULTIPLE CONDUITS ARE INDICATED FOR A SINGLE FEEDER EACH CONDUIT SHALL CONTAIN AN AØ, BØ, CØ, GROUND CONDUCTOR, AND NEUTRAL CONDUCTOR.

200-4G FEEDER DESIGNATION

SYSTEM DESCRIPTION (3G) 3Ø, 3W + GRD (4G) 3Ø, 4W + GRD

CONDUCTOR AMPACITY (SEE FEEDER SCHEDULE)



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PROJECT:
**2018 STATE STREET
 CAMPUS - FRANCES
 PARKING GARAGE**

**ELECTRICAL
 MODIFICATIONS AND
 UPGRADES**

PROJECT LOCATION:
**430 N. FRANCES STREET
 MADISON, WI 53703**

PLAN MODIFICATIONS:

| # | Date: | Description: |
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Design/Drawn: HEI
 Approved: HEI

SHEET TITLE:
**ELECTRICAL
 RISER DIAGRAM**

SHEET NUMBER:
E800

JSD PROJECT NO:

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