### LIGHT FIXTURE SCHEDULE

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Switch, single pole</td>
<td>D, S</td>
</tr>
<tr>
<td>B</td>
<td>Switch, triple pole</td>
<td>D, S</td>
</tr>
<tr>
<td>C</td>
<td>Dimmer switch, single pole</td>
<td>D, S</td>
</tr>
<tr>
<td>D</td>
<td>Dimmer switch, triple pole</td>
<td>D, S</td>
</tr>
<tr>
<td>E</td>
<td>Emergency light, black, CLEAR, interior</td>
<td>E</td>
</tr>
<tr>
<td>F</td>
<td>Exit sign, single face, chevrons as indicated</td>
<td>E</td>
</tr>
<tr>
<td>G</td>
<td>Exit sign, dual face, chevrons as indicated</td>
<td>E</td>
</tr>
<tr>
<td>H</td>
<td>Exit sign, single face, chevrons as indicated</td>
<td>E</td>
</tr>
<tr>
<td>I</td>
<td>Junction box</td>
<td>E</td>
</tr>
<tr>
<td>J</td>
<td>Flush floor duplex receptacle</td>
<td>E</td>
</tr>
<tr>
<td>K</td>
<td>Duplex receptacle - surface mounted</td>
<td>E</td>
</tr>
<tr>
<td>L</td>
<td>Duplex receptacle - recessed</td>
<td>E</td>
</tr>
<tr>
<td>M</td>
<td>Duplex receptacle, isolated ground</td>
<td>E</td>
</tr>
<tr>
<td>N</td>
<td>Duplex receptacle, half-switched</td>
<td>E</td>
</tr>
<tr>
<td>O</td>
<td>Duplex receptacle, GFCI</td>
<td>E</td>
</tr>
<tr>
<td>P</td>
<td>Double duplex receptacle</td>
<td>E</td>
</tr>
</tbody>
</table>

### TELECOM SYMBOLS LIST

- **RACK NAME**: "XX-XX-XX-XX"
- **DATE**: 01/24/2020
- **LOCATION**: "XX-XX-XX-XX"
- **CONTRACTOR**: "XX-XX-XX-XX"

### ELECTRICAL SYMBOLS LIST

- **SERVICE ENTRY**: "XX-XX-XX-XX"
- **GROUND SYMBOL**: "XX-XX-XX-XX"
- **GROUND SYMBOL**: "XX-XX-XX-XX"
Section 1: Project Information
- Project Name: Watertown Lab
- Project Type: Crime Lab
- Construction Site: Dane County Security Center
- Designer/Contractor:

Section 2: Interior Lighting and Power Calculation

<table>
<thead>
<tr>
<th>Fixture</th>
<th>Lumen(s)</th>
<th>Watt(s)</th>
<th>Input Power</th>
<th>Total Power</th>
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<tbody>
<tr>
<td>F1</td>
<td>3000</td>
<td>60</td>
<td>0.015</td>
<td>0.030</td>
</tr>
<tr>
<td>F2</td>
<td>3500</td>
<td>70</td>
<td>0.021</td>
<td>0.042</td>
</tr>
<tr>
<td>F3</td>
<td>4000</td>
<td>80</td>
<td>0.028</td>
<td>0.056</td>
</tr>
<tr>
<td>F4</td>
<td>4500</td>
<td>90</td>
<td>0.035</td>
<td>0.068</td>
</tr>
<tr>
<td>F5</td>
<td>5000</td>
<td>100</td>
<td>0.042</td>
<td>0.084</td>
</tr>
<tr>
<td>F6</td>
<td>5500</td>
<td>110</td>
<td>0.049</td>
<td>0.098</td>
</tr>
</tbody>
</table>

Section 3: Interior Lighting Fixtures Schedule

<table>
<thead>
<tr>
<th>Panel</th>
<th>Description</th>
<th>Room or Area</th>
<th>Total Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel A</td>
<td>Main Lobby</td>
<td>Main Lobby</td>
<td>0.27</td>
</tr>
<tr>
<td>Panel B</td>
<td>Conference Room</td>
<td>Conference Room</td>
<td>0.15</td>
</tr>
<tr>
<td>Panel C</td>
<td>Meeting Room</td>
<td>Meeting Room</td>
<td>0.10</td>
</tr>
<tr>
<td>Panel D</td>
<td>Break Room</td>
<td>Break Room</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Section 4: Requirements Checklist

- Lighting: 3. The provision must include a means for the installation of electrical wiring.
- Controls, Switches, and Wiring: 2. The system must be designed to ensure that the electrical wiring is installed in accordance with the National Electrical Code (NEC).

Section 5: Compliance Statement

[Signature] [Date]

[Compliance Certificate]

[Compliance: Yes/No]
PART 1 - GENERAL
A. GENERAL
1. OWNER expects all trade specifications, trade standards, and applicable local and national codes to be adhered to by the Contractor as a minimum standard of workmanship for all aspects of the electrical installation.

B. WORK AND CABLES
1. All work shall be done in a professional and workmanlike manner. Workmen shall be fully skilled in their respective trades.

C. MACHINERY, EQUIPMENT, AND MATERIALS
1. All materials shall be of the best quality. The Contractor shall be responsible for the proper handling and storage of all materials, equipment, and machinery.

D. PLANNING AND SCHEDULING
1. The Contractor shall prepare a work schedule and submit it to the Architect for review and approval.

E. PERMITTING
1. The Contractor shall obtain all necessary permits from the appropriate authorities prior to commencing any work.

F. INSTALLATION
1. The Contractor shall install all work in accordance with the plans and specifications.

G. TESTING AND ACCEPTANCE
1. The Contractor shall test and accept all work in accordance with the plans and specifications.

PART 2 - PRODUCTS
A. GENERAL
1. The Contractor shall provide complete electrical systems for the project as outlined in the contract documents.

B. WIRE AND CABLES
1. All wire and cable shall be of the best quality and shall comply with all applicable codes and standards.

C. MACHINERY, EQUIPMENT, AND MATERIALS
1. All machinery, equipment, and materials shall be of the best quality and shall comply with all applicable codes and standards.

D. PLANNING AND SCHEDULING
1. The Contractor shall plan and schedule all work in accordance with the contract documents.

E. PERMITTING
1. The Contractor shall obtain all necessary permits from the appropriate authorities prior to commencing any work.

F. INSTALLATION
1. The Contractor shall install all work in accordance with the plans and specifications.

G. TESTING AND ACCEPTANCE
1. The Contractor shall test and accept all work in accordance with the plans and specifications.

PART 3 - EXECUTION
A. GENERAL
1. The Contractor shall ensure that all work is completed in a professional and workmanlike manner. Workmen shall be fully skilled in their respective trades.

B. WORK AND CABLES
1. All work shall be done in a professional and workmanlike manner. Workmen shall be fully skilled in their respective trades.

C. MACHINERY, EQUIPMENT, AND MATERIALS
1. All materials shall be of the best quality. The Contractor shall be responsible for the proper handling and storage of all materials, equipment, and machinery.

D. PLANNING AND SCHEDULING
1. The Contractor shall prepare a work schedule and submit it to the Architect for review and approval.

E. PERMITTING
1. The Contractor shall obtain all necessary permits from the appropriate authorities prior to commencing any work.

F. INSTALLATION
1. The Contractor shall install all work in accordance with the plans and specifications.

G. TESTING AND ACCEPTANCE
1. The Contractor shall test and accept all work in accordance with the plans and specifications.

PART 4 - DESIGN-BUILD FIRE ALARM AND DETECTION SYSTEM PERFORMANCE CRITERIA
A. GENERAL
1. The Contractor shall provide complete electrical systems for the project as outlined in the contract documents.

B. SYSTEM DESCRIPTION
1. The system shall consist of fire alarm and detection devices, control panels, and communication links.

C. OPERATIONAL DESCRIPTION
1. The system shall be designed and installed in accordance with all applicable codes and standards.

D. PERFORMANCE CRITERIA
1. The system shall meet all performance criteria as outlined in the contract documents.

E. ACCEPTABILITY CRITERIA
1. The system shall be acceptable to the owner and the Architect.

F. SUBMITTALS
1. The Contractor shall submit all necessary documents to the Architect for review and approval.

G. INSTALLATION
1. The Contractor shall install all work in accordance with the plans and specifications.

H. TESTING AND ACCEPTANCE
1. The Contractor shall test and accept all work in accordance with the plans and specifications.

I. MAINTENANCE
1. The Contractor shall provide maintenance for the system as outlined in the contract documents.

J. RECORDS AND INSTRUCTIONS
1. The Contractor shall provide all necessary records and instructions to the owner.

K. COORDINATION
1. The Contractor shall coordinate with all other trades and disciplines as outlined in the contract documents.

L. COMPLIANCE
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

M. COMPLIANCE WITH NFPA 72, NFPA 101, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION FOR SUPPLIED INCLUDING ALL RACEWAYS, BOXES, WIRING, WIRING DEVICES, ETC.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

N. APPROPRIATE AND ALIGNED WITH RECOGNIZED TESTING LABORATORIES (NRTL).
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

O. CONTRACTOR SHALL PROVIDE SUBMITTALS.
1. The Contractor shall submit all necessary documents to the Architect for review and approval.

P. REGULATIONS INCLUDING AMENDMENTS.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

Q. CONTRACTOR SHALL PROVIDE NEW UPDATED TYPE WRITTEN PANEL DIRECTORIES FOR EXISTING AND \"SPARE FUSES\". INSTALL IN LOCATIONS AS DIRECTED BY OWNER.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

R. FACTORY-PROVIDED DISCONNECT SWITCHES ARE UTILIZED, THEY SHALL BE RATED TO EXCEED THE \"SPARE FUSES\". INSTALL IN LOCATIONS AS DIRECTED BY OWNER.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

S. PROVIDE EVIDENCE OF CONNECTION TO FIXTURE SHALL BE MADE WITH A FLEXIBLE U.L. APPROVED ASSEMBLY.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

T. VERIFY EXACT LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

U. PROVIDE EVIDENCE OF CONNECTION TO FIXTURE SHALL BE MADE WITH A FLEXIBLE U.L. APPROVED ASSEMBLY.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

V. PROVIDE EVIDENCE OF CONNECTION TO FIXTURE SHALL BE MADE WITH A FLEXIBLE U.L. APPROVED ASSEMBLY.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

W. PROVIDE EVIDENCE OF CONNECTION TO FIXTURE SHALL BE MADE WITH A FLEXIBLE U.L. APPROVED ASSEMBLY.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

X. PROVIDE EVIDENCE OF CONNECTION TO FIXTURE SHALL BE MADE WITH A FLEXIBLE U.L. APPROVED ASSEMBLY.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

Y. PROVIDE EVIDENCE OF CONNECTION TO FIXTURE SHALL BE MADE WITH A FLEXIBLE U.L. APPROVED ASSEMBLY.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.

Z. PROVIDE EVIDENCE OF CONNECTION TO FIXTURE SHALL BE MADE WITH A FLEXIBLE U.L. APPROVED ASSEMBLY.
1. The Contractor shall ensure that all work is in compliance with all applicable codes and standards.
**MAIN SERVICE SWITCHBOARD 'MDB'**

- 800A - 480/277V, 3-PHASE, 4-WIRE, 65K AIC
- 60/3
- 80/3
- 100/3
- 125/3
- 400/3
- NEUTRAL
- GROUND

**PANEL 'H1'**

- 30/3
- 29
- RTU

**PANEL 'EM'**

- 225/3
- PANEL

**PANEL 'L1'**

- 225/3
- PANEL

**PANEL 'L2'**

- 112.5 KVA
- 480V-120/208V, 3P, 4W

**MAIN SWITCHBOARD 'SBH'**

- 400A, 480/277, 3 PHASE, 4 WIRE, 35K AIC

**SWITCHBOARD 'SBL'**

- 400A, 208/120, 3 PHASE, 4 WIRE, 10K AIC

**T-SBL**

- 112.5 KVA
- 480V-120/208V, 3P, 4W

**DIESEL GENERATOR 'EG-S'**

- OPTIONAL STANDBY
- 208/120V, 3P, 4W
- 40KW(50 KVA), 139AMP, TIER 2 STANDBY

**WORK NOTES:**

1. PROVIDE NEW BREAKER IN EXISTING SWITCHBOARD. COORDINATE WITH EXISTING GEAR MANUFACTURER AND AIC RATING.
2. PROVIDE (1) 1” C WITH REQUIRED CONTROL WIRING FOR ATS STATUS, GENERATOR RUN, REMOTE ANNUNCIATOR, SHUNT-TRIP, ETC. AS RECOMMENDED BY MANUFACTURER.
3. PROVIDE, INSTALL, TEST AND COMMISSION A NEW 100AMP / 4 POLE, 600 VOLT RATED AUTOMATIC TRANSFER SWITCH, ADJUSTABLE TIME-DELAY, OPEN TRANSITION, CONTRACTOR TYPE, TRANSFER SWITCH SHALL BE PROVIDED BY SAME MANUFACTURER AS GENERATOR.
4. GENERATOR SHALL BE DERATED FOR ALTITUDE. ENCLOSURE SHALL BE RATED FOR 75 DBA AT 25’, THERMALLY INSULATED, AND ENHANCED COOLING SYSTEM RATED FOR 50 DEGREES C. PROVIDE DOUBLE WALL SUB-BASE FUEL TANK SIZED FOR 12 HOUR RUNTIME AT FULL LOAD.
### PANEL SCHEDULE

<table>
<thead>
<tr>
<th>PANEL</th>
<th>VOLTAGE</th>
<th>PHASE</th>
<th>CURRENT</th>
<th>DUTY CYCLE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNL 1</td>
<td>480V</td>
<td>3</td>
<td></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>PNL 2</td>
<td>480V</td>
<td>3</td>
<td></td>
<td>100%</td>
<td></td>
</tr>
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### SWITCHBOARD "MB" ELECTRICAL LOAD SUMMARY

<table>
<thead>
<tr>
<th>EQUIPMENT TYPE</th>
<th>VOLTAGE</th>
<th>PHASE</th>
<th>CURRENT</th>
<th>DUTY CYCLE</th>
<th>HEATING</th>
<th>LIGHTING</th>
<th>AIR CONDITIONING</th>
<th>WATER HEATING</th>
<th>TOTAL LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PANEL CBR</td>
<td>480V</td>
<td>3</td>
<td></td>
<td>100%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PANEL L1</td>
<td>480V</td>
<td>3</td>
<td></td>
<td>100%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PANEL L2</td>
<td>480V</td>
<td>3</td>
<td></td>
<td>100%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>480V</td>
<td>3</td>
<td></td>
<td>100%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>

### NOTES

- **E0.3**
- **01/24/2020**
- **01/24/2020**
- **01/24/2020**
- **G2CE.COM**
ELECTRICAL DIAGRAMS

DIAGRAM - POLE MOUNTED FIXTURE

DIAGRAM - RECEPTACLE HEIGHT

DIAGRAM - TBAR MOUNTING

DIAGRAM - LIGHTING CONTACOR

DIAGRAM - GROUNDING DIAGRAM
WORK NOTES:

1. ROUTE NEW FEEDER FROM NEW ELECTRICAL ROOM TO EXISTING MAIN ELECTRICAL ROOM. REFER TO SINGLE LINE FOR ADDITIONAL INFORMATION. PROVIDE TRAFFIC RATED PULL BOX AS REQUIRED.

2. PROVIDE POWER TO MOTORIZED GATE. COORDINATE CONNECTION REQUIREMENTS AND LOCATION WITH OWNER PRIOR TO ROUGH IN.

3. PROVIDE RECEPTACLE FOR VEHICLE BLOCK HEATER.

4. CONNECT (3) #8 + (1) #10 GROUND IN 1"C TO GENERATOR AUXILIARY PANEL. COORDINATE EXACT REQUIREMENTS WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH IN.

5. ROUTE TIME CLOCK TO IT.

6. ROUTE FEEDER FROM ELECTRICAL ROOM FROM THE EXTERIOR, COORDINATE CONNECTION TO 'MDB' WITH OWNER TO MINIMIZE DOWNTIME.

7. ROUTE #8 C/W CONTROL WIRING FROM CONTROL PANEL BACK TO IT ROOM 113. COORDINATE CONNECTION REQUIREMENTS AND LOCATION WITH OWNER PRIOR TO ROUGH IN.
WORK NOTES:

1. PROVIDE RECEPTACLE TO MATCH EQUIPMENT CORD CAP NEMA CONFIGURATION AND AMP RATING.
2. PROVIDE RECEPTACLE FOR CONNECTION TO A/V SCREEN. VERIFY EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH-IN.
3. PROVIDE POWER TO GARAGE DOOR OPERATOR. INSTALL PUSH BUTTON AND ASSOCIATED WIRING.
4. PROVIDE POWER TO MOTORHEAD STORAGE SHELVES. COORDINATE POWER REQUIREMENTS WITH OWNER.
5. CONNECT TO SECURITY CONTROL PANEL.
6. CONNECT TO FIRE ALARM CONTROL PANEL.
7. PROVIDE POWER TO CIRCUIT BREAKER STORAGE BAY. COORDINATE POWER REQUIREMENTS WITH OWNER.
8. PROVIDE A 30 AMP, 208, L630 RECEPTACLE.
9. PROVIDE POWER AND CONTROL WIRING UP TO ASSOCIATED CONDENSING UNIT. SEE AND CONNECT PER MANUFACTURER'S RECOMMENDATION.
10. PROVIDE POWER TO DOOR CONTROL PANEL.

FLOOR PLAN - POWER

ENLARGED IT ROOM

ENLARGED POWER PLAN
WORK NOTES:

1. CEILING MOUNTED VACANCY SENSOR, LOW VOLTAGE, DUAL TECHNOLOGY, 360 DEGREE FOV, 120/277 VOLT RATED. PROVIDE LOW VOLTAGE WIRING AS NECESSARY FOR A COMPLETE INSTALLATION.
2. POWER PACK FOR DEPTH CONTROL SYSTEM, FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE LOW VOLTAGE WIRING AS NECESSARY FOR A COMPLETE INSTALLATION.
3. 120/277 INPUT VOLTAGE, 24VDC SECONDARY VOLTAGE. POWER PACK FOR ON/OFF CONTROL OF FIXTURE AND INTERCONNECTION OF OCCUPANCY SENSORS, ROUTE THROUGHOUT THE BUILDING. PROVIDE LOW VOLTAGE WIRING AS NECESSARY FOR A COMPLETE INSTALLATION.
4. ROUTE THROUGHOUT THE BUILDING TO EMERGENCY LIGHTING.
5. ROUTE THROUGH TIMECLOCK TO C.

ROUTE THRU TIMECLOCK 'TC-1'.
GENERAL NOTES:

1. THE FUSE SIZE NOTED AS TO BE PER MANUFACTURE RECOMMENDATION.

WORK NOTES:

1. ROUTE POWER AND CONTROL WIRING UP TO ASSOCIATED CONDENSING UNIT, SIZE AND CONNECT PER MANUFACTURER'S RECOMMENDATION.
2. ROUTE TO TIMECLOCK 'TC-1'.