1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING INFORMATION IN THE FIELD AS REQUIRED FOR ALL WORK.
2. ALL DIMENSIONS INDICATED (* OR **) SHALL BE VERIFIED EITHER BY FIELD MEASUREMENTS FOR EXISTING STRUCTURES OR BY SHOP DRAWINGS FOR EQUIPMENT FURNISHED. STRUCTURAL DIMENSIONS NOT SHOWN BUT CONTROLLED BY OR RELATED TO EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR WITH THE MANUFACTURER PRIOR TO CONSTRUCTION.
3. IF A CONFLICT IS FOUND BETWEEN DIFFERENT PORTIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE DISTRICT IMMEDIATELY. THE CONTRACTOR SHALL OBTAIN DIRECTION FROM THE DISTRICT HOW TO PROCEED PRIOR TO COMPLETING FURTHER WORK RELATED TO THE CONFLICT.
4. EQUIPMENT ANCHOR BOLT SIZES, TYPES, EMBEDMENT AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO INSURE ACCURACY OF PLACEMENT.
5. CONTRACTOR SHALL EXTEND EXISTING STRUCTURAL HOUSEKEEPING PADS AS NECESSARY TO FACILITATE INSTALLATION OF NEW MOTOR CONTROL CENTERS.
6. REFER TO APPENDIX A OF THE SPECIFICATIONS FOR RECORD DRAWINGS CONTAINING ADDITIONAL INFORMATION.
7. MCC'S AND LIGHTING PANELS SHOWN TO BE DEMOLISHED SHALL BE REPLACED AS SHOWN IN THE NEW WORK DRAWINGS. LIGHTING PANELS SHALL BE RE-NAMED AS NOTED ON THE NEW WORK PLANS.
<table>
<thead>
<tr>
<th>No.</th>
<th>ITEM</th>
<th>PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MCC-1A</td>
<td>DISCONNECTION OF EXISTING POWER CONDUCTORS SUPPLYING VCP-46.4060 GAS FLARE.</td>
</tr>
<tr>
<td>2</td>
<td>MCC-1B</td>
<td>DISCONNECTION OF EXISTING POWER CONDUCTORS SUPPLYING LP-6-A GAS FLARE. AIR COMPRESSORS 4&amp;5, AND AIR COMPRESSORS 6&amp;7. INSTALLATION OF NEW &quot;LP-6-A ALTERNATIVE SOURCE&quot; CIRCUIT BREAKER.</td>
</tr>
<tr>
<td>3</td>
<td>MCC-6</td>
<td>REPLACEMENT OF EXISTING MCC</td>
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<tr>
<td>4</td>
<td>MCC-7</td>
<td>REPLACEMENT OF EXISTING MCC</td>
</tr>
<tr>
<td>5</td>
<td>SWITCHBOARD MS-1</td>
<td>INSTALLATION OF ONE LOW FLOW SWITCH IN EF-541 DUCTING. INSTALLATION OF TWO LOW FLOW SWITCHES IN SF-541 DUCTING.</td>
</tr>
<tr>
<td>6</td>
<td>LP-6-D</td>
<td>INSTALLATION OF ONE LOW FLOW SWITCH IN ODOR CONTROL DUCTING COMMON TO FAN-72.0101 AND FAN-72.0102.</td>
</tr>
<tr>
<td>7</td>
<td>LP-6-E</td>
<td>DISCONNECTION OF EXISTING SUPPLY CONDUCTORS FROM DISC-XFMR-LP-K TO XFMR-LP-K.</td>
</tr>
<tr>
<td>8</td>
<td>LP-6-F</td>
<td>INSTALLATION OF NEW SUPPLY CONDUCTORS TO SUPPLY DP-4 AND MCC-6.</td>
</tr>
<tr>
<td>9</td>
<td>LP-6-G</td>
<td>DISCONNECTION OF EXISTING POWER CONDUCTORS SUPPLYING MCC-6.</td>
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<tr>
<td>10</td>
<td>LP-6-H</td>
<td>INSTALLATION OF NEW &quot;DP-4 ALTERNATIVE SOURCE&quot; CIRCUIT BREAKER.</td>
</tr>
<tr>
<td>11</td>
<td>LP-6-M</td>
<td>INSTALLATION OF RTU ENCLOSURE A/C UNITS</td>
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<tr>
<td>12</td>
<td>LP-6-K</td>
<td>INSTALLATION OF RTU-4/5, RTU-6, RIO-7, AND PLC-7</td>
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<tr>
<td>13</td>
<td>LP-6-N</td>
<td>INSTALLATION OF RTU-4/5, RTU-6, AND RIO-7</td>
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<tr>
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<td>LP-6-O</td>
<td>INSTALLATION OF NEW POWER CONDUCTORS TO SUPPLY DP-4 AND MCC-6.</td>
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<tr>
<td>15</td>
<td>LP-6-P</td>
<td>DISCONNECTION OF EXISTING POWER CONDUCTORS SUPPLYING MCC-4A, MCC-6, MCC-7.</td>
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<tr>
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<td>LP-6-Q</td>
<td>INSTALLATION OF NEW CIRCUIT BREAKER TO SUPPLY DP-4.</td>
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<tr>
<td>17</td>
<td>LP-6-R</td>
<td>REPLACEMENT OF CIRCUIT BREAKERS SUPPLYING MCC-4A AND MCC-6.</td>
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<tr>
<td>18</td>
<td>LP-6-S</td>
<td>INSTALLATION OF NEW CIRCUIT BREAKER TO SUPPLY DP-4.</td>
</tr>
<tr>
<td>19</td>
<td>LP-6-T</td>
<td>REPLACEMENT OF EXISTING LIGHTING PANEL</td>
</tr>
<tr>
<td>20</td>
<td>LP-6-U</td>
<td>REPLACEMENT OF EXISTING LIGHTING PANEL</td>
</tr>
<tr>
<td>21</td>
<td>LP-6-V</td>
<td>REPLACEMENT OF EXISTING LIGHTING PANEL</td>
</tr>
<tr>
<td>22</td>
<td>LP-6-W</td>
<td>REPLACEMENT OF EXISTING LIGHTING PANEL</td>
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<td>23</td>
<td>LP-6-X</td>
<td>REPLACEMENT OF EXISTING LIGHTING PANEL</td>
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<td>LP-6-Y</td>
<td>REPLACEMENT OF EXISTING LIGHTING PANEL</td>
</tr>
<tr>
<td>25</td>
<td>LP-6-Z</td>
<td>REPLACEMENT OF EXISTING LIGHTING PANEL</td>
</tr>
</tbody>
</table>

NOTES:
1. REFER TO SPECIFICATION SECTION 01140 - WORK PROVISIONS FOR MORE INFORMATION.
2. DRAWINGS TO FULL SCALE: IF THIS BAR DOES NOT REACH FULL SCALE, THEN DRAWING IS NOT TO SCALE.
NOTES:
1. UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS, PROJECT SPECIFICATIONS, AND EMWD REQUIREMENTS, ELECTRICAL EQUIPMENT SHALL BE MOUNTED WITH THEIR CENTERLINE APPROXIMATELY 4'-0" ABOVE FINISHED FLOOR, SLAB, OR GRADE.
2. ALL ELECTRICAL EQUIPMENT INSTALLED IN HAZARDOUS AREAS SHALL BE ADEQUATELY GROUNDED PER THE NATIONAL ELECTRICAL CODE (NEC). THE ADEQUACY OF GROUNDING SYSTEMS SHALL BE DETERMINED BY INDEPENDENT ELECTRICAL ENGINEERS.  ALL CONDUCTORS, CABLES, AND BUSWORK IN HAZARDOUS AREAS SHALL BE GROUNDED ACCORDING TO THE REQUIREMENTS OF THE NEC.
3. ELECTRICAL SYSTEMS INSTALLED IN HAZARDOUS AREAS SHALL BE GROUNDED BY MEANS OF RATED ROLLER CLIPS OR WIRE CLOSURE, AND ALL CONDUCTORS, CABLES, AND BUSWORK IN HAZARDOUS AREAS SHALL BE GROUNDED ACCORDING TO THE REQUIREMENTS OF THE NEC.
4. A SEPARATE EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED FOR EACH ELECTRICAL SYSTEM INSTALLED IN HAZARDOUS AREAS. THIS CONDUCTOR SHALL BE TERMINATED AT THE PROPER DEVICE, PREVIOUS TO ANY TERMINAL OF THE POWER SOURCE AND ANY TERMINAL OF THE CONSUMER'S EQUIPMENT.
5. ALL EQUIPMENT LOCATED IN HAZARDOUS AREAS SHALL BE OF THE SAME VOLTAGE CLASS AND SIZE AND BE MARKED "Hazardous" AND "Check for Grounds".
6. CONTENT IN OPERATIONS ARE NOT PRINTED ON THE DRAWINGS, CONTRACTOR SHALL REFER TO THE OPERATIONS AREAS AND WIRING SPECIFICATIONS.
7. ALL ELECTRICAL ACCESSORIES SHALL BE MARKED "Hazardous" AND "Check for Grounds".
8. ALL ELECTRICAL ACCESSORIES SHALL BE MARKED "Hazardous" AND "Check for Grounds".
9. ALL ELECTRICAL ACCESSORIES SHALL BE MARKED "Hazardous" AND "Check for Grounds".
10. EXISTING EQUIPMENT IS SHOWN AS DOCUMENTED IN PROJECT SPECIFICATIONS, AND EMWD REQUIREMENTS. THE SEQUENCE OF WORK, AND SHUTDOWN COORDINATION WITH OTHER APPROVED METHODS DESCRIBED IN THE CONTRACT.
11. CONTRACTOR SHALL REFER TO SPECIAL CONDITIONS ADDITIONAL TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND EMWD REQUIREMENTS IN INSTALLING ELECTRICAL CONDUITS.
12. CONTRACTOR SHALL REFER TO SPECIAL CONDITIONS ADDITIONAL TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND EMWD REQUIREMENTS IN INSTALLING ELECTRICAL CONDUITS.
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15. CONTRACTOR SHALL REFER TO SPECIAL CONDITIONS ADDITIONAL TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND EMWD REQUIREMENTS IN INSTALLING ELECTRICAL CONDUITS.
16. CONTRACTOR SHALL REFER TO SPECIAL CONDITIONS ADDITIONAL TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND EMWD REQUIREMENTS IN INSTALLING ELECTRICAL CONDUITS.
17. CONTRACTOR SHALL REFER TO SPECIAL CONDITIONS ADDITIONAL TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND EMWD REQUIREMENTS IN INSTALLING ELECTRICAL CONDUITS.
18. CONTRACTOR SHALL REFER TO SPECIAL CONDITIONS ADDITIONAL TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND EMWD REQUIREMENTS IN INSTALLING ELECTRICAL CONDUITS.
19. CONTRACTOR SHALL REFER TO SPECIAL CONDITIONS ADDITIONAL TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND EMWD REQUIREMENTS IN INSTALLING ELECTRICAL CONDUITS.
20. CONTRACTOR SHALL REFER TO SPECIAL CONDITIONS ADDITIONAL TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND EMWD REQUIREMENTS IN INSTALLING ELECTRICAL CONDUITS.
21. CONTRACTOR SHALL REFER TO SPECIAL CONDITIONS ADDITIONAL TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND EMWD REQUIREMENTS IN INSTALLING ELECTRICAL CONDUITS.
NOTES:

1. CONTRACTOR SHALL ROUTE NEW CONDUIT OVERHEAD BETWEEN THE MAIN OFFICE BUILDING AND THE SLUDGE DEWATERING BUILDING. CONDUIT SHALL BE ROUTED ADJACENT TO EXISTING CONDUIT.

2. PROVIDE CONDUIT EXPANSION JOINT AS REQUIRED.

3. WALL PENETRATION SHALL BE PER DETAIL 1611105 AS SHOWN ON DRAWING 00D01.
NOTES:
1. HOIST MOUNTED EQUIPMENT
2. PROJECT MAN-AND-LADDER PANEL BRANCH CORDING IS TO BE PERFORMED IN CONFORMITY WITH SPECIFICATION 00001. RECORD fusion FOR A Prior TO INSTALLATION TO VERIFY BIDDER'S DRAWING ORIGINS.

AREA DESIGNATIONS:
- INDOOR WET PROCESS AREA
- INDOOR DRY PROCESS AREA
- INDOOR DRY NON-PROCESS AREA
- INDOOR TYPE I CHEMICAL AREA
- INDOOR TYPE II CHEMICAL AREA

PLANT NO. 1 BLOWER BUILDING DEMOLITION PLAN

PLANT NO. 1 BLOWER BUILDING POWER AND CONTROL PLAN
**CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO THIS LOAD FOR DURATION OF CUT-OVER.**

**EPD - GROUND FAULT CIRCUIT INTERRUPTER (30mA)**

**LOD - LOCK-ON DEVICE**

**MODIFICATION (MODS) LEGEND:**

- SEE NOTE 1
- SEE NOTE 2

---

### ORIGINAL DRAWING

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<tr>
<th>CKT No.</th>
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<th>Wire 1</th>
<th>Wire 2</th>
<th>Wire 3</th>
<th>Wire 4</th>
<th>Total Load (A)</th>
<th>Total Load (VA)</th>
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### MODIFIED DRAWING

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<th>Wire 3</th>
<th>Wire 4</th>
<th>Total Load (A)</th>
<th>Total Load (VA)</th>
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<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>1,380</td>
</tr>
</tbody>
</table>

---

**NOTES:**

1. CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO THIS LOAD FOR DURATION OF CUT-OVER.
2. LIGHTING PANEL UP IF POWERING PROJECT, REFER TO SINGLE LINE DIAGRAM SHOWN ON DRAWING 00D01 FOR MORE INFORMATION.
NOTES:
1. SLUDGE HOLDING TANK IS CONSIDERED A HAZARDOUS AREA AS SHOWN IN THE RECORD DRAWINGS LOCATED IN APPENDIX A OF THE SPECIFICATIONS. REPLACE CONDUIT SEALS AS REQUIRED TO INSTALL NEW CONDUCTORS AS SHOWN.
2. CONDUITS TO ALL GO/NO-GO LIGHTS SHALL BE ROUTED ON THE INTERIOR OF THE BUILDING AND ONLY PERMITTED TO PENETRATE THE EXTERIOR OF THE BUILDING AT THE LOCATION OF THE GO/NO-GO LIGHT. WALL PENETRATION SHALL BE PER DETAIL 1611105 AS SHOWN ON DRAWING 00D01. GO/NO-GO LIGHT FIXTURES SHALL BE MOUNTED WITH THE TOP OF THE FIXTURE ALIGNED VERTICALLY WITH THE TOP OF THE RESPECTIVE DOORFRAME.
3. REMOVE THE EXISTING TWO SETS OF TAPPED OFF CONDUCTORS LOCATED IN THE MAIN BREAKER SECTION OF EXISTING MCC-7 BACK TO MAIN SWITCHBOARD, MS-1, LOCATED IN THE MAINTENANCE BUILDING. CONTRACTOR SHALL MANDREL, LEAVE PULL ROPE, CAP AND LABEL CONDUITS AS SPARE.
4. INSTALL NEW A/C UNIT ON RIGHT WALL OF EXISTING RIO-7 ENCLOSURE. PROTECT-IN-PLACE EXISTING RTU EQUIPMENT.
5. EXISTING SUPPLY FAN, SF-541, MOUNTED ON ROOF PROVIDES 1,650 CFM TO EACH FLOOR OF THE BUILDING. PROVIDE TWO NEW THERMAL FLOW SWITCHES IN EXISTING SUPPLY FAN DUCT. FLOW SWITCH FSL-SF-541-1 SHALL BE INSTALLED ON UPPER FLOOR SECTION OF DUCTING, ABOVE REGISTER TO THE GRADE LEVEL FLOOR. THIS 30" X 22" SECTION OF DUCT IS CONSTRUCTED OF GALVANIZED SHEET METAL.
6. EXISTING GRAVITY VENT EXHAUSTS 1,700 CFM FROM UPPER LEVEL.
7. EXISTING EXHAUST FAN, EF-541, MOUNTED ON ROOF DRAWS 1,600 CFM FROM LOWER LEVEL OF BUILDING. FURNISH AND INSTALL NEW THERMAL FLOW SWITCH IN EXISTING 20" X 16" EXHAUST FAN DUCT. EXISTING DUCT IS CONSTRUCTED OF GALVANIZED STEEL SHEET METAL.
8. FLOW SWITCHES SHALL BE MOUNTED AT APPROXIMATELY 4' ABOVE GRADE LEVEL AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
NOTES:

1. EXISTING SUPPLY FAN, SF-541, MOUNTED ON ROOF PROVISIONS 1,650 CFM TO EACH FLOOR OF THE BUILDING. FURNISH AND INSTALL TWO NEW THERMAL FLOW SWITCHES IN EXISTING SUPPLY FAN DUCT. FLOW SWITCH FSL-SF-541-2 SHALL BE INSTALLED ON LOWER LEVEL SECTION OF DUCTING. THIS 20" X 16" SECTION OF DUCT IS CONSTRUCTED OF GALVANIZED SHEET METAL.

2. FLOW SWITCHES SHALL BE MOUNTED AT APPROXIMATELY 4' ABOVE FLOOR AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

3. HORN AND STROBE DEVICE SHALL BE WALL MOUNTED.

AREA DESIGNATIONS:

- Bopper Dry Process Area
- Bopper Dry Non-Process Area
- Bopper Type 1 Chemical Area
- Bopper Type 2 Chemical Area

SLUDGE TRANSFER BUILDING - LOWER LEVEL POWER AND CONTROL PLAN

SLUDGE TRANSFER BUILDING - ROOF POWER AND CONTROL PLAN

CALL BEFORE YOU DIG
NOTES:

1. LP-8A-H SHALL BE POWERED FROM MCC-8A, VIA T-8, AS SHOWN ON MCC-8A SINGLE LINE DIAGRAM. PROVIDE NEW NAMEPLATE FOR THIS LIGHTING PANEL TO REFLECT "LP-8A-H".

2. EACH OF THE TWO EXISTING GRavity VENTS PROVIDE 5,500 CFM INTO THE BUILDING.

3. EXISTING ODOR SCRUBBER LOCATED OUTSIDE OF THE SLUDGE DEWATERING BUILDING EXHAUSTS 11,000 CFM OUT OF THE BUILDING.

4. CONDUITS TO ALL EXISTING LIGHTS SHALL BE ROUTED ON THE INTERIOR OF THE BUILDING AND PENETRATE TO THE EXTERIOR OF THE BUILDING AT THE LOCATION OF THE GO/NO-GO LIGHT FIXTURES. LIGHT FIXTURES SHALL BE MOUNTED WITH THE TOP OF THE FIXTURES ALIGNED VERTICALLY WITH THE TOP OF THE RESPECTIVE DOORFRAMES.

5. DEMO/EXISTING CONDUIT FROM DISCONNECT TO GRADE LEVEL. CAP AND SEAL EXISTING CONDUIT PER DETAIL 1611103 AS SHOWN ON DRAWING 00D01.

6. EXISTING TERMINAL UNIT #7/8 (PLC-7) SHALL BE DISCONNECTED FROM THE EXISTING TERMINAL BOARD.

7. EXISTING MCC-8A SHALL BE DISCONNECTED FROM THE EXISTING MCC-8A SINGLE LINE DIAGRAM.

AREA DESIGNATIONS:

INOOR TYPE 1 CHEMICAL AREA
INOOR TYPE 2 CHEMICAL AREA
INOOR DRY PROCESS AREA
INOOR WET PROCESS AREA
INDOOR NON-PROCESS AREA

SLUDGE DEWATERING BUILDING PLAN

07/10/2020
NOTES:

1. INSTALL NEW FLOW SWITCH FSL-FAN-72.0101/0102 ON EXISTING 36" FRP ODOR CONTROL PIPING PER MANUFACTURER'S RECOMMENDATIONS.

2. PROVIDE A PITCH POCKET AND PIERCE EXISTING ROOF PIPES STANDARD DETAIL 1611101 AS SHOWN ON THIS DRAWING.

SLUDGE DEWATERING BUILDING ROOF PLAN
NOTES:
1. MCC MAIN BREAKER SHALL BE 100% RATED.
2. EXISTING LIGHTING PANEL SUPPLIED FROM MCC-6. REPLACE EXISTING PANEL AS SHOWN ON DRAWINGS. SUPPLY NEW LIGHTING PANEL FROM MCC-7 AS SHOWN.
3. RE-TERMINATE EXISTING 500KCMIL CONDUCTORS FROM MCC-3MA ON NEW MCC-7 MAIN BREAKER.
NOTES:

1. EXISTING MCC IS AN EATON FREEDOM SERIES 2100 MOTOR CONTROL CENTER. PART NO: SLA82304 IT.001-FVC.

SECTION 1
SECTION 2
SECTION 3
SECTION 4
SECTION 5
SECTION 6

ELECTRICAL MCC-8A ELEVATION

APPROVALS

EASTERN MUNICIPAL WATER DISTRICT
MORENO VALLEY REGIONAL WATER RECLAMATION FACILITY
SPEC NO. 1401S
HAZEN AND SAWYER
7700 IRVINE CENTER DRIVE, SUITE 200
IRVINE, CALIFORNIA 92618

ERIK JORGENSEN, P.E.
A.P.
B.M.
M.M.
M.M.
07/2020
07/2020
07/2020
07/2020
07/2020

SHAUN STONE, P.E.
07/2020
07/10/2020

MCC-8A
ELEVATION (NOT TO SCALE)

IF THIS BAR DOES NOT MEASURE 1"
THEN DRAWING IS NOT TO FULL SCALE

0
1"
1/2"

SCALE:

CALL BEFORE YOU DIG
INFORMATION FREE TO ANYONE CALL TOLL FREE 1-800-222-5444
WE ARE COMMITTED TO THE SAFETY OF OUR COMMUNITY

CALL FOR A DIG VIOLATION CALL 1-800-222-5444
WE REPLY FAST AND FREE
NOTES:
1. UTILIZE EXISTING DIGITAL INPUT CARDS FOR NEW VENTILATION MONITORING SIGNALS.
2. PROVIDE A NEW ALLEN-BRADLEY 1756-EN2TR COMMUNICATION MODULE IN ORDER TO FACILITATE COMMUNICATION BETWEEN MCC POWER MONITOR AND PLC.

SEE NOTE 1
SEE NOTE 2
SEE NOTE 1
SEE NOTE 1
SEE NOTE 1
NOTES:
1. FULL CONTACT OSMES CALL FLOW CONCEPTUAL.
2. GOING GO LIGHTS AND LOCATED IN A COMMON ENCLOSURE, SHOWN SEPARATELY FOR CLARITY OF CONTROL.
3. SIZE BASED ON PROTECTION NEEDS.
4. SIZE BASED ON LOAD REQUIREMENTS.
5. SCHEMATIC ILLUSTRATED DESIGNS BELOW ONLY PROVIDE ALL NECESSARY COMPONENTS TO MEET PROJECT REQUIREMENTS.
6. UTILIZE EXISTING 1 POOL, 5A CIRCUIT BREAKER TO SUPPLY NEW LOAD.
7. EXISTING PANEL IS A SQUARE D TYPE NQOB PANELBOARD, CATALOG NO. UNK IREX.
8. CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO THSE LIGHTING PANELS FOR INSPECTION OF CNT PANEL.

LEGEND

- ALARM LIGHT - AUDIBLE ALARM
- ALARM SIGNAL - VISUAL ALARM
- REVISION STAMP
- ER - 5 STANDARD BOX
- ER - 4 STANDARD BOX
- ER - 3 STANDARD BOX
- ER - 2 STANDARD BOX
- ER - 1 STANDARD BOX
- SLUDGE DEWATERING BUILDING
- SLUDGE DEWATERING BUILDING EAST
- SLUDGE DEWATERING BUILDING NORTH
- SLUDGE DEWATERING BUILDING WEST
- SLUDGE DEWATERING BUILDING NORTH
- SLUDGE DEWATERING BUILDING NORTH
- SLUDGE DEWATERING BUILDING NORTH
- SLUDGE DEWATERING BUILDING NORTH

SLUDGE DEWATERING BUILDING MAIN VENTILATION MONITORING PANEL

ELEMENTARY CONTROL SCHEMATIC

IRVINE, CALIFORNIA 92618

HAZEN AND SAWYER

CALL BEFORE YOU DIG

EASTERN MUNICIPAL WATER DISTRICT

SPEC NO. 1401S

ELECTRICAL ELEMENTARY CONTROL SCHEMATICS - B

07/10/2020

SHAUN STONE, P.E.

07/2020

ERIK JORGENSEN, P.E.

07/2020

TOTAL LOAD (VA)

TOTAL LOAD (A)

TOTAL CKT No.
**NOTES:**
1. Contractor shall provide temporary power to this load for duration of cut overs.
2. Contractor shall provide temporary power to this lighting panel for duration of cut overs.

### Panel Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Panel Location</th>
<th>Panel Type</th>
<th>Panel Size</th>
<th>Meters</th>
<th>Fuses</th>
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<td>MCC-7</td>
<td>100A 3P</td>
<td>600V</td>
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### Conduit and Wire Schedule

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<th>Conduit Size</th>
<th>Conduit Type</th>
<th>Notes</th>
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<td>1”</td>
<td>PVC</td>
<td>Existing Conduit</td>
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<td>6#14, #14 GND</td>
<td>1”</td>
<td>PVC</td>
<td>Existing Conduit</td>
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<td>PVC</td>
<td>Existing Conduit</td>
</tr>
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<td>PVC</td>
<td>Existing Conduit</td>
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<td>PVC</td>
<td>Existing Conduit</td>
</tr>
<tr>
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</tr>
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<td>3#12, #12 GND</td>
<td>1”</td>
<td>PVC</td>
<td>Existing Conduit</td>
</tr>
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<td>2#12, #12 GND</td>
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</tr>
<tr>
<td>6#14, #14 GND</td>
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**MODIFICATIONS (DETAILS):**

<table>
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<tr>
<th>Modification Details</th>
<th>Notes</th>
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<tbody>
<tr>
<td>CONDUIT AND BOX SCHEDULE</td>
<td>PANEL, CONDUIT, AND WIRE</td>
</tr>
</tbody>
</table>
NOTES:

1. REFER TO EXISTING RECORD DRAWINGS INCLUDED IN APPENDIX A OF THE SPECIFICATIONS FOR APPROXIMATE LOCATION OF EXISTING DUCT BANK ROUTING.

2. FLARE AREAS ARE CONSIDERED HAZARDOUS AREAS AS SHOWN ON THE PRE-EXISTING RECORD DRAWINGS LOCATED IN APPENDIX A OF THE SPECIFICATIONS. REPLACE CONDUIT SEAL AS REQUIRED TO INSTALL NEW CONDUCTOR AS SHOWN.

Zinc Flare Pad
Zinc Flare Control Panel
LP-Zink Flare
VCP-46.4060 Gas Flare

DAF BUILDING - DAF AREA SITE PLAN

SHAUN STONE, P.E.
07/2020

ERIK JORGENSEN, P.E.
A.P.
B.M.
M.M.
M.M.
07/2020

07/2020
07/2020
07/2020
NOTES:

1. DEMOLISH EXISTING PULL BOX. DEMOLISH EXISTING CONDUIT FROM PULL BOX TO GRADE LEVEL. CAP AND SEAL EXISTING CONDUIT PER DETAIL 1611103 AS SHOWN ON DRAWING 00D01.

2. CONDUITS TO ALL GO/NO-GO LIGHTS SHALL BE ROUTED ON THE INTERIOR OF THE BUILDING AND ONLY PENETRATE TO THE EXTERIOR OF THE BUILDING AT THE LOCATION OF THE GO/NO-GO LIGHT. WALL PENETRATION SHALL BE PER DETAIL 1611105 AS SHOWN ON DRAWING 00D01. GO/NO-GO LIGHT FIXTURES SHALL BE MOUNTED WITH THE TOP OF THE FIXTURE ALIGNED VERTICALLY WITH THE TOP OF THE RESPECTIVE DOORFRAME.

3. PROTECT-IN-PLACE LIGHTING PANEL BRANCH CIRCUIT CONDUCTORS. CONTRACTOR SHALL EXTEND AND RECONNECT EXISTING CONDUCTORS TO NEW PANELBOARD PER DETAIL 1613001 AS SHOWN ON DRAWING 00D01.

4. INSTALL NEW A/C UNIT ON RIGHT WALL OF EXISTING RTU-4/5 ENCLOSURE. PROTECT-IN-PLACE EXISTING RTU EQUIPMENT.

5. EXISTING 36" X 24" TRANSOM LOUVER LOCATED ABOVE EXISTING DOOR.

6. EXISTING EXHAUST FAN MOUNTED ON ROOF VENTILATES 2200 CFM.

7. PROVIDE 18" X 18" DUCT EXTENDING DOWN 3'-0" THROUGH EXHAUST FAN ROOF OPENING PER DETAIL 1550001 AS SHOWN ON DRAWING 00D01.

8. REWORK EXISTING CONDUIT SUPPORT AS REQUIRED TO INSTALL DUCT EXTENSION.

9. REWORK EXISTING CONDUIT AS REQUIRED TO INSTALL DUCT EXTENSION.
NOTES:
1. PROVIDE NEW NAMEPLATE INDICATING THIS BUCKET AS "SPARE".
2. PROTECT-IN-PLACE EXISTING GAS FLARE, VCP-46.4060. RESUPPLY GAS FLARE FROM DP-4 AS NOTED ON NEW WORK PLANS.
NOTES:

1. PROVIDE NEW NAMEPLATE INDICATING THIS BUCKET AS "SPARE".

2. PROTECT-IN-PLACE EXISTING LOAD. RESUPPLY EXISTING LOADS AS NOTED ON NEW WORK PLANS.

3. PROVIDE NEW 200AF, 150AT, 42KAIC, RATED CIRCUIT BREAKER IN EXISTING MCC-4B.

4. EXISTING MOTOR CONTROL CENTER IS A TOSHIBA HOUSTON INTERNATIONAL TYPE MCC.
CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO THIS LOAD FOR DURATION OF CUT-OVER.

EPD - GROUND FAULT CIRCUIT INTERRUPTER (30mA)
ETU - ELECTRONIC TRIP UNIT
LFD - LOCK-OFF DEVICE
GFCI - GROUND FAULT CIRCUIT INTERRUPTER (5mA)

EXTERIOR LIGHTS
SPARE
208 COMPRESSOR*

DESCRIPTION
SEE NOTE 1
P-6310
WIRE
15
15
15
20

TOTAL
No.
19
17
17
23
7

VOLT-AMPERES
5,000
2,000
550
2,000

P-6302
P-6310
A
B

FIT 46.4062*
LCP 46.4012*

LP-DP4-E
480-120/240V
15kVA

SEE NOTE 2
P-6320

JUNCTION BOX

RISER DIAGRAMS

Notes:
- MODIFICATION LEGEND:
  - Fit 46.4062*
  - LCP 46.4012*
  - 100kA SPD
  - NEMA 12
- MODIFICATION (MODS) LEGEND:
  - 1. EXISTING CONDUCTORS TO NEW PANEL PER DETAIL

- CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO THE LOAD FOR DURATION OF CUT-OVER.

- Panels Available:
  - DP-4
  - AIR COMPRESSOR ALG OP
  - HYDRO RANGER*
  - MS-1
  - VCP-46.4062
  - EXISTING WALL BOX
  - LCP-46.4012

- Drawings Available:
  - MS-1
  - VCP-46.4062
  - LCP-46.4012

- Additional Notes:
  - SEE NOTE 1
  - SEE NOTE 1
  - SEE NOTE 1
  - SEE NOTE 1
  - SEE NOTE 1
  - SEE NOTE 2

- Approval Details:
  - EASTERN MUNICIPAL WATER DISTRICT

- Approval Information:
  - APPROVED BY: EMD 02/23/2020

- Specification Information:
  - SPEC NO. 1401S

- Additional Details:
  - CALL BEFORE YOU DIG
  - BOREM VALLEY REGIONAL WATER REUSE FACILITY
  - HAZEN TECHNICAL SERVICES, INC.
  - 700 15th Ave., Suite 200, Denver, CO 80202
  - 303-297-7600
<table>
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<tr>
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CONDUIT AND WIRE SCHEDULE
NOTES:

1. PROTECT-IN-PLACE LIGHTING PANEL BRANCH CIRCUIT CONDUCTORS. CONTRACTOR SHALL EXTEND AND RECONNECT EXISTING CONDUCTORS TO NEW PANELBOARD PER DETAIL 1613001 AS SHOWN ON DRAWING 00D01.

2. INSTALL NEW A/C UNIT ON RIGHT WALL OF EXISTING RTU-6 ENCLOSURE. PROTECT-IN-PLACE EXISTING RTU EQUIPMENT. EXISTING MCC-6 SHALL BE REPLACED AS SHOWN ON THE DRAWINGS. THIS REPLACEMENT WILL MAKE 20" OF SPACE AVAILABLE TO THE RIGHT OF RTU-6. RTU A/C UNIT SHALL BE ABLE TO HAVE NORMAL MAINTENANCE PERFORMED BY STANDING IN FRONT OF THE CABINET. RTU A/C UNIT SHALL BE REMOVABLE FOR FUTURE REPLACEMENT OR REFURBISHMENT WITHOUT A NEED TO MOVE RTU OR MCC.

3. PROTECT-IN-PLACE EXISTING HOUSEKEEPING PAD.
NOTES:
1. PROVIDE NEW 200AT, 400AF, 65KAIC CIRCUIT BREAKER IN EXISTING SWITCHBOARD MS-1. RE-USE EXISTING CONDUCTORS TO RE-SUPPLY MCC-4A.
2. SWITCHBOARD MS-1 IS A SQUARE D POWER-STYLE I-LINE SWITCHBOARD. CAT NO. 49-91058-01.
3. PROVIDE NEW 250AT, 400AF, 65KAIC CIRCUIT BREAKER IN EXISTING SWITCHBOARD MS-1. ROUTE NEW CONDUCTORS IN EXISTING CONDUIT TO RE-SUPPLY NEW DISTRIBUTION PANEL DP-4.
4. PROVIDE NEW 600AT, 800AF, 65KAIC CIRCUIT BREAKER IN EXISTING SWITCHBOARD MS-1. ROUTE NEW CONDUCTORS IN NEW CONDUIT TO SUPPLY POWER TO NEW MCC-6.

SEE NOTE 1
SEE NOTE 4
NOTES:
1. PANEL IS LOCATED IN PLANT NO.1 BLOWER BUILDING. REFER TO DRAWING 14E02 FOR PANEL LOCATION.
2. CONTRACTOR SHALL RE-USE EXISTING CONDUIT WHERE SHOWN AND MATCH EXISTING CONFIGURATION.
3. MCC BOXES SHALL BE FIELD VERIFIED.

SECTION 1

GENERATION ROOM LIGHTING PANEL -

SECTION 2

MAINTENANCE SHOP LIGHTING PANEL -

SECTION 3

BLOWER BUILDING LIGHTING PANEL -

SECTION 4

BLOWER BUILDING LIGHTING PANEL -

NOTES:
1. SEE NOTE 1
2. SEE NOTE 2
3. SEE NOTE 3

07/10/2020
SHAUN STONE, P.E.
ERIK JORGENSEN, P.E.
**EPD - GROUND FAULT CIRCUIT INTERRUPTER (30mA)**

**MODIFICATION (MODS) LEGEND:**

- ENG HEATER EAST*
- PLC-6*
- SPARE
- SPIRE-1*
- WATER HEATER
- SEE NOTE 1
- SEE NOTE 1

**PHASE TOTAL**

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<td>800</td>
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**TOTAL LOAD (VA)**

<table>
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<tr>
<th>Circuit No.</th>
<th>Load (VA)</th>
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</thead>
<tbody>
<tr>
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<td>5,000</td>
</tr>
</tbody>
</table>

**MCC-6 EXHAUST FAN**

**SOLIDS HANDLING MCC REPLACEMENT PROJECT**

**NOTES:**

1. CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO THIS LOAD FOR DURATION OF CUT-OVER.
2. DURING FIELD INVESTIGATION, CIRCUIT BREAKER WAS FOUND IN "OFF" POSITION YET LABELED AS "ON." CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO THIS LOAD AS APPROPRIATE.

**Panel Schedule (Cont.)**
NOTES:
1. LP-8A shall be supplied from MCC-8A, located in the Sludge Dewatering Building, as shown on MCC-8A Single Line Diagram. Provide new nameplate for this lighting panel to reflect "LP-8A-K".
2. Demolish existing DISC-XFMR-LP-K. Demolish existing conduit from disconnect to grade level. Cap and seal existing conduit per detail 1611103 as shown on drawing 00D01.

AREA DESIGNATIONS:
1. Indoor Wet Process Area
2. Indoor Dry Process Area
3. Indoor Dry Non-Process Area
4. Indoor Type 1 Chemical Area
5. Indoor Type 2 Chemical Area
Notes:
1. EGC lug shall be attached with nut and lockwasher to the motor manufacturer’s supplied equipment ground conductor. See job drawings for size.
2. New wallhung busway lammper (N.C. TAMB) for M.C. panels.
3. Splice enclosure to bus.
4. Existing lugs per requirement.
5. EGC lug secondary, neutral, and grounding busings directly to the enclosure.
6. Equipment grounding conductor, see job drawings for size.

1. IsometricExisting conduit shown for transformers up to 45 kVA. See job drawings for larger transformers. Transformer drains or wire voltage unit required when larger transformers.

1. Provide 1/4" MIN conduit existing, while protecting conduit opening. Do not remove concrete as required. Install coupling as non-shrink grout and finish surface to match cut reinforcing steel.

Conduit, provide pull rope, and install plastic threaded plug with slot or square socket for 1.

Notes:
1. EGC lug, motor lead wiring, and compression lug one-hole connections.
2. Install short barrel compression connector on field wiring purpose and as specified. Heat shrink or cold applied connector insulation listed for the ring terminals on motor leads shall be factory installed by the motor manufacturer.
3. Lugs are acceptable in lieu of the field installed EGC lug.
4. Crimping die. Connectors shall have smoothly rounded edges. With manufacturer’s recommended compression tool and low voltage motor termination.

1. Fabrication and installation of all ground conductors shall be in accordance with NEC 250-66. For conductor (NEC Table 250-122), insulated equipment ground conductor, branch circuit conduit used as equipment grounding conductor.

1. Supply (primary) conduit to the ground bus and grounding bushings directly to all conduit grounding loops and ground bus. Equipment grounding to the ground bus and bushings, and ground bus directly to the neutral bus.

1. Lighting panel replacement detail

1. Provide wood blocking, wood nailer, angle support, sheet metal collar, pressure treated wood, and mesh screen covering.

1. See archival drawing for details. See note 1.