1. NOTE THAT THIS IS A SECURE FACILITY AND THAT IT IS GOVERNED AND MANAGED UNDER STRICT REGULATIONS.

2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING BUILDINGS, UTILITIES, ETC. OR PORTIONS THEREOF, WHICH ARE DAMAGED BY CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED TO THEIR ORIGINAL CONDITION, UNLESS OTHERWISE NOTED TO BE REMODELED PER THE PROJECT CONTACTS LIST.

3. COMPLY WITH ALL CODES, ORDINANCES AND REQUIREMENTS.

4. DO NOT SCALE DRAWINGS; WRITTEN DIMENSIONS PREVAIL.

5. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED TO EXECUTE ANY WORK AND SHALL NOTIFY THE DEPARTMENT OF FACILITIES OPERATIONS IN WRITING OF ANYTHING DIFFERING FROM THAT SHOWN ON THE DRAWINGS. FAILURE TO DO SO WILL CONSTITUTE THE CONTRACTOR'S ACCEPTANCE OF THE WORK AS SHOWN.

6. EXISTING BUILDINGS, UTILITIES, ETC. OR PORTIONS THEREOF, WHICH ARE DAMAGED BY CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED TO THEIR ORIGINAL CONDITION, UNLESS OTHERWISE NOTED TO BE REMODELED.

7. EXACT LOCATIONS OF EXISTING UTILITIES ARE TO BE DETERMINED BY THE CONTRACTOR.

8. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE SYSTEMS. ACCESS WILL BE LIMITED TO THOSE AREAS AND PORTIONS THEREOF, WHICH ARE DAMAGED BY CONSTRUCTION OPERATIONS.

9. SEE THE PROJECT CONTACTS LIST. ADDITIONALLY THE WORK WITH THE OCCUPANTS AND WSU PROJECT MANAGER IS GOVERNED AND MANAGED UNDER STRICT REGULATIONS.

10. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED TO EXECUTE ANY WORK.

11. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE SYSTEMS PRIOR TO EXECUTING ANY WORK AND SHALL NOTIFY THE DEPARTMENT OF FACILITIES OPERATIONS IN WRITING OF ANYTHING DIFFERING FROM THAT SHOWN ON THE DRAWINGS. FAILURE TO DO SO WILL CONSTITUTE THE CONTRACTOR'S ACCEPTANCE OF THE WORK AS SHOWN.

12. CONTRACTOR SHALL COORDINATE AND COMMUNICATE THEIR WORK WITH THE OCCUPANTS AND WSU PROJECT MANAGER.

13. COORDINATE WITH OCCUPANTS. IN CASES OF CONFLICT OF WORK, THE OCCUPANTS WILL APPLY.

14. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING BUILDINGS, UTILITIES, ETC. OR PORTIONS THEREOF, WHICH ARE DAMAGED BY CONSTRUCTION OPERATIONS.

INDEX of DRAWINGS

- M-002 MECHANICAL EQUIPMENT SCHEDULES
- M-001 LEGENDS, ABBREVIATIONS, GENERAL NOTES AND MECH. SPECS
- M-003 ELECTRICAL SCHEDULES AND DETAILS
- M-004 ELECTRICAL ONE-LINE AND DETAILS
- M-005 MECHANICAL SECTIONS
- M-006 MECHANICAL DETAILS
- M-007 MECHANICAL CONTROL, SHEET # SHEET TITLE
- M-008 MECHANICAL CONTROL DIAGRAMS
- M-009 SYSTEM DIAGRAMS

BUILDING INFORMATION

- CONTRACTOR'S ACCEPTANCE OF THE WORK AS SHOWN.
- FAILURE TO DO SO WILL CONSTITUTE THE CONTRACTOR'S ACCEPTANCE OF THE WORK AS SHOWN.

PROJECT CONTACTS

- BUILDING INFORMATION
- DRAWN BY: CHECKED BY:
- PROVISIONAL STAMP:
- CONSULTANTS:
- PROJECT No. FILE No:
- DRAWN BY: CHECKED BY:
- PROVISIONAL STAMP:
- CONSULTANTS:
- PROJECT No. FILE No:
- DRAWN BY: CHECKED BY:
- PROVISIONAL STAMP:
- CONSULTANTS:
GENERAL NOTES

1. CLIMATE DATA PROVIDED BY ASHRAE.

2. REFER TO SPECIFICATIONS AND ALL OTHER DIVISION DOCUMENTS FOR ADDITIONAL DISTINCTIONS.

3. COORDINATE ALL EXPOSED MECHANICAL SYSTEMS, PIPING AND DUCTWORK SO PROPER INTERFACE, ADEQUATE CLEARANCES, AND TO AVOID CONFLICTS. PROVIDE TRANSITIONS AND FITTINGS REQUIRED FOR A COMPLETE SYSTEM.

4. RADIUS ELBOWS (NO VANES): UTILIZE RADIUS ELBOWS ON ALL MATERIAL HANDLING BYPASS LINES, ETC. AND SHALL ONLY BE REDUCED FOR SMALLER DIAMETER PIPING, VALVES, SPECIALTY ITEMS, INSTRUMENTATION, ETC. AS INDICATED ON THE DRAWINGS.

5. PROVIDE TRANSITIONS AS REQUIRED TO CONNECT DUCTWORK TO TERMINAL UNITS, FANS, AIR HANDLERS CONNECTIONS, ETC.

5. PROVIDE REDUCERS AT EQUIPMENT CONNECTIONS AND BEFORE AND AFTER PIPING, VALVES, SPECIALTY ITEMS, INSTRUMENTATION, ETC. AS INDICATED.

6. PROVIDE ALL NECESSARY OFFSETS, INSTALLED BLOCKING AND SHIMS BELOW CURB. ALL WOOD PRODUCTS SHALL BE HUMIDIFIER, INSTALLED TO AVOID CONFLICTS.

THE MECHANICAL SYSTEMS SHALL CONSIST OF ALL WORK SHOWN ON THE DRAWINGS AND SHALL BE Jssembled IN ACCORDANCE WITH THE 2018 WA STATE ENERGY CODE. CONTRACTORS SHALL PROVIDE ALL TIME AND MATERIALS NEEDED FOR CERTIFIED COMMISSIONING PROFESSIONAL CONTRACTED DIRECTLY TO WSU IN ACCORDANCE WITH ALL REQUIREMENTS OF SECTION 408 OF THE 2018 WA STATE ENERGY CODE. CONTRACTORS SHALL PROVIDE ALL TIME AND MATERIALS NEEDED FOR CERTIFIED COMMISSIONING PROFESSIONAL CONTRACTED DIRECTLY TO WSU IN ACCORDANCE WITH ALL REQUIREMENTS OF SECTION 408 OF THE 2018 WA STATE ENERGY CODE.

GENERAL NOTES

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### CONTRACTOR INSTALLED (OFCI) NOTES:

1. PROVIDE WITH THE FOLLOWING FEATURES, OPTIONS AND ACCESSORIES:
   - PEIZO RING FACTORY INSTALLED. TRANSDUCER BY THE D DC CONTROL CONTRACTOR. SEE M-601.
   - PROVIDE WITH SPARE VFD IN ORIGINAL MANUFACTURERS PACKAGING.
   - DETAILS AND CONFIGURATIONS AS SHOWN ON DETAIL 1/M-401.
   - COIL CONNECTION LEFT/RIGHT HAND AS SHOWN ON THE PLANS. COORDINATE WITH CONTRACTOR.
   - ELECTRIC 2-10V ACTUATOR ON F&B COIL
   - COPPER HEADER ON F&B COIL
   - MERV 8 PREFILTER WITH MERV 13 FINAL FILTER SECTION S
   - VFD WITH EXTERNAL BYPASS. VFD AND ENCLOSURE TO BE SHIPPED LOOSE. ENCLOSURE TO BE LOCKABLE AND VENTILATED. VFD IS FOR SOFT START AND SPEED ADJUSTMENTS FOR TAB ONLY.

### JCI XTI MODEL MFR

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### MERV 8 PREFILTER WITH MERV 13 FINAL FILTER SECTION S

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<tbody>
<tr>
<td>PROVIDE WITH THE FOLLOWING FEATURES, OPTIONS AND ACCESSORIES:</td>
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<tr>
<td>- SINGLE POINT POWER CONNECTION WITH FACTORY DISCONNECT.</td>
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<tr>
<td>- FACTORY PRE-CHARGED, INSULATED REFRIGERANT LINE SET.</td>
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<td>- WIND BAFFLES</td>
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### EXHAUST FAN SCHEDULE

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### SUPPLY FAN SCHEDULE

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<th>VOLTS</th>
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<td>208/3</td>
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<th>MFR</th>
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<th>OUT.WC.</th>
<th>VOLTS</th>
<th>PHASE</th>
<th>HP</th>
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<td>150</td>
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<td>150</td>
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<td>1100</td>
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<tr>
<td>PROVIDE WITH THE FOLLOWING FEATURES, OPTIONS AND ACCESSORIES:</td>
</tr>
<tr>
<td>- PROVIDE ONE SPARE SET OF FILTERS.</td>
</tr>
<tr>
<td>- SINGLE ACCESS DOOR, RIGHT/LEFT SIDE AS SHOWN ON PLANS. COORDINATE WITH CONTRACTOR.</td>
</tr>
<tr>
<td>- GASKET SEAL BAG-IN BAG-OUT</td>
</tr>
<tr>
<td>- 12&quot; DEEP PARTICULATE FILTER</td>
</tr>
<tr>
<td>- FACTORY DISCONNECT.</td>
</tr>
<tr>
<td>- PIEZO RING FACTORY INSTALLED. TRANSDUCER BY THE D DC CONTROL CONTRACTOR. SEE M-601.</td>
</tr>
<tr>
<td>- INLET/OUTLET CONFIGURATION AS INDICATED ON THE PLANS. COORDINATE WITH CONTRACTOR.</td>
</tr>
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</table>

### JCI 12.5 TON TWIN CITY DSI 165A 3.0 208/3

<table>
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<tr>
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### RE-BID - DODGEN RESEARCH FACILITY (0074)

<table>
<thead>
<tr>
<th>NUCLEAR SCIENCE CENTER HVAC RENOVATION</th>
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### MECHANICAL EQUIPMENT SCHEDULES

<table>
<thead>
<tr>
<th>SHEET</th>
<th>M-002</th>
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POOL
UNEXCAVATED
UNEXCAVATED

OPEN TO BELOW
DEMO FILTER HOUSING. FILTERS REMOVED AND HOUSING DECONTAMINATED AHEAD OF TIME BY WSU. DECON REPORT AVAILABLE ON REQUEST.

(E) EXHAUST UP TO F-2 IN PENTHOUSE

WASHINGTON STATE UNIVERSITY

GROUNDFLOOR LEVEL - HVAC - DEMO

SCALE: 1/4" = 1'-0"
1. Remove all controls (electric, pneumatic) including tubing, devices, etc. associated with the equipment being removed, including back to the control panel in the pool room.

2. Remove all supports associated with equipment to be removed.

GENERAL NOTES:

- All dimensions are in inches.
- All reference letters and numbers are shown on the separate bill of materials.
- All equipment is subject to change without notice.

DESIGN FIRM:

CONSULTANTS:

PROVISIONAL STAMP:

RE-BID SET 8/1/23

RESEARCH FACILITY (0074)
NUCLEAR SCIENCE CENTER HVAC RENIAL

M-102

PENTHOUSE LEVEL - HVAC - DEMO

SCALE: 1/4" = 1'-0"

WASHINGTON STATE UNIVERSITY
DEMO STEAM AND CONDENSATE PIPING BACK TO WALL. REMAINING PIPING TO BE RECONNECTED.

DEMO STEAM COIL AND ALL ASSOCIATED PIPING, COMPONENTS, SUPPORTS, ETC.

(E) PLUMBING AND CONCRETE PAD

RE-BID - DODGEN RESEARCH FACILITY (0074) NUCLEAR SCIENCE CENTER HVAC RENEWAL

PENTHOUSE LEVEL - PIPING DEMO

SCALE 1/4" = 1'-0"
DEMO SECTION OF EXHAUST DUCT DOWN THROUGH ROOF TO ACCOMMODATE NEW WORK.

STRUCTURE BELOW CUT ROOF OPENING BETWEEN STRUCTURE TO INSTALL NEW F-4 AND REMOVE EXISTING EQUIPMENT.
ROUTE 1-1/4" LPR ALONG FLOOR. SLOPE AWAY FROM THE COIL CONNECTION.

PIPING SHALL NOT INTERFERE WITH ACCESS. RUN CONDENSATE TIGHT TO BASE RAIL.

REFRIGERANT LINESET UP THROUGH ROOF TO CU-4. SIZE PER MANUFACTURER.

ROUTE 2-1/2" LPS OVERHEAD ALONG THE BOTTOM OF STRUCTURE WITH NO VERTICAL OFFSETS. SLOPE TOWARDS COIL CONNECTION.

ROUTE 1" AC CONDENSATE DOWN TO SINK IN ROOM BELOW. SEE DETAILS 1&2/M-402.

RECONNECT ARGON SAMPLING PIPE (1" PVC) TO EXHAUST STACK. ROUTE OVERHEAD.
POOL ROOM VENTILATION SYSTEM DIAGRAM - NEW

**NOTE:**
- **Commercial Stack**
- **New Motors**
- **Existing Dampers**

**New Motors**
- Class 1A Ultra-Low Leakage

**Existing Dampers**
- Manual

**New Damper Parameters**
- Fastest Possible Run Time (40 seconds to open, <20 seconds to close)

**Control Modes**
- **Auto**
- **Dilute**
- **Isolate**

**Control of Elements**
- Electric Controls with No DDC Interface

**Matrix Illustrates**
- Status of Fans and Dampers in Different Modes
- ControlsEle

**Dampers**
- **D-1**
- **D-2**
- **D-3**
- **D-4**
1. **GENERAL NOTES**

DCD and electrical control contractors shall maintain coordination and communication between mechanical and electrical control system designers.

- All equipment shall be coordinated and locally monitored for proper operation.
- All electrical control system designs shall be coordinated with the mechanical control contractor.

2. **TEMPERATURE CONTROL**

- General Notes:
  - Temperature control shall be through the use of DDC and electrical systems.
  - All temperature control systems shall be supervised and monitored by the mechanical control contractor.

- Key Notes:
  - All temperature control systems shall be designed to maintain the room temperature at the setpoint.
  - Any deviation from the setpoint shall be alarmed immediately.

3. **SEQUENCE OF OPERATION**

- Upon a call for heat from the space, the steam valve shall open 100% and the face damper shall open to bypass the coil.
- If the supply air temp falls below 50 degrees, a low temp alarm shall be generated, the damper shall modulate to maintain space temperature.
- Upon a call for cooling, the condensing unit shall be started and the coil valve shall modulate to maintain the room temperature at the setpoint.

4. **ELECTRICAL CONTROLS**

- Electrical control systems shall be designed to maintain the room temperature at the setpoint.
- All electrical control systems shall be supervised and monitored by the electrical control contractor.

- Special Notes:
  - All electrical control systems shall be supervised and monitored by the electrical control contractor.
  - All electrical control systems shall be designed to maintain the room temperature at the setpoint.

5. **COORDINATION**

- All electrical control systems shall be coordinated with the mechanical control contractor.
- All electrical control systems shall be designed to maintain the room temperature at the setpoint.

6. **OPERATING ENVIROMENT**

- All electrical control systems shall be designed to maintain the room temperature at the setpoint.
- All electrical control systems shall be supervised and monitored by the electrical control contractor.

7. **PARAMETERS**

- All electrical control systems shall be designed to maintain the room temperature at the setpoint.
- All electrical control systems shall be supervised and monitored by the electrical control contractor.

8. **RATING SYSTEMS**

- All electrical control systems shall be designed to maintain the room temperature at the setpoint.
- All electrical control systems shall be supervised and monitored by the electrical control contractor.

9. **SECURITY**

- All electrical control systems shall be designed to maintain the room temperature at the setpoint.
- All electrical control systems shall be supervised and monitored by the electrical control contractor.

10. **PERMISSIONS**

- All electrical control systems shall be designed to maintain the room temperature at the setpoint.
- All electrical control systems shall be supervised and monitored by the electrical control contractor.

11. **VERIFICATION**

- All electrical control systems shall be designed to maintain the room temperature at the setpoint.
- All electrical control systems shall be supervised and monitored by the electrical control contractor.

12. **CONCLUSION**

- All electrical control systems shall be designed to maintain the room temperature at the setpoint.
- All electrical control systems shall be supervised and monitored by the electrical control contractor.
1. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL ELECTRICAL EQUIPMENT UNLESS NOTED OTHERWISE.

2. REMOVE CONDUCTORS BACK TO OVERCURRENT PROTECTIVE DEVICE OR TO UPSTREAM DEVICE TO REMAIN. MAINTAIN CIRCUITING/CONTINUITY TO EXISTING TO REMAIN DEVICES NOT AFFECTED BY DEMOLITION. CONCEALED CONDUIT MAY REMAIN AND BE ABANDONED IN PLACE. SURFACE/EXPOSED CONDUIT TO BE REMOVED IF NO LONGER UTILIZED.

3. PROVIDE CUTTING AND PATCHING AS REQUIRED.

4. IF A PIECE OF EQUIPMENT OR DEVICE IS TO BE REPLACED, CONTRACTOR SHALL RECONNECT ALL EXISTING CONNECTIONS.

GENERAL NOTES

EXISTING MECHANICAL UNIT TO BE REMOVED.

DISCONNECT AND REMOVE ALL ASSOCIATE WIRING, CONDUIT, DISCONNECTS, ETC.

EXISTING TO REMAIN EQUIPMENT TO BE RE-CONNECTED FROM (E) MCC TO NEW PANEL 'M1'.

CONTACTOR TO REMOVE/DEMOLISH ALL CONDUIT/CONDUCTORS ONCE SWITCH OVER IS COMPLETE IF NOT REUSED. SEE E-202.

EXISTING 'MCC' TO BE REMOVED ONCE ALL LOADS HAVE BEEN SWITCHED OVER TO NEW PANEL 'M1'.

KEY NOTES

EXISTING EQUIPMENT TO BE REMOVED.

DISCONNECT AND REMOVE ALL ASSOCIATED WIRING, CONDUIT, DISCONNECTS, ETC.

EXISTING TO REMAIN EQUIPMENT TO BE REMOVED/DEMOLISHED ONCE SWITCH OVER IS COMPLETE IF NOT REUSED. SEE E-202.

EXISTING WIRING TO BE REMOVED AFTER ALL LOADS HAVE BEEN SWITCHED OVER TO NEW PANEL 'M1'.
KEY NOTES

1. OPEN TO BELOW

RE-USE EXISTING 500A 3-POLE BREAKER IN EXISTING SWITCHBOARD NO. 70-5-07

RE-BID SET 8/1/23

RE-BID - DODGEN RESEARCH FACILITY (0074)
NUCLEAR SCIENCE CENTER HVAC RENEWAL

1507-2022

N SCALE: 1/4" = 1'-0"

BASEMENT & GROUND LEVEL - POWER - NEW

E-201
PROVIDE NEW NEMA 1/30/3 LOCAL MOTOR DISCONNECT WITH LOCK OUT / TAG OUT PROVISION.

PROVIDE NEW NEMA 1/60/3 LOCAL MOTOR DISCONNECT WITH LOCK OUT / TAG OUT PROVISION.

ROUTE THROUGH NEW STARTER LOCATED ON NEW RACK. PROVIDE NEMA SIZE 0 STARTER. RE: E-401-1,2

ROUTE THROUGH NEW STARTER LOCATED ON NEW RACK. PROVIDE NEMA SIZE 1 STARTER. RE: E-401-1,2

ROUTE THROUGH NEW STARTER LOCATED ON NEW RACK. PROVIDE NEMA SIZE 2 STARTER. RE: E-401-1,2

LOAD TO BE FIELD VERIFIED. LOAD IS ASSUMED TO BE 1 HP. CONTRACTOR TO NOTIFY EOR IF LOAD IS LARGER.

PULL BACK EXISTING MCC FEEDER TO EXISTING J-BOX. INTERCEPT AND EXTEND EXISTING 500A FEEDER TO NEW PANEL(S) M1 & M2 ONCE ALL LOADS HAVE BEEN TRANSITIONED OFF OF EXISTING MCC TO NEW PANEL(S) 'M1' AND 'M2'. PROVIDE NEW SPLICE BOX ABOVE EXISTING J-BOX.

VFD IS OWNER FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO MAKE FINAL CONNECTION(S).

PROVIDE BELDEN #29505 BETWEEN VFD AND MOTOR.

KEY NOTES

1. PROVIDE NEW NEMA 1/30/3 LOCAL MOTOR DISCONNECT WITH LOCK OUT / TAG OUT PROVISION.
2. PROVIDE NEW NEMA 1/60/3 LOCAL MOTOR DISCONNECT WITH LOCK OUT / TAG OUT PROVISION.
3. ROUTE THROUGH NEW STARTER LOCATED ON NEW RACK. PROVIDE NEMA SIZE 0 STARTER. RE: E-401-1,2
4. ROUTE THROUGH NEW STARTER LOCATED ON NEW RACK. PROVIDE NEMA SIZE 1 STARTER. RE: E-401-1,2
5. ROUTE THROUGH NEW STARTER LOCATED ON NEW RACK. PROVIDE NEMA SIZE 2 STARTER. RE: E-401-1,2
6. LOAD TO BE FIELD VERIFIED. LOAD IS ASSUMED TO BE 1 HP. CONTRACTOR TO NOTIFY EOR IF LOAD IS LARGER.
7. PULL BACK EXISTING MCC FEEDER TO EXISTING J-BOX. INTERCEPT AND EXTEND EXISTING 500A FEEDER TO NEW PANEL(S) M1 & M2 ONCE ALL LOADS HAVE BEEN TRANSITIONED OFF OF EXISTING MCC TO NEW PANEL(S) 'M1' AND 'M2'. PROVIDE NEW SPLICE BOX ABOVE EXISTING J-BOX.
8. VFD IS OWNER FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO MAKE FINAL CONNECTION(S).
9. PROVIDE BELDEN #29505 BETWEEN VFD AND MOTOR.
CONTROL SCHEMATIC - RELAY PANEL 'RP-1'
1. PROVIDE A MINIMUM OF (3) SPARE LIGHTS/BULBS OF EACH TYPE/COLOR.

2. PROVIDE A MINIMUM OF (2) EACH SPARE REPLACEMENT PUSHBUTTON(S).

NOT TO SCALE

EXISTING POOL ROOM VENTILATION SYSTEM
DISPLAY DIAGRAM GRAPHIC

NEW POOL ROOM VENTILATION SYSTEM DISPLAY DIAGRAM GRAPHIC

NOTE:

EXISTING POOL ROOM VENTILATION SYSTEM

KEYED NOTES

MARK DATE DESCRIPTION

PH 509-335-5571 Facilities Services