CITY OF DULUTH
LAKEWOOD WATER TREATMENT PLANT HEATING, VENTILATION, AND COOLING SYSTEM IMPROVEMENTS - ENGINEERING DIVISION

LOCATION: DULUTH, MN
CONSTRUCTION PLANS FOR: LAKEWOOD WATER TREATMENT PLANT
CITY PROJECT NUMBER: 1340

WARNING
LOCATION OF UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR
GOPHER STATE ONE CALL
CALL BEFORE DIGGING, 1-800-252-1166
REQUIRED BY LAW

NOTE:
UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE AND CONTRACTOR SHALL HAVE APPROPRIATE UTILITY MARK EXACT LOCATIONS PRIOR TO CONSTRUCTION.
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

SITE LOCATION MAP
NOT TO SCALE
GENERAL NOTE:
1. THE CONTRACTOR ACTIVITIES SHALL NOT INFRINGE ON THE OPERATIONS OR ACCESS OF THE WTP.
2. THE CONTRACTOR SHALL FURNISH, MAINTAIN, REMOVE STRAIN LOSS TO CONTAIN EROSION TO DISTURBED AREAS.
3. THE CONTRACTOR SHALL FURNISH AND MAINTAIN WASHDOWN TANK FOR SITE TOOL WASHING, ETC.
4. THE CONTRACTOR SHALL FURNISH AND MAINTAIN SANITARY FACILITIES FOR CONSTRUCTION STAFF.
5. EFFORTS MADE IN THE PREPARATION OF THE CONTRACT DOCUMENTS TO COORDINATE CONNECTIONS WITH ALL DISCIPLINES; HOWEVER THE GC IS RESPONSIBLE TO REVISEENTIRE PLANS AND THE SPECIFICATIONS AND INCLUDE ALL WORK REQUIRED TO PROVIDE A COMPLETE PROJECT.
6. OBSERVE APPLICABLE CODE REQUIREMENTS FOR ELECTRICAL INSTALLATIONS WITHIN HAZARDOUS AREAS NOTED ON PLAN.
7. COORDINATE EXACT LOCATION OF ALL EQUIPMENT AND FIXTURES WITH GC, OWNER, AND ENGINEER PRIOR TO ROUGH-IN.
8. CONTRACTOR SHALL REVIEW TYPICAL DECALS AND ALL CONSTRUCTION SHALL COMPLY WITH ALL TYPICAL DRAWINGS AND SPECIFICATIONS.
9. CONTRACTOR STAGING, STORAGE, AND PARKING SHALL BE CONTAINED WITHIN THE CONSTRUCTION SITE OR THE THE STAGING AREA.
10. ALL DISTURBED AREAS NOT OTHERWISE SURFACED SHALL BE TOPSOIL (6" MINIMUM), SEEDED, FERTILIZED, AND MULCHED.
11. CONTRACTOR SHALL PROVIDE, MAINTAIN, AND REMOVE STRAW LOGS TO CONTAIN EROSION TO DISTURBED AREAS.
12. CONTRACTOR SHALL PROVIDE AND MAINTAIN WASH DOWN TANK FOR SITE TOOL WASHING, ETC.
13. CONTRACTOR SHALL PROVIDE AND MAINTAIN SANITARY FACILITIES FOR CONSTRUCTION STAFF.
14. CONTRACTOR SHALL PROVIDE REMOVAL OF ALL ITEMS NOT USED BY THE NEW FACILITY.
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FLOOR PENETRATION DETAIL

SECTION THROUGH FLOOR PENETRATION
PLAN NOTES

1. EXISTING ROOF FAN TO REMAIN
2. ROOF MOUNTED GUARDRAIL - SEE DETAIL 1/A4
3. EXISTING ROOF MEMBRANE AND INSULATION TO BE REMOVED TO PRECAST CONCRETE SLACK AT GUARDRAIL MOUNTING LOCATIONS
4. ALIGN CENTER LINES OF NEW GUARDRAIL AND EXISTING FAN
5. EXISTING BUILT-UP ROOF W/ PEA GRAVEL

ALUMINUM GUARDRAIL DETAIL, TYP

1. 1 1/2" DIA HOLES
2. ALUMINUM GUARDRAIL DETAIL, TYP

POST MOUNTING DETAIL

1. 5'-0" TYP (6'-0" MAX)
2. 1 1/2" DIAMETER GUARDRAIL
3. 5'-0" TYP (6'-0" MAX) FOR POST CONNECTION

ROOF MOUNTED GUARDRAIL - SEE DETAIL 1/A4

1. BITUMINOUS FLASHING SYSTEM
2. EXISTING PRECAST CONCRETE PLANK
3. NEW INSULATION TO MATCH EXISTING
4. CONCRETE DECK AT GUARDRAIL MOUNTING LOCATIONS
5. EXISTING BUILT-UP ROOF W/ PEA GRAVEL

PLAN VIEW

1. EXISTING ROOFING
2. NEW INSULATION TO MATCH EXISTING
3. TYPE AND THICKNESS
4. ALUMINUM GUARDRAIL DETAIL, TYP
5. POST MOUNTING DETAIL

KEY PLAN

1. ROOF PLAN
2. ROOF MOUNTED GUARDRAIL - SEE DETAIL 1/A4
3. ALUMINUM GUARDRAIL DETAIL, TYP
4. POST MOUNTING DETAIL

FOR POST CONNECTION

1. 5'-0" TYP (6'-0" MAX)
2. 1 1/2" DIAMETER GUARDRAIL
3. 5'-0" TYP (6'-0" MAX) FOR POST CONNECTION

RAILINGS SHALL BE DESIGNED BY MANUFACTURER TO MEET THE FOLLOWING:

- INTERMEDIATE RAIL: 50 PLF APPLIED IN ANY DIRECTION
- TOP RAIL:
  - A SINGLE CONCENTRATED LOAD OF 200 POUNDS AT ANY POINT
  - 50 PLF APPLIED IN ANY DIRECTION
- CONNECTIONS SHALL BE DESIGNED BY MANUFACTURER

PLAN VIEW

1. ALUMINUM GUARDRAIL DETAIL, TYP
2. POST MOUNTING DETAIL
3. ALUMINUM GUARDRAIL DETAIL, TYP
4. POST MOUNTING DETAIL
5. ALUMINUM GUARDRAIL DETAIL, TYP

E Q

SECTION A-A

8"

5"
STOOP DETAIL

1. STOOP IS A STRUCTURAL SLAB. THEREFORE, REINFORCEMENT AND SLAB THICKNESS ARE CRITICAL.

NOTE:
- NOT USED
- CAST IN-FILL
- 1/2" CAP PLATE FULLY WELDED TO HORIZONTAL TIP
- INSULATED HVAC DUCT (HVAC CONTRACTOR)

DUCT HEAD DETAIL

1. DUCT HEAD DETAIL
- 3/8" CAP PLATE FULLY WELDED TO HORIZONTAL TIP
- INSULATED HVAC DUCT (HVAC CONTRACTOR)

PARTIAL SECTION

1. PARTIAL SECTION
- 1/2" CAP PLATE FULLY WELDED TO HORIZONTAL TIP
- INSULATED HVAC DUCT (HVAC CONTRACTOR)

DUCTWORK SUPPORT DETAIL

1. DUCTWORK SUPPORT DETAIL
- 3/8" CAP PLATE FULLY WELDED TO HORIZONTAL TIP
- INSULATED HVAC DUCT (HVAC CONTRACTOR)

LINTEL (L-1) DETAIL

1. LINTEL (L-1) DETAIL
- 3/8" CAP PLATE FULLY WELDED TO HORIZONTAL TIP
- INSULATED HVAC DUCT (HVAC CONTRACTOR)
SECOND FLOOR NORTH DEMOLITION PLAN

GENERAL NOTES:
1. Contractor shall verify the current condition before proceeding.
2. Remove items indicated as removed.
3. Contractor is responsible for all cutting and patching required for demolition and installation of new work. All new work shall match existing surfaces.
4. Where equipment, lighting, and cabinets are removed, new work is required to match existing surfaces. Coordinate with new construction plans.
5. Where equipment is indicated to be removed, also remove all associated piping and controls.
6. Where piping and equipment is indicated to be removed, also remove and replace all associated hangers and supports.
7. Coordinate with other trades.
**GENERAL NOTES**

1. Maintain minimum of 18" clearance in front of and behind all electrical panels.

2. Seal all duct and pipe openings into exterior wall insulation.

3. Pipe unions from wall branch for clients only. Securely fasten piping on walls where possible.

4. Provide shutoff valves on all branch piping.

5. Mount all motors on fan units with bottom at 6 ft. A.G.E. and all vertical fan units mounting at 10 ft. A.G.E.

6. Provide shutoff valves at each branch to be coordinated with other services.

7. Seal all pipe penetrations of chemical room walls.

8. All equipment connections to be made with unions unless otherwise specified.

9. Provide additional submittal piping support devices as required for smaller piping. Coordinate with field engineer. Maintain access and service clearance.

10. All branch heating water supply and return piping to and between ancillary units is required to be 3/4" copper unless otherwise noted.

11. Provide manual air vents in heating water system at all high points of rise.

12. Provide new shut-off valves, balancing valves, and other valves in all branch piping to be made and installed in field.

13. Provide vacuum breaker and backflow preventer for system.

**NUMBERED NOTES**

1. Insulate existing 2" non-positive (NP) water piping.

2. Make connection of new 3/4" and 1" unit to existing 1/2" main.

3. Insert appropriate flow control valve. Flow as indicated or as scheduled for equipment reuse.

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**FIRST FLOOR NORTH HEATING/Cooling PLAN**
GENERAL NOTES

1. ALL ROUND EXPOSED DUCTWORK WITHIN FILTER ROOM TO BE TYPED 20" x 20" ALUMINUM PIPING DUCT WITH TYPE 200 STAINLESS STEEL SUPPORTS AND HANGERS. HOSE-PIPE HANGERS MUST COMPARE WITH HEATER HOUSING PER EQUIPMENT

ENLARGED SECOND FLOOR PLAN

CITY OF DULUTH
LAKEWOOD, MN

LAKEWOOD WTP HVAC SYSTEM IMPROVEMENTS

ductwork plan
second floor south
enlarged second floor plan
SECOND FLOOR NORTH DUCTWORK PLAN

KEY PLAN - SECOND FLOOR

GENERAL NOTES

1. Coordinate all roofing work with roofing sub-contractor.

NUMBERED NOTES

1. Provide curb adaptor as required for HD exhaust fan. Header must be required.
CONTRACTOR TO COORDINATE INSTALLATION
OF ALL-OF-THE AND OUTSIDE AIRS WITH
EXISTING DUCTWORK IN MECHANICAL ROOM
1. PROVIDE PROTECTIVE LOADED CELL DAMPER SHOVELS ON EDGES
OF ALL DUCTWORK 2 retain a LEFT
2. VERIFY EACH SIDE OF ALL NEW AIRFLOW DAMPERS INSTALLED
IN EXISTING DUCTWORK AND EQUIPMENT.
3. CONTRACTOR TO PROVIDE NEW 3" CONCRETE PAD FOR MOTOR.

MECHANICAL ROOM PARTIAL PLAN

GENERAL NOTES

SECTION

SCALE

DRAWN BY:

CHECKED BY:

PROJECT NO.:

PROJECT DATE:

FILE NO.

SHEET

BY

THOMAS A. WENTZ

LAKEWOOD, MN

CITY OF DULUTH

LAKEWOOD WTP HVAC SYSTEM IMPROVEMENTS

M5.1

MECHANICAL ROOM PARTIAL PLAN
EXISTING RAPID MIX ROOM SAMPLE PUMPS AND PIPING

M5.5.1

DESTRUCTION NOTES
1. CONTRACTOR SHALL VERIFY SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS PRIOR TO REVISION.
2. REMOVE FIRE HOSES AS MANDATED.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND FABRICATION REQUIRED FOR TERMINAL AND INTEGRATION OF MECHANICAL ITEMS.
4. ALL NEW PIPING SHALL MATCH EXISTING SURFACES.
5. WHERE EQUIPMENT IS REPLACED, REMOVE ALL ASSOCIATED PIPING AND DUCTWORK.
6. REMOVE AND REPLACE ALL ASSOCIATED HANGERS AND SUPPORTS.
7. COORDINATE DEMO WORK WITH OTHER TRADES.

GENERAL NOTES
1. REMOVE AND REPLACE EXISTING SAMPLE TANKS, ASSOCIATED PIPING AND SUPPORTS AS REQUIRED FOR INSTALLATION OF NEW TANKS.
2. SAMPLE TANKS AND PIPING CAN BE LOCATED TO NORTH END OF EXISTING TANKS.
3. EXTEND PIPING AS REQUIRED TO NEW LOCATION.
4. PERMANENTLY SHUTDOWN ALL NON-FUNCTIONING PIPING.
5. NOTIFY-field ENGINEER AND CITY'S REPRESENTATIVE.
6. SEE SHEET 7 FOR ADDITIONAL INFORMATION ON NEW DOOR AND STAIR INSTALLATION.
**EXHAUST FANS**

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**ENERGY RECOVERY VENTILATORS**

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**AIR HANDLING UNITS — MODULAR**

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**MOTORIZED DAMPERS**

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**VAV CONTROL UNITS**

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### Finned Tube Radiation

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### Hot Water Unit Heaters

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### Air Separators

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### Expansion Tanks

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* Notes on: Details on equipment.
KEY NOTES:

1. RELOCATE EXISTING SAMPLE PUMPS: SP-1, SP-2
2. RELOCATE AND RECONFIGURE SAMPLE PIPING TO ACCOMMODATE THE NEW DOOR AND ACCESS STAIRS
3. RELOCATE SP-1, CONNECT (TYP), RELOCATE ELECTRICAL CONNECTIONS
4. RELOCATE SP-2, CONNECT (TYP), RELOCATE ELECTRICAL CONNECTIONS
5. RELOCATE EXISTING 8'' DRAIN LINE VERTICALLY TO ACCOMMODATE NEW BOILER ROOM ACCESS (5) 96'' FLARES, NEW 8'' DRP, NEW CORROSION RESISTANT HANGERS AND SUPPORTS, PIPING SHALL BE PAINTED AND LABELED
6. OFFSET AND SUPPORT EXISTING 8'' DRAIN LINE, RECONNECT TO EXISTING PIPE (COMPLETE)

RELOCATED AND RECONFIGURED SAMPLE PIPING TO ACCOMMODATE THE NEW DOOR AND ACCESS STAIRS

RELOCATE EXISTING 8'' DRAIN LINE VERTICALLY TO ACCOMMODATE NEW BOILER ROOM ACCESS

OFFSET AND SUPPORT EXISTING 8'' DRAIN LINE, RECONNECT TO EXISTING PIPE (COMPLETE)
1. Relocate existing sample pumps (SP-1, SP-2).
2. New fabricated galvanized steel pump shelf w/ drip pan.
5. Relocate and reconfigure sample piping to accommodate the new door and access stairs.
6. Relocate existing P-1 drain line vertically to accommodate new boiler room access door/hinged adapter (US MFL). M&B. New 8" SP PVC o sewer to assist in. Hangers and supports. Piping shall be painted and labeled.
7. Offset and support existing 8" P-1 drain line. Reconnect to existing pipe. (Complete).
8. Offset and support existing 8" dip drain line. Reconnect to existing pipe. (Complete).

**Key Plan - First Floor**

**Key Notes:**
- XXX

**Legend:**
- Dry/ Corrosive Area
- Dry/ Non-Hazardous Area
- Wet/ Non-Hazardous Area

**Scale:** 1/8" = 1'-0" (22x34)
GENERAL NOTES:
1. Diagrams are in intent. The contractor shall verify actual piping and relocate all piping and equipment as required for construction of new door and stairs.
2. New sampling piping shall be copper.
3. New sampling piping shall not be insulated.

EXISTING SAMPLE PUMP PIPING DIAGRAM- REMOVAL
NOT TO SCALE

PROPOSED SAMPLE PUMP PIPING DIAGRAM
NOT TO SCALE

SYMBOLS

PLUG
CHECK VALVE
UNION
NEEDLE VALVE
BALL VALVE

EXISTING PUMP SHELF TO BE DEMOLISHED
EXISTING DRAIN LINE TO BE RELOCATED
EXISTING SAMPLE PUMP SHELF TO BE DEMOLISHED
EXISTING DRAIN GUTTER

RELOCATED DRAIN LINE UP TO 12" CORE AND GROUT WALL BELOW

EXTEND LINES ABOVE OR BELOW NEW DOOR AND STAIRS AS NEEDED

NEW PVC DRAIN LINE AND CONNECT TO EXISTING DRAIN. NEW LINE SHALL SLOPE TO DRAIN

NEW DOOR
BUILDING CORNER

GENERAL NOTES:
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BUILDING CORNER

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2. New sampling piping shall be copper.
3. New sampling piping shall not be insulated.
OFFSET 4" DIP DRAW TO ACCOMMODATE NEW BOILER ROOM ACCESS

RECONFIGURE SAMPLE PIPING AND SAMPLE PUMPS AS REQ'D
PROVIDE SEPARATE CONDUITS FOR THE FOLLOWING:

- 4-20mADC
- 120 VOLT CONTROL
- 120 VOLT POWER
- 480 VOLT POWER
- LOW VOLTAGE INSTRUMENTATION
- COMMUNICATION

SIZE CONDUIT PER NEC. MINIMUM SIZE 3/4".

PROCESS NOTES:

- REFER TO SPECIFICATION 16900 FOR DETAILS ON VARIOUS LOOP FUNCTIONS AS WELL AS DETAILS REGARDING OPERATOR INTERFACE FUNCTIONS.
- REFER TO DIVISION 11000, 13000, 15000 FOR ADDITIONAL DETAILS REGARDING INSTRUMENTATION AND CONTROL EQUIPMENT FURNISHED UNDER THOSE SPECIFICATIONS.

WIRING & CONDUIT (TYPICAL)

1. USE CONDUCTORS, MATERIALS & SIZES PER SHOWN.
2. PROVIDE SEPARATE CONDUITS FOR THE FOLLOWING:
3. SIZE CONDUIT PER NEC. MINIMUM SIZE 3/4".
4. REFER TO DIVISION 11000, 13000, 15000 FOR ADDITIONAL DETAILS REGARDING INSTRUMENTATION AND CONTROL EQUIPMENT FURNISHED UNDER THOSE SPECIFICATIONS.
5. 1-1/2" = NUMBER OF WIRES AND SIZE OF WIRE REQUIRED, WHEREAS:
6. 1 = ONE WIRE
7. 1-1/2" = THE SIZE OF WIRE REQUIRED
8. #12 = THE SIZE OF WIRE REQUIRED
9. G = GROUND WIRE
10. REFER TO DRAWINGS FOR REQ'D WIRE AND CONDUIT SIZES AND AMOUNTS
11. (X) = ONE CONDUIT
12. 1-1/2" = THE SIZE OF CONDUIT REQUIRED
13. (X) #12 & #12G = NUMBER OF WIRE(S) REQUIRED, WHEREAS:
14. (X) 1-1/2" = NUMBER OF CONDUIT(S) REQUIRED

ELECTRICAL SYMBOLS, & ABBREVIATIONS

- ELECTRICAL SYMBOLS, & ABBREVIATIONS
- 00616097
- LAKEWOOD, MN
- CITY OF DULUTH
- LAKEWOOD WTP HVAC SYSTEM IMPROVEMENTS
- PLOT DATE: 3/7/16
GENERAL NOTES:
1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DEMOLISH ALL EQUIPMENT, MATERIAL, ETC. RELATED TO ALL POWER CONNECTIONS, HVAC, CONTROLS, ETC. IT IS THE INTENT OF THE EC TO DEMOLISH ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:

1. EXISTING PF-4: REFER TO E-12
2. EXISTING WATER HEATER
3. EXISTING STORAGE CABINET TO BE DEMOLISHED
4. EXISTING AIR HANDLER TO BE DEMOLISHED
5. DISCONNECT ALL DEVICES
6. DEMO EXISTING CONDENSATION PUMP AND DEVICES
7. EXISTING PUNCH-DOWN PANEL TO REMAIN
8. DEMO EXISTING DISCONNECT AND FEEDER
9. EXISTING CONDENSATE UNIT MC TO BE DEMOLISHED
10. EXISTING CONDENSATE UNIT MC TO BE DEMOLISHED
11. EXISTING TEMPERATURE ALARM CONTROL PANEL
12. EXISTING LP-3A & 3B
13. EXISTING AC DISCONNECT TO BE DEMOLISHED
14. EXISTING AHU DISCONNECT/MC TO BE DEMOLISHED
15. EXISTING AHU DISCONNECT/MC TO BE DEMOLISHED
16. EXISTING VFD TO BE DEMOLISHED
17. EXISTING VFD TO BE DEMOLISHED
18. EXISTING VACUUM PUMP DISCONNECT TO BE DEMOLISHED
19. EXISTING AIR DRYER DISCONNECT TO BE DEMOLISHED
20. EXISTING VFD TO BE DEMOLISHED
21. EXISTING AHU DISCONNECT/MC TO BE DEMOLISHED
22. EXISTING VFD TO BE DEMOLISHED
23. EXISTING AHU DISCONNECT/MC TO BE DEMOLISHED
24. EXISTING VFD TO BE DEMOLISHED
25. EXISTING CONDENSATE UNIT MC TO BE DEMOLISHED
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33. EXISTING CONDENSATE UNIT MC TO BE DEMOLISHED
34. IDENTIFY, DISCONNECT AND RELOCATE EXISTING ELECTRICAL FOR CONSTRUCTION.
35. CONTRACTOR SHALL RELOCATE EXISTING ELECTRICAL TO ACCOMMODATE NEW HVAC.
36. REPLACE FIXTURES AS SCHEDULED.

WOMEN'S INSTRUCTIONS:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DEMOLISH ALL EQUIPMENT, MATERIAL, ETC. RELATED TO ALL POWER CONNECTIONS, HVAC, CONTROLS, ETC. IT IS THE INTENT OF THE EC TO DEMOLISH ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.
GENERAL NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, ETC. RELATED TO ALL POWER CONNECTIONS, CONTROL, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMO OF PREVIOUSLY MOUNTED MATERIALS, DEVICES, ETC.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:

1. DECOMMISSION, DISCONNECT, AND DEMOLISH EQUIPMENT COMPLETE (ALL CONNECTIONS), REMOVE CONTROL AND POWER CIRCUITS
2. DEMO EXISTING UNIT HEATER
3. EXISTING DAMPERS & ACTUATORS

GENERAL NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
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KEY NOTES:

1. DECOMMISSION, DISCONNECT, AND DEMOLISH EQUIPMENT COMPLETE (ALL CONNECTIONS), REMOVE CONTROL AND POWER CIRCUITS
2. DEMO POWER EXISTING REHEAT AND AIR HANDLING UNIT
3. DEMO POWER EXISTING ACTUATORS
4. DEMO POWER TO UNIT HEATER AND EQUIPMENT, DISCONNECTS AND FEEDERS
5. DEMO TEMP CONTROL PANEL

GENERAL NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT DIVISION OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT DESIGNED, MATERIALS, ETC RELATED TO ALL POWER CONNECTIONS. HVAC CONTRACTOR WILL BE RESPONSIBLE FOR DEMOLITION OF EQUIPMENT, MATERIALS, DEVICES, CONTROLS, ETC. AS SHOWN AND REQUIRED TO COMPLETE PROJECT.
4. JS SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

EXISTING MCC TO REMAIN BUT TO BE MODIFIED. REFER TO ONE LINE DIAGRAMS

EXISTING LV TO REMAIN RECONNECTED TO LP-L2

LP-L2 TO REMAIN TO BE MODIFIED AS REQUIRED

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4. DEMO, DISCONNECT, AND DEMOLISH EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:
1. DECOMMISSION, DISCONNECT, AND DEMOLISH EQUIPMENT COMPLETE (ALL CONNECTIONS), REMOVE CONTROL AND POWER CIRCUITS
2. DEMO / REPLACE EXISTING EF

KEY PLAN - SECOND FLOOR

WOMEN
DF

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1. REFER TO AND COORDINATE WITH M-DRAWINGS.

2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.

3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT DEVICES, MATERIALS, ETC RELATED TO ALL POWER CONNECTIONSennie HVAC SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION OF EQUIPMENT DEVICES, MATERIALS, ETC.

4. DEMO AND DISCONNECT ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:

1. DECOMMISSION, DISCONNECT, AND DEMOLISH EQUIPMENT COMPLETE (ALL CONNECTIONS) REMOVE CONTROL AND POWER CIRCUITS

2. DEMO EF

3. DEMO/REPLACE EF

4. DEMO DEHUMIDIFIER AND AIR HANDLING UNIT SYSTEM

5. EXISTING RTU TO REMAIN

GENERAL NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.

2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.

3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT DEVICES, MATERIALS, ETC RELATED TO ALL POWER CONNECTIONSennie HVAC SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION OF EQUIPMENT DEVICES, MATERIALS, ETC.

4. DEMO AND DISCONNECT ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

ROOF ELECTRICAL PLAN - REMOVALS

SCALE: 3/32" = 1'-0" (22x34"

SCALE: 3/64" = 1'-0" (11x17"

1. REFER TO AND COORDINATE WITH M-DRAWINGS.

2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.

3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT DEVICES, MATERIALS, ETC RELATED TO ALL POWER CONNECTIONSennie HVAC SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION OF EQUIPMENT DEVICES, MATERIALS, ETC.

4. DEMO AND DISCONNECT ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.
GENERAL NOTES:
1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DEMOLISH AND DISCONNECT ALL EQUIPMENT DEVICES, MATERIAL, ETC. RELATED TO ALL POWER, CONTROL, AND VARIOUS OTHER EQUIPMENT DEVICES, AS REQUIRED FOR COMPLETION OF PROJECT.
4. All DEMOLITION, DISCONNECT, AND REPLACEMENT OF ETC. IS TO BE PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

KEY NOTES:
- CONNECT POWER UH-12, FURNISH WITH DISCONNECT RATED PLUG/REC OR NEMA 4X PVC DISCONNECT SWITCH
- CONNECT POWER UH-13, FURNISH WITH DISCONNECT RATED PLUG/REC OR NEMA 4X PVC DISCONNECT SWITCH
- CONNECT POWER UH-14, FURNISH WITH DISCONNECT RATED PLUG/REC OR NEMA 4X PVC DISCONNECT SWITCH
- CONNECT POWER UH-15, FURNISH WITH DISCONNECT RATED PLUG/REC OR NEMA 4X PVC DISCONNECT SWITCH
- CONNECT POWER UH-16, FURNISH WITH DISCONNECT RATED PLUG/REC OR NEMA 4X PVC DISCONNECT SWITCH
- EXISTING XFMR LP-1A/B DISCONNECT TO BE DEMOLISHED
- DEMOLISH XFMR-L4
- DEMOLISH XFMR-LP/L
- EXISTING XFMR LP-1A&1B TO BE DEMOLISHED
- EXISTING SAMPLE PUMP AND ELECTRICAL TO BE RELOCATED REFER TO PM DRAWINGS
- IDENTIFY, DISCONNECT AND RELOCATE EXISTING ELECTRICAL FOR CONSTRUCTION NEW ACCESS DOORS AND STAIRS. REFER TO ARCH DRAWINGS
- CONNECT POWER UH-9, FURNISH WITH DISCONNECT RATED PLUG/REC OR NEMA 4X PVC DISCONNECT SWITCH
- CONNECT POWER UH-10, FURNISH WITH DISCONNECT RATED PLUG/REC OR NEMA 4X PVC DISCONNECT SWITCH
- CONNECT POWER UH-11, FURNISH WITH DISCONNECT RATED PLUG/REC OR NEMA 4X PVC DISCONNECT SWITCH
- CONNECT POWER UH-12, FURNISH WITH DISCONNECT RATED PLUG/REC OR NEMA 4X PVC DISCONNECT SWITCH
- DPX/4A
- LP-3A & 3B EXISTING WALL MOUNTED FIXTURE REFEED INTO EXISTING CIRCUITS
- LP-3A/B DEMOLISH LP-LP/L DISCONNECT
- NEW MOTION CONTROL SENSOR
- NEW BATTERY BU EXIT AND SPOTS
- NEW BATTERY BU EXIT SIGN
- NEW LP-3A/B DISCONNECT REFER TO E-19

FIRST FLOOR SOUTH HEATING/COOLING ELECTRICAL PLAN - PROPOSED
KEY NOTES:

1. CONNECT POWER UH-14, FURNISH WITH DISCONNECT RATED PLUG/REC SET OR NEMA 4X PVC DISCONNECT SWITCH

2. CONNECT POWER UH-13, FURNISH WITH DISCONNECT RATED PLUG/REC SET OR NEMA 4X PVC DISCONNECT SWITCH

3. CONNECT POWER UH-1, FURNISH WITH DISCONNECT RATED PLUG/REC SET OR NEMA 4X PVC DISCONNECT SWITCH

4. CONNECT POWER UH-2, FURNISH WITH DISCONNECT RATED PLUG/REC SET OR NEMA 4X PVC DISCONNECT SWITCH

5. CONNECT POWER UH-3, FURNISH WITH DISCONNECT RATED PLUG/REC SET OR NEMA 4X PVC DISCONNECT SWITCH

6. CONNECT POWER UH-4, FURNISH WITH DISCONNECT RATED PLUG/REC SET OR NEMA 4X PVC DISCONNECT SWITCH

GENERAL NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.

2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.

3. INTENT DESIGN OF DEMOLITION: IT IS THE INTENT OF THE EC TO DEMOLISH ALL EQUIPMENT, MATERIALS, DEVICES, ETC. RELATED TO POWER CONNECTIONS AND CONTROL HEADS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION OF EQUIPMENT, MATERIALS, DEVICES, ETC. RELATED TO ALL POWER CONNECTIONS AND CONTROL HEADS SHOWN AND REQUIRED TO COMPLETE PROJECT.

4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY PLAN - FIRST FLOOR

DRY/ CORROSIVE AREA

DRY/ NON-HAZARDOUS AREA

FIRST FLOOR NORTH HEATING/COOLING ELECTRICAL PLAN - PROPOSED
GENERAL NOTES:
1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT DIVISION OF DEMOLITION: IT IS THE INTENT OF THE EC SHALL DEMOLISH, DISCONNECT, AND REMOVE ALL EQUIPMENT, DEVICES, MATERIAL, ETC RELATED TO ALL POWER CONNECTIONS, VARIOUS AUXILIARY DEVICES, CONTROLS, ETC.
4. Scope of work includes installation of new equipment shown and required to complete project.

KEY NOTES:
1. FURNISH AND CONNECT WITH DISCONNECT EACH MOTOR AND CONNECTIONS WILL HAVE DISCONNECT PLUG SET.
2. FURNISH AND INSTALL NEW WTP-MDS-1. REFER TO TYP-10.
3. FURNISH AND INSTALL new WTP-MCC-A. REFER TO ONE-LINE.
4. FURNISH AND INSTALL NEW WTP-MCC-A. REFER TO ONE-LINE.

FIRST FLOOR SOUTH DUCTWORK ELECTRICAL PLAN - PROPOSED

SCALE: 1/8" = 1'-0" (22x34)
SCALE: 1/16" = 1'-0" (11x17)

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT DIVISION OF DEMOLITION: IT IS THE INTENT OF THE EC SHALL DEMOLISH, DISCONNECT, AND REMOVE ALL EQUIPMENT, DEVICES, MATERIAL, ETC RELATED TO ALL POWER CONNECTIONS, VARIOUS AUXILIARY DEVICES, CONTROLS, ETC.
4. Scope of work includes installation of new equipment shown and required to complete project.

KEY NOTES:
1. FURNISH AND CONNECT WITH DISCONNECT EACH MOTOR AND CONNECTIONS WILL HAVE DISCONNECT PLUG SET.
2. FURNISH AND INSTALL NEW WTP-MDS-1. REFER TO TYP-10.
3. FURNISH AND INSTALL new WTP-MCC-A. REFER TO ONE-LINE.
4. FURNISH AND INSTALL NEW WTP-MCC-A. REFER TO ONE-LINE.
GENERAL NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES. IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:

1. CONNECT POWER MD-4, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
2. CONNECT POWER MD-5, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
3. CONNECT POWER MD-6 & MD-7, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
4. FURNISH NEW CONDUIT AND FEEDERS IN THE CORROSIVE AREA

FIRST FLOOR NORTH DUCTWORK ELECTRICAL PLAN - PROPOSED

SCALE: 1/8" = 1'-0" (22x34)
SCALE: 1/16" = 1'-0" (11x17)

KEY NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES. IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

GENERAL NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES. IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:

1. CONNECT POWER MD-4, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
2. CONNECT POWER MD-5, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
3. CONNECT POWER MD-6 & MD-7, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
4. FURNISH NEW CONDUIT AND FEEDERS IN THE CORROSIVE AREA

FIRST FLOOR NORTH DUCTWORK ELECTRICAL PLAN - PROPOSED

SCALE: 1/8" = 1'-0" (22x34)
SCALE: 1/16" = 1'-0" (11x17)

KEY NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES. IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

GENERAL NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES. IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:

1. CONNECT POWER MD-4, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
2. CONNECT POWER MD-5, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
3. CONNECT POWER MD-6 & MD-7, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
4. FURNISH NEW CONDUIT AND FEEDERS IN THE CORROSIVE AREA

FIRST FLOOR NORTH DUCTWORK ELECTRICAL PLAN - PROPOSED

SCALE: 1/8" = 1'-0" (22x34)
SCALE: 1/16" = 1'-0" (11x17)

KEY NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES. IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

GENERAL NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES. IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:

1. CONNECT POWER MD-4, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
2. CONNECT POWER MD-5, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
3. CONNECT POWER MD-6 & MD-7, FURNISH WITH DISCONNECT-RATED PLUG/REC SET
4. FURNISH NEW CONDUIT AND FEEDERS IN THE CORROSIVE AREA

FIRST FLOOR NORTH DUCTWORK ELECTRICAL PLAN - PROPOSED

SCALE: 1/8" = 1'-0" (22x34)
SCALE: 1/16" = 1'-0" (11x17)

KEY NOTES:

1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES. IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT, MATERIALS, AND CONNECTIONS RELATED TO ALL POWER AND HEAT EXCHANGE DEVICES.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.
GENERAL NOTES:
1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT DIVISION OF DEMOLITION: IT IS THE INTENT OF THE EC TO DEMOLISH, DISCONNECT, AND COMMISSION ALL EQUIPMENT DEVICES, MATERIALS, ETC RELATED TO ALL POWER CONNECTIONS, HEAT, CONTROL, ETC. THE EC SHALL BE RESPONSIBLE FOR DEMO OF EQUIMENT, MATERIALS, DEVICES, CONTROLS, ETC.
4. SC SHALL SUPPORT DISCONNECTING, DECOMMISSIONING, AND DEMOLISHING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:
1. CONNECT POWER MD-1, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)
2. CONNECT POWER MD-2, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)
3. CONNECT POWER MD-3, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)
4. CONNECT POWER MD-4, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)
5. REFER T-16-16

KEY PLAN - SECOND FLOOR

WET/ CORROSIVE AREA

DRY/ NON-HAZARDOUS AREA

WET/ CORROSIVE AREA

SECOND FLOOR SOUTH DUCTWORK ELECTRICAL PLAN - PROPOSED

SCALE: 1/8" = 1'-0" (22x34)
SCALE: 1/16" = 1'-0" (11x17)

GENERAL NOTES:
1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT DIVISION OF DEMOLITION: IT IS THE INTENT OF THE EC TO DEMOLISH, DISCONNECT, AND COMMISSION ALL EQUIPMENT DEVICES, MATERIALS, ETC RELATED TO ALL POWER CONNECTIONS, HEAT, CONTROL, ETC. THE EC SHALL BE RESPONSIBLE FOR DEMO OF EQUIMENT, MATERIALS, DEVICES, CONTROLS, ETC.
4. SC SHALL SUPPORT DISCONNECTING, DECOMMISSIONING, AND DEMOLISHING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:
1. CONNECT POWER MD-1, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)
2. CONNECT POWER MD-2, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)
3. CONNECT POWER MD-3, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)
4. CONNECT POWER MD-4, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)
5. REFER TO 1/E-16

KEY PLAN - SECOND FLOOR

WET/ CORROSIVE AREA

DRY/ NON-HAZARDOUS AREA

WET/ CORROSIVE AREA

SECOND FLOOR SOUTH DUCTWORK ELECTRICAL PLAN - PROPOSED

SCALE: 1/8" = 1'-0" (22x34)
SCALE: 1/16" = 1'-0" (11x17)
EHC 2016 03/07

General Notes:
1. Refer to and coordinate with M-Drawings.
2. Demo all instrumentation, connections, and equipment as required for project completion.
3. Intent division of demolition: It is the intent of the EC shall decommision, disconnect, and demolish all equipment, devices, material, etc. related to all power connections and HVAC control. Contractor shall be responsible for demo of equipment, materials, devices, covers, etc. as required to complete project.
4. EC shall support disconnecting all equipment shown and required to complete project.

Key Notes:
1. Connect power EF-4, furnish with disconnect rated plug/rec set (typ)
2. Connect power EF-5, furnish with disconnect rated plug/rec set (typ)
3. Connect power EF-3, furnish with disconnect rated plug/rec set (typ)
4. Connect power EF-2, furnish with disconnect rated plug/rec set (typ)

Second Floor South Ductwork Electrical Plan - Proposed

Scale: 1/8" = 1'-0" (22x34)
Scale: 1/16" = 1'-0" (11x17)

General Notes:
1. Refer to and coordinate with M-Drawings.
2. Demo all instrumentation, connections, and equipment as required for project completion.
3. Intent division of demolition: It is the intent of the EC shall decommision, disconnect, and demolish all equipment, devices, material, etc. related to all power connections and HVAC control. Contractor shall be responsible for demo of equipment, materials, devices, covers, etc. as required to complete project.
4. EC shall support disconnecting all equipment shown and required to complete project.
GENERAL NOTES:
1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT DIVISION OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT DEVICES, MATERIALS, ETC RELATED TO ALL POWER CONNECTIONS. HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR DEMO OF EQUIPMENT MATERIALS, DEVICES, CONTROL ETC.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:

1. CONNECT POWER EF-1, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)

2. CONNECT POWER EF-6, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)

3. CONNECT POWER EF-7, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)

4. CONNECT POWER EF-8, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)

5. EXISTING ROOFTOP UNIT TO REMAIN. INTEGRATE PROPOSED TEMPERATURE CONTROL.

GENERAL NOTES:
1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT DIVISION OF DEMOLITION: IT IS THE INTENT OF THE EC TO DECOMMISSION, DISCONNECT, AND DEMOLISH ALL EQUIPMENT DEVICES, MATERIALS, ETC RELATED TO ALL POWER CONNECTIONS. HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR DEMO OF EQUIPMENT MATERIALS, DEVICES, CONTROL ETC.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:

1. CONNECT POWER EF-1, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)

2. CONNECT POWER EF-6, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)

3. CONNECT POWER EF-7, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)

4. CONNECT POWER EF-8, FURNISH WITH DISCONNECT RATED PLUG/REC SET (TYP)

5. EXISTING ROOFTOP UNIT TO REMAIN. INTEGRATE PROPOSED TEMPERATURE CONTROL.
GENERAL NOTES:
1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. INTENT DIVISION OF DEMOLITION: IT IS THE INTENT OF THE EC TO DEMOLISH, DISCONNECT, AND DEMONTE ALL EQUIPMENT, MATERIALS, DEVICES, CONTROL, ETC. The HVAC CONTRACTOR WILL BE RESPONSIBLE FOR DEMO OF EQUIPMENT, MATERIALS, DEVICES, CONTROL, ETC.
4. REFER TO SCHEDULES FOR WORK.

KEY NOTES:
1. MD-1 EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL.
2. MD-10 EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL.
3. MD-2 EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL.
4. VAV-1 EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL.
5. VAV-2 EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL.
6. DRY/ NON-HAZARDOUS AREA
7. TEMPERATURE CONTROL CABINET
8. DISCONNECTIONS SHALL BE DISCONNECT RATED PLUG REC. SET WALL DISCONNECT ARE SHOWN FOR CLARITY ONLY
9. LP-1A EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL
10. LP-1B EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL
11. LP-4A EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL
12. LP-4B EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL
13. AHU-1 EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL
14. H-1 EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL
15. H-2 EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL
16. B-1 EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL
17. B-2 EXISTING TO REMAIN, CONNECT SIGNALS FOR AUTOMATIC CONTROL

UPPER MECHANICAL ROOM ENLARGED PLAN

LOWER LEVEL BOILER ROOM ENLARGED PLAN - PROPOSED
GENERAL NOTES:
1. REFER TO AND COORDINATE WITH M-DRAWINGS.
2. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
3. IT IS THE INTENT OF THE EC TO DEMOLISH ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.
4. EC SHALL SUPPORT DISCONNECTING ALL EQUIPMENT SHOWN AND REQUIRED TO COMPLETE PROJECT.

KEY NOTES:
1. EXISTING EQUIPMENT, DEVICES, AND MATERIALS TO REMAIN.
2. EXISTING EQUIPMENT, DEVICES, AND CONNECTION MATERIALS COMPLETE. REUSE OF EXISTING CIRCUITS WILL BE ALLOWED WHEN THE EXISTING CIRCUITS DERIVE FROM AND TERMINATE IN CORRECT LOCATIONS.
3. REFER TO AND COORDINATE WITH M-DRAWINGS.
4. CONTROL BY MC.
5. REFER TO E-19 FOR INTERLOCKS PER MC.
6. REPLACE SERVICE CONDUCTORS 600-3G (PROPOSED)
7. FURNISH AND INSTALL NEW FEEDER.
8. FURNISH AND INSTALL NEW EQUIPMENT MATERIALS, WIRING, ETC. (COMPLETE).
9. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
10. INTERLOCK WITH AHU-3.
11. REFER TO E-19 FOR INTERLOCKS PER MC.

KEY NOTES:
1. EXISTING EQUIPMENT, DEVICES, AND MATERIALS TO REMAIN.
2. EXISTING EQUIPMENT, DEVICES, AND CONNECTION MATERIALS COMPLETE. REUSE OF EXISTING CIRCUITS WILL BE ALLOWED WHEN THE EXISTING CIRCUITS DERIVE FROM AND TERMINATE IN CORRECT LOCATIONS.
3. REFER TO AND COORDINATE WITH M-DRAWINGS.
4. CONTROL BY MC.
5. REFER TO E-19 FOR INTERLOCKS PER MC.
6. REPLACE SERVICE CONDUCTORS 600-3G (PROPOSED)
7. FURNISH AND INSTALL NEW FEEDER.
8. FURNISH AND INSTALL NEW EQUIPMENT MATERIALS, WIRING, ETC. (COMPLETE).
9. DEMO ALL INSTRUMENTATION, CONNECTIONS, AND EQUIPMENT AS REQUIRED FOR PROJECT COMPLETION.
10. INTERLOCK WITH AHU-3.
11. REFER TO E-19 FOR INTERLOCKS PER MC.
LAKEWOOD WATER TREATMENT PLANT

**NEW XFRM-LP4B**
480/240V (3) 3G & (1) 4G IN 2-1/2" C.

**NEW XFRM-LP-L1, L3**
480/240V (3) 3G & (1) 4G IN 2-1/2" C.

**LP-L**
150-3G
200-3G
3P

**LP-L3**
200-3G
2P

**LP-4A**

**LP-L4**
100-3G
200-3G
3P

**New Boiler E-Stop**

**Existing Boiler E-Stop**

**New MCC**
600A HORIZONTAL/300 AMP VERTICAL

**Existing MCC**
SQUARE D MODEL 4 MCC
1. Existing temperature control panel No. 2 to be demolished
2. Existing condensate pumps to be demolished
3. Electrical connection to existing rooftop unit to remain
4. Existing rooftop dehumidifier to be removed
5. Heat pumps and misc equipment to be demolished
6. Rooftop electrical connections to be abandoned
1. DATA ROOM

2. EXISTING BOILERS AND WATER HEATER TO REMAIN

3. EXISTING HVAC PANELS TO BE REMOVED AND REPLACED

4. EXISTING LP-L4A AND EQUIPMENT

5. EXISTING WTP-MCC-A TO REMAIN

6. EXISTING WTP-MCC-A TO REMAIN

7. EXISTING WTP-MCC-A TO REMAIN
### LUMINAIRE SCHEDULE

<table>
<thead>
<tr>
<th>DES. SHEET NO.</th>
<th>DESCRIPTION</th>
<th>LUMINAIRE MANUFACTURE</th>
<th>VOLT</th>
<th>Catalog Number</th>
<th>CATALOG SERIAL NO.</th>
<th>FABRICATOR</th>
<th>OPTIONS/ACCESSORIES CODE</th>
<th>ACCEPTABLE MANUFACTURERS</th>
<th>SEE NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>VT 1</td>
<td>LED BOUCH SERVICE FIXTURE</td>
<td>PHILIPS LED</td>
<td>120V</td>
<td>E070</td>
<td>2</td>
<td>600</td>
<td>PMH-4000-PZ, PMH-4000-PZ, OR EQUAL</td>
<td>16-A</td>
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</tr>
<tr>
<td>VT 2</td>
<td>LED BOUCH SERVICE FIXTURE</td>
<td>LITHIONIA LED</td>
<td>120V</td>
<td>NA</td>
<td>3</td>
<td>PMH-4000-PZ, PMH-4000-PZ, OR EQUAL</td>
<td>16-A</td>
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<tr>
<td>EXIT 2</td>
<td>LED BTH WITH DUAL ENLAMPS</td>
<td>LITHIONIA LAMPHOLE</td>
<td>120V</td>
<td>NA</td>
<td>4</td>
<td>PMH-4000-PZ, PMH-4000-PZ, OR EQUAL</td>
<td>16-A</td>
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<tr>
<td>EMT 2</td>
<td>LED EMERGENCY LIGHT UNIT</td>
<td>LITHIONIA LAMPHOLE</td>
<td>120V</td>
<td>NA</td>
<td>5</td>
<td>PMH-4000-PZ, PMH-4000-PZ, OR EQUAL</td>
<td>16-A</td>
<td></td>
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</tr>
</tbody>
</table>

### OPTIONS/ACCESSORIES CODE LISTING:

1. STRUCTURAL REFLECTOR
2. FLAT ALUMINUM DOOR FRAME
3. RECESSED ALUMINUM DOOR FRAME
4. FLAT STEEL DOOR FRAME
5. SINGLE GASKET DOOR FRAME
6. TRIPLE GASKET DOOR FRAME, LENS & BODY
7. ANTIMICROBIAL PROTECTION PAINTED FINISH
8. DUAL LOCATION CONSTRUCTION

### BALLAST CODE LISTING (SEE SPECIFICATION SECTIONS FOR ADDITIONAL INFORMATION):

- LED DRIVER, FIXED NON-DIMMABLE: DIMMING IS NOT REQUIRED FOR THIS FIXTURE.
- LED DRIVER, STEP-DIM: DIMMABLE TO 1%.
- LED DRIVER, DIMMABLE TO 1%.
- PROGRAMMED START: NORMAL BALLAST FACTOR 0.7, SYLVANIA QUICKTRONIC HIGH-EFFICIENCY SERIES, OR EQUAL, BY ADVANCE OR UNIV AURAL.
- PROGRAMMED START, LOW BALLAST FACTOR 0.77, 100% THD, SYLVANIA QUICKTRONIC HIGH-EFFICIENCY SERIES, OR EQUAL, BY ADVANCE OR UNIV AURAL.
- PROGRAMMED START, HIGH BALLAST FACTOR 1.0, 100% THD, SYLVANIA QUICKTRONIC PROFESSIONAL SERIES, OR EQUAL, BY ADVANCE OR UNIV AURAL.
- INSTANT START, NORMAL BALLAST FACTOR 0.87, 100% THD, SYLVANIA QUICKTRONIC HIGH-EFFICIENCY SERIES, OR EQUAL, BY ADVANCE OR UNIV AURAL.
- INSTANT START, 100% BALLAST FACTOR, 100% THD, SYLVANIA QUICKTRONIC PROFESSIONAL SERIES, OR EQUAL, BY ADVANCE OR UNIV AURAL.
- PROGRAMMED START, 100% BALLAST FACTOR, 100% THD, SYLVANIA QUICKTRONIC PROFESSIONAL SERIES, OR EQUAL, BY ADVANCE OR UNIV AURAL.
- N HD, LOW FREQUENCY ELECTRONIC ULR, 100% VARIATION, AS SHOWN, OR EQUAL, BY SYLVANIA OR UNIV AURAL.
- CERAMIC METAL HALIDE, IF BALLASTS SHALL BE IN CLASS II OR NON-CLASS II, OR EQUAL.
- PULSE START BALLAST AS MANUFACTURED BY SYLVANIA OR UNIV AURAL, OR EQUAL.
- PULSE START BALLAST AS MANUFACTURED BY SYLVANIA OR UNIV AURAL, OR EQUAL.

### GENERAL LUMINAIRE SCHEDULE NOTES:

- MANUFACTURE NAMES AND CATALOG NUMBERS ARE USED FOR QUALITY AND PERFORMANCE ONLY. LUMINAIRES AND OTHER ELECTRICAL DEVICES MANUFACTURED BY OTHERS SHALL BE EQUALLY ACCEPTABLE PROVIDED THEY MEET OR EXCEED IN PERFORMANCE AND QUALITY AS SPECIFIED.

### LUMINAIRE SCHEDULE NOTES:

- ALL BALLASTS WERE WIRING TO THE DIMMING SYSTEM SHALL BE BURNED INTO FOR A MINIMUM OF 100 HOURS PRIOR TO DIMMING SYSTEM SET UP.
- EACH LUMINAIRE SHALL BE SUPPLIED WITH A QUICK DISCONNECTING MEANS FOR ALL BALLASTS AS REQUIRED BY NEV 410.73. PROVIDE THOMAS AND BETTS LED OR LED OR EQUAL.
- ALL SELECTIONS ARE BASED ON THE INTENT OF THE CONTRACT.
<table>
<thead>
<tr>
<th>TAG NO.</th>
<th>EQUIPMENT/CONSUMER DESC.</th>
<th>LOAD</th>
<th>POWER</th>
<th>POWER</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>(HP)</td>
<td>(VOLTS)</td>
<td>(PHAS 1)</td>
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<tr>
<td>001-1</td>
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<td>120</td>
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<td>001-2</td>
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</tbody>
</table>

**NOTES:**

- All information provided is the best information available. The contractor shall provide preconstruction inspections to verify all connections and equipment meets specifications.
- Text shall be added if necessary.
- All work shall be performed in accordance with the plans and specification.
- Electrical service shall be provided by the contractor.
- All electrical equipment shall be new and of the make specified.
- All electrical equipment shall be installed in accordance with the plans and specifications.
- All electrical work shall be performed in accordance with the National Electrical Code.
- All electrical work shall be licensed and performed by a licensed electrician.
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<table>
<thead>
<tr>
<th>Tab. No.</th>
<th>Description</th>
<th>Status</th>
<th>Voltage</th>
<th>Phase</th>
<th>Location</th>
<th>Breaker</th>
<th>Rating</th>
<th>Type</th>
<th>Control</th>
<th>1st Source</th>
<th>2nd Source</th>
<th>Power</th>
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</tbody>
</table>

**Notes:**
- All items listed are actual equipment. Actual sizes shall be compared to sheet actual application and actual equipment.

**Field Data and Performance Schedule:**
- This data is intended to comply with all National, State, and local electrical codes.
- The actual equipment sizes shall be compared to the sheet actual application and actual equipment.
- All items listed are actual equipment. Actual sizes shall be compared to sheet actual application and actual equipment.

**Contact Information:**
- Phone: 218-722-3915, 1-800-777-7380
- Fax: 218-722-4548
- 332 W. Superior Street, Duluth, MN 55802
- Web Address: www.msa-ps.com
MELTIC DB9(100A) MOTOR DECONTACTOR COMPLETE WITH ANGLED ADAPTOR, CONNECTOR WITH HANDLE. PROVIDE 4 PILOT CONTACTS.

CONDUIT TO CEILING JUNCTION BOX FOR MOTOR AND TEMPERATURE SENSOR CABLES.

PEDESTAL SUPPORT INSTALLED PER DETAIL

MOTOR AND TEMPERATURE SENSOR WIRING IN LIQUID TIGHT FLEXIBLE CONDUIT.

ROOF MOUNTED EXHAUST FAN

SAMPLE PUMP CONNECTION DETAIL

MOTORISED DAMPER OR BACKRAFT DAMPER, SEE SCHEDULE

EXTENDED BASE W/ SIDE ACCESS

CONNECT DUCT AT DAMPER SECTION

INSULATED CURB

FLASHING

PROVIDE SHEET METAL EXECUTED AROUND OPENING CALLS TIGHT.

1-1/2" DEEP MINIMUM DROP PAN - SOLDER ALL SEAMS WATERPROOF PROVIDE WASTING COATING WILL INTERIOR.

ENCLOSE DROP PAN W/ EXTERNAL INSULATION

NOTE:

PREREFERRED LOCATION FOR MOTORISED DAMPER AND MOTOR IS BELOW THE ROOF SPACE PERMITTED.