MOAB REGIONAL HVAC DUCT REPLACEMENT
DEPARTMENT OF HUMAN SERVICES
1165 South Highway 191 Moab, Utah 84532

State of Utah—Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

4110 State Office Building / Salt Lake City, Utah 84114 / 538-3018

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CONSULTANTS

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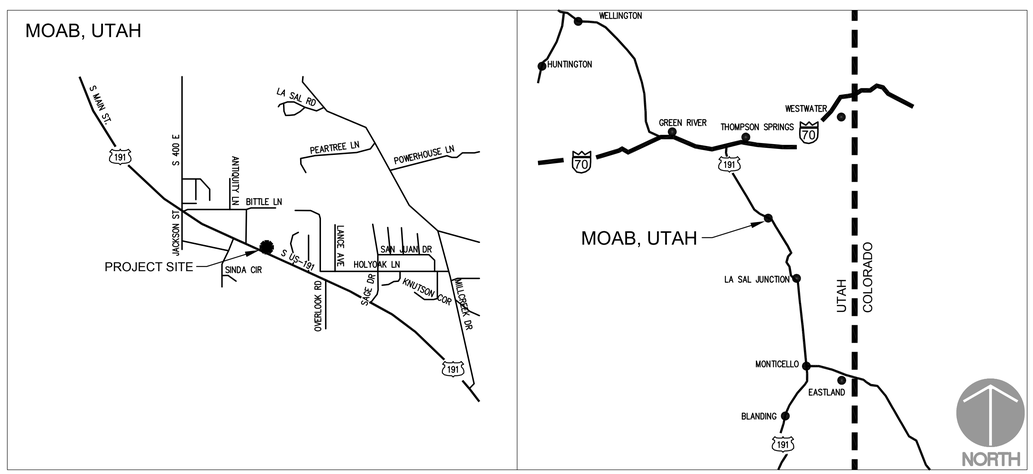
DFCM Project No. 08040400
CONSTRUCTION DRAWINGS



Vicinity Map

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SHEET CONTENTS
COVER SHEET

C0.1

LEGEND OF MECHANICAL SYMBOLS AND ABBREVIATIONS

MECHANICAL

- POSITIVE PRESSURE DUCT – RISE
- POSITIVE PRESSURE DUCT – DROP
- NEGATIVE PRESSURE DUCT – RISE
- NEGATIVE PRESSURE DUCT – DROP
- ROUND DUCT – RISE
- ROUND DUCT – DROP
- UNDER FLOOR DUCT
- TURNING VANES
- FRESH AIR LOUVER
- RELIEF AIR OR EXHAUST AIR LOUVER
- 12X12 / 200 — CEILING SUPPLY DIFFUSER
- 22X22 / 200 — CEILING RETURN REGISTER
- 12X12 / 200 — CEILING EXHAUST REGISTER, (BALANCE TO MATCH SUPPLY IF RETURN CFM IS NOT SHOWN)
- 24X10 / 200 — SIDEWALL SUPPLY REGISTER
- 24X10 / 200 — SIDEWALL EXHAUST OR RETURN REGISTER
- 12X12 / 200 — CEILING SUPPLY DIFFUSER WITH FLEXIBLE DUCT
- 12X12 / 200 — CEILING AIR GRILLE WITH FLEXIBLE DUCT

  (TOP FIGURES INDICATE NECK SIZE. BOTTOM FIGURE INDICATES CFM.)
- CEILING RETURN AIR GRILE W/ SOUND BOOT
- 3–1" SLOTS / @ 48 / 400 — LINEAR DIFFUSER WITH PLENUM AND FLEXIBLE DUCT CONNECTION. NO. OF SLOTS & SIZE OF SLOT ON TOP, ACTIVE LENGTH AND CFM ON BOTTOM
- FLEXIBLE DUCT CONNECTION
- FLEXIBLE DUCT
- FAN
- SD — DUCT SMOKE DETECTOR
- UNIT HEATER

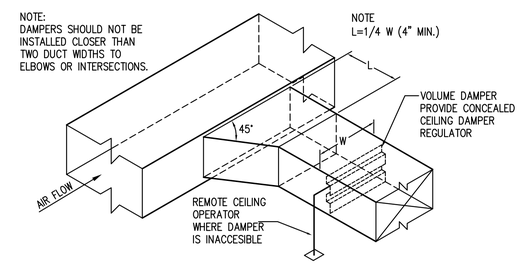
MECHANICAL

- 12/8 FO — FLAT OVAL DUCT WITH NET INSIDE DIMENSIONS SHOWN IN INCHES.
- 12/8 — RECTANGULAR DUCT WITH NET INSIDE DIMENSIONS SHOWN IN INCHES.
- 12ø — ROUND DUCT WITH NET INSIDE DIMENSIONS SHOWN IN INCHES.
- UP — INCLINED RISE
- DN — INCLINED DROP

  (WITH RESPECT TO AIR FLOW 15° NOMINAL INCLINE WITH RADIUS TURNS=DEPTH OF DUCT.)
- W R — R/W=1. ROUND DUCT SIMILAR TO RECTANGULAR
- 12/12 8/8 — RECTANGULAR TO RECTANGULAR OR ROUND TO ROUND DUCT TRANSFORMATION MAXIMUM 15° INCLUDED ANGLE EXCEPT WHERE SHOWN OTHERWISE.
- 12/12 12ø — RECTANGULAR TO ROUND DUCT TRANSFORMATION
- R — BRANCH DUCT SPLIT WITH 6" WIDTH AND MIN. R=WIDTH OF BRANCH DUCT DOWNSTREAM. ELBOW TURNING VANE OPTIONAL.
- 1.50 1.250 45° 100% D — TAP ENTRY AREA EQUALS 150% OF BRANCH AREA
- 12ø 12/12 — HIGH EFFICIENCY FITTING
- MANUAL VOLUME DAMPER
- FD — FIRE DAMPER IN DUCT, W/ ACCESS PANEL REQD.
- FSD — COMBINATION FIRE/SMOKE DAMPER W/ ACCESS PANEL
- SD — SMOKE DAMPER W/ ACCESS PANEL
- BDD — BACK DRAFT DAMPER
- ATC OR — ATC DAMPER
- AD — ACCESS PANEL IN DUCT OR PLENUM
- HEATING OR COOLING COIL IN DUCT
- SINGLE DUCT AIR TERMINAL BOX VARIABLE OR CONSTANT VOLUME. MIN. 1–1/2 TERMINAL INLET SIZE STRAIGHT DUCT AT TERMINAL INLET.
- 4–WAY BLOW PATTERN
- 3–WAY BLOW PATTERN
- 2–WAY BLOW PATTERN
- 2–WAY BLOW PATTERN
- 1–WAY BLOW PATTERN

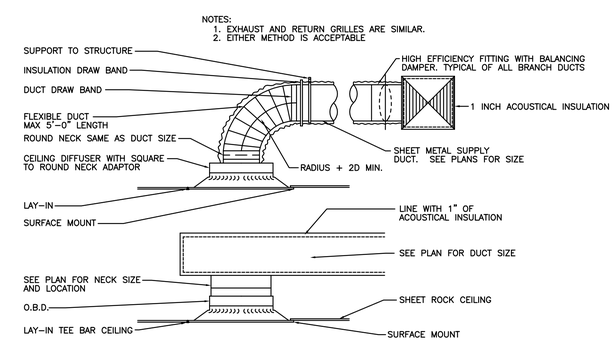
SYMBOLS

- P–1 — PLUMBING FIXTURES
- POINT OF CONNECTION
- A / M–101 — SECTION TAG – TOP FIGURE IS SECTION NO. BOTTOM FIGURE IS SHEET NO.
- A / M101 — DETAIL TAG – TOP FIGURE IS DETAIL NO. BOTTOM FIGURE IS SHEET NO.
- EF / 1 — EQUIPMENT IDENTIFICATION
- 1 — KEYED NOTE IDENTIFICATION



B5 / M0.0 **BRANCH DUCT TAKE–OFF & DAMPER DETAIL**

NO SCALE



A5 / M0.0 **CEILING DIFFUSER DETAIL**

NO SCALE

GRILLES, REGISTERS AND DIFFUSERS

ID	MANUFACTURER	MODEL	MAX NC	DESCRIPTION
CD-1	EH PRICE	SPD	30	SQUARE PLAQUE FACE CEILING DIFFUSERS. REMOVABLE FACE, C.W./O.B.D. FRAME SHALL BE FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES SHALL BE 24" x 24", 24" x 12" OR 12" x 12" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE.

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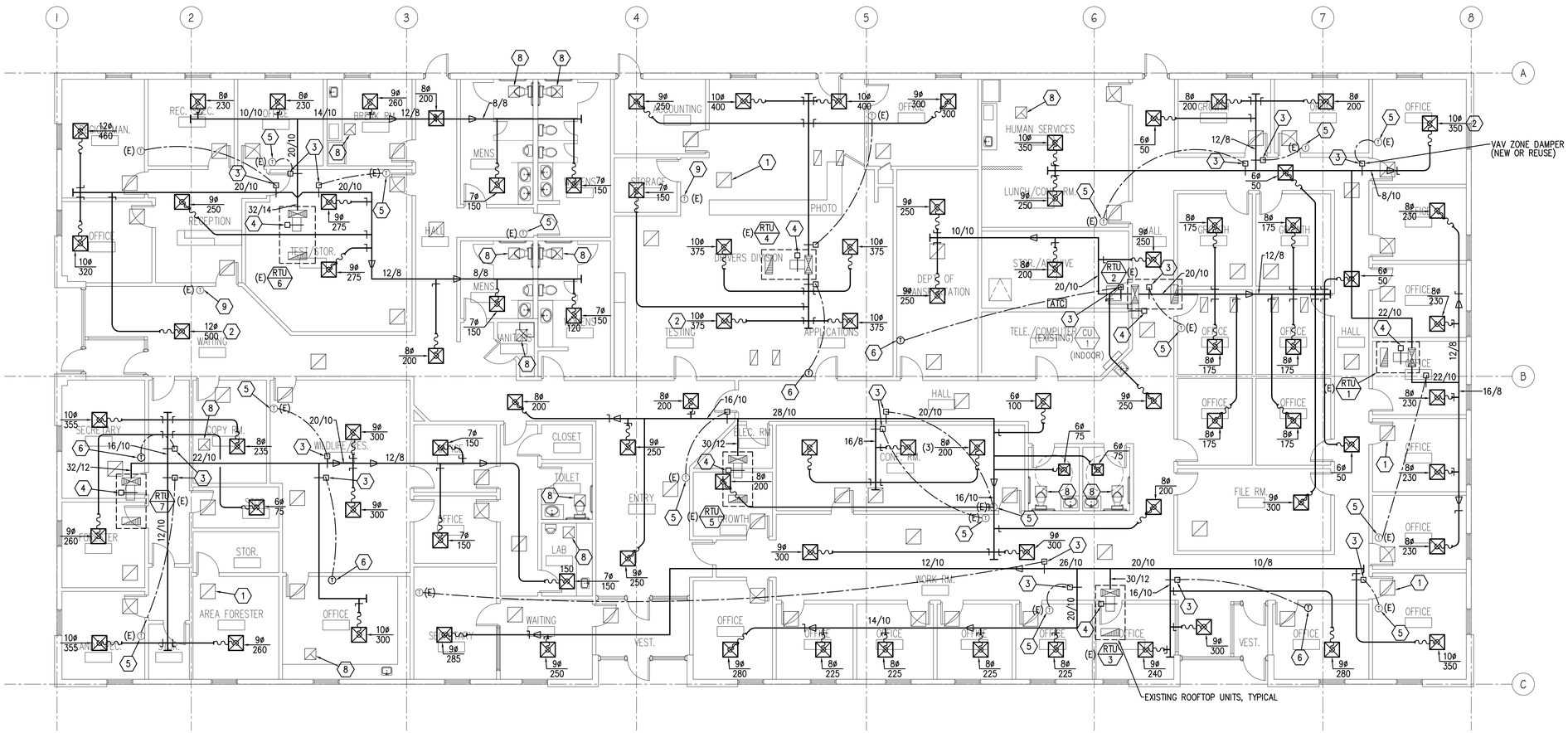
SHEET CONTENTS

MECHANICAL SYMBOLS, ABBREV. SCHEDULE AND DETAIL

M0.0



1 MECHANICAL PLAN
M1.1 SCALE: 1/8" = 1'-0"

KEYED NOTES

1. EXISTING RETURN AIR GRILLE TO REMAIN. TYPICAL AS SHOWN. IF GRILLE IS MOVED TO ACCOMMODATE WORK, INSTALL BACK IN SAME LOCATION.
2. PROVIDE AND INSTALL NEW CEILING DIFFUSERS. CD-1. LOCATE DIFFUSER LOCATED NEAR AS SHOWN. RECONFIGURE CEILING TILE TO ACCOMMODATE LOCATION. TYPICAL OF ALL.
3. RELOCATE EXISTING AND NEW AUTO ZONE DAMPERS. EXISTING 22x12 (QTY. 13) AND 20x12 (QTY. 6) SHALL BE REUSED AND RELOCATED. PROVIDE (3) NEW AUTO DAMPERS. TRANSITION FROM DUCT SIZE SHOWN TO DAMPER WITH MINIMUM 45 DEGREE TRANSITION.
4. EXISTING BYPASS DAMPERS (QTY. 7) SHALL BE RELOCATED TO LOCATION AS SHOWN.
5. EXISTING THERMOSTAT / SENSOR TO REMAIN. EXTEND AND TIE INTO CONTROL OF RELOCATED ZONE DAMPER.
6. NEW THERMOSTAT / SENSOR.
7. EXTEND AND CONNECT NEW DUCTWORK INTO DISCHARGE OF EXISTING ROOFTOP UNITS. PROVIDE NEW SHEET METAL VERTICAL DUCT EXTENDING FROM DISCHARGE OF ROOFTOP UNIT. PROVIDE T-FITTING WITH TURNING VANES IN BOTH BRANCH TAKE OFFS.
8. EXISTING EXHAUST FANS TO REMAIN.
9. REMOVE THERMOSTAT AND PROVIDE BLANK COVER.
10. EXISTING OPEN ENDED RETURN AIR DUCT TO REMAIN.

GENERAL NOTES

1. ALL CEILING ARE ACOUSTICAL LAY-IN TYPE CEILING TILES. REMOVE AND REPLACE EXISTING CEILING TILE AND SUPPORT GRID TO ACCOMPLISH REMOVAL AND INSTALLATION OF DUCTWORK. REPLACE ALL DAMAGED CEILING TILES AND SUPPORT GRID WITH NEW. MATCH EXISTING CEILING TILES.
2. ALL CEILING DIFFUSERS SHOWN AS SUCH ARE CD-1, CFM AS NOTED, UNLESS OTHERWISE NOTED. SEE DETAIL A5/M0.0.
3. PROVIDE HIGH -EFFICIENCY FITTING WITH BALANCING DAMPER ON ALL BRANCHES TO SUPPLY DIFFUSERS.
4. DO NOT ROUTE DUCTS AND PIPES ABOVE ELECTRICAL PANELS. ALL ELECTRICAL PANELS MUST HAVE CLEAR ACCESS SPACE IN FRONT OF PANEL 4'-0" DEEP AND 6'-6" HIGH. DO NOT ROUTE DUCTS AND PIPES IN ELECTRICAL ROOMS, EXCEPT DUCTS AND PIPES SERVING THE ROOM.
5. ALL DUCT DIMENSIONS ARE INSIDE FREE AREA DIMENSIONS. ADJUST SHEET METAL DIMENSION FOR LINED DUCT.
6. ALL 90 DEGREE ELBOWS AND T FITTINGS SHALL HAVE TURNING VANES INCLUDING FITTING EXTENDING FROM DISCHARGE OF ROOFTOP UNITS.
7. DUCT LAYOUT IS SCHEMATIC IN DESIGN. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND MAKE ALL NECESSARY ADJUSTMENTS AND TRANSITIONS BEFORE FABRICATION OF DUCTWORK.
8. CONTRACTOR TO WORK ON AND COMPLETE ONE ROOFTOP SYSTEM AND ASSOCIATED AREA AT A TIME. EACH SPACE SHALL BE PROTECTED AND COVERED FROM DUST AND DEBRY DURING CONSTRUCTION.
9. IF CONTRACTOR ENCOUNTERS MATERIAL WHICH MAY CONTAIN ASBESTOS IMMEDIATELY STOP WORK IN THIS AREA AND NOTIFY THE OWNER.
10. PROVIDE CEILING ACCESS PANELS AS REQUIRED WHERE MECHANICAL EQUIPMENT, VALVES, VAV BOXES, FIRE DAMPERS, ETC. ARE LOCATED ABOVE INACCESSIBLE CEILINGS.
11. STEEL ROOF DECK SHALL NOT BE USED TO SUPPORT LOADS FROM PIPING, DUCTWORK OR EQUIPMENT, UNLESS NOTED OTHERWISE. HANGER LOADS LESS THAN 50 LBS. MAY BE HUNG FROM THE STEEL ROOF DECK IN CASES WHEN HANGING FROM THE STEEL ROOF DECK CANNOT BE AVOIDED; THE ATTACHMENT METHOD MUST DISTRIBUTE THE LOAD ACROSS THE DECK AS APPROVED BY THE STRUCTURAL ENGINEER.
12. ALL NEW AND EXISTING AUTOMATIC TEMPERATURE CONTROLS SHALL BE COMMISSIONED AND BROUGHT TO WORKING ORDER.
13. TEST AND BALANCE ALL (7) ROOFTOP UNIT SYSTEM INCLUDING ALL ASSOCIATED DIFFUSERS. SEE SPECIFICATIONS.

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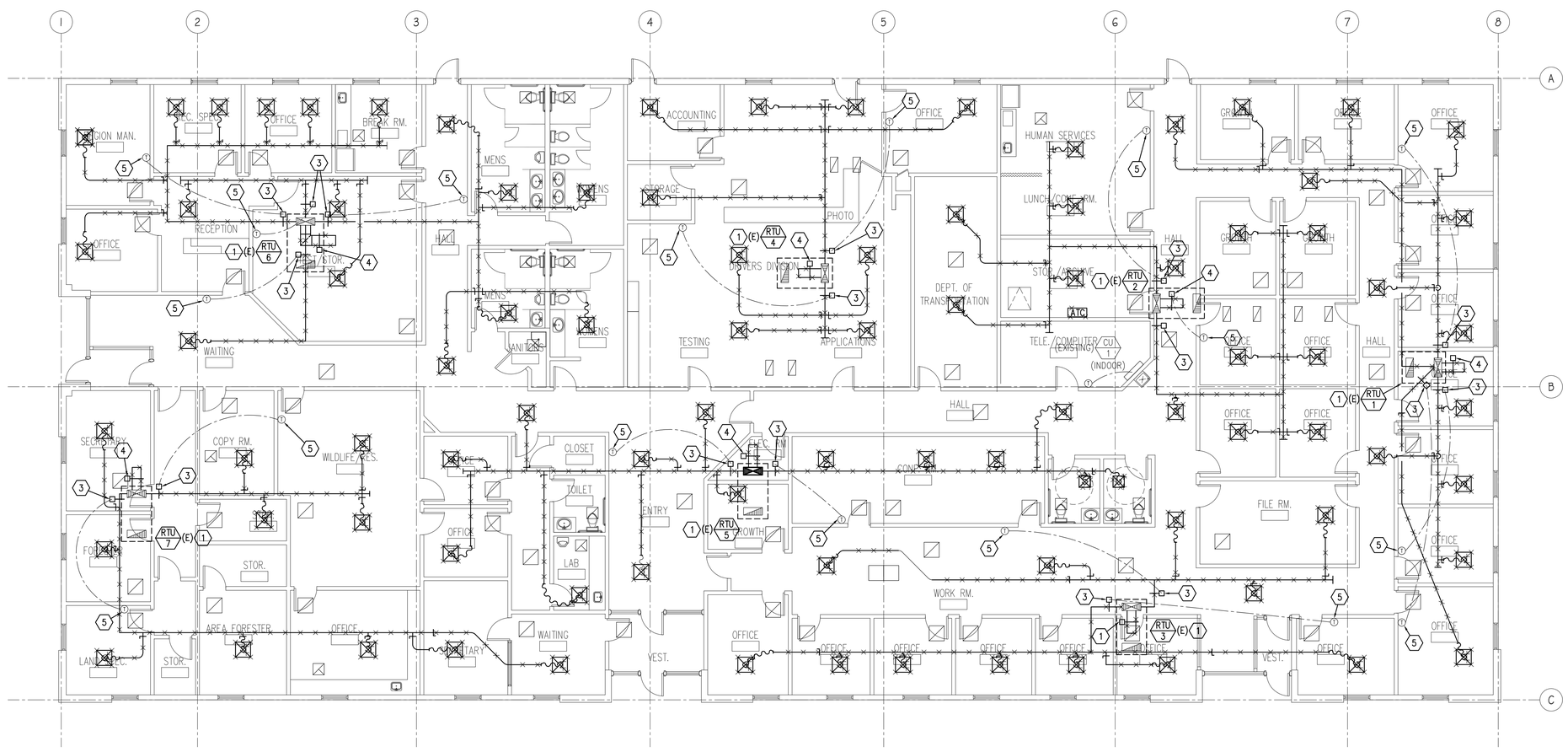
MECHANICAL PLAN

M1.1



1 M1.1 MECHANICAL PLAN

SCALE: 1/8" = 1'-0"

KEYED NOTES

1. EXISTING RTU'S TO REMAIN.
2. REMOVE ALL DUCTWORK AND ACCESSORIES AS SHOWN X'D.
3. EXISTING MOTORIZED ATC ZONE DAMPER TO BE RELOCATED. EXISTING 22x12 (QTY. 13) AND 20x12 (QTY. 6) SHALL BE LOCATED PER CONTRACTORS CHOICE.
4. EXISTING BYPASS DAMPERS TO BE RELOCATED. (QTY. 7)
5. EXISTING THERMOSTATS/ SENSORS TO REMAIN.
6. EXISTING EXHAUST FANS TO REMAIN.
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