

WHITE PAPER

TACO BELL

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OVERVIEW OF CHALLENGE IN THE PROJECT

Taco Bell was in plan to open a new franchise store at Fair Lawn, New Jersey. As a leading fast food restaurant, Taco Bell's prime concern was ventilation and odor in kitchen areas which might affect the customers dining in. Another challenge was to match the standard set by Taco Bell and design equipment which will give more space in the kitchen area.

The project was a complex designing challenge as the franchise owner wanted us to design MEP system to lower the construction cost. Providing power to all specialized equipment, easy maintenance and disposable of grease waste, and meeting energy conservation code requirements added more complexities.

YOUR ONE STOP
SHOP FOR ALL
MEP DESIGN
NEEDS

DESIGNED &
CONCEPTUALIZED BY
NY-ENGINEERS

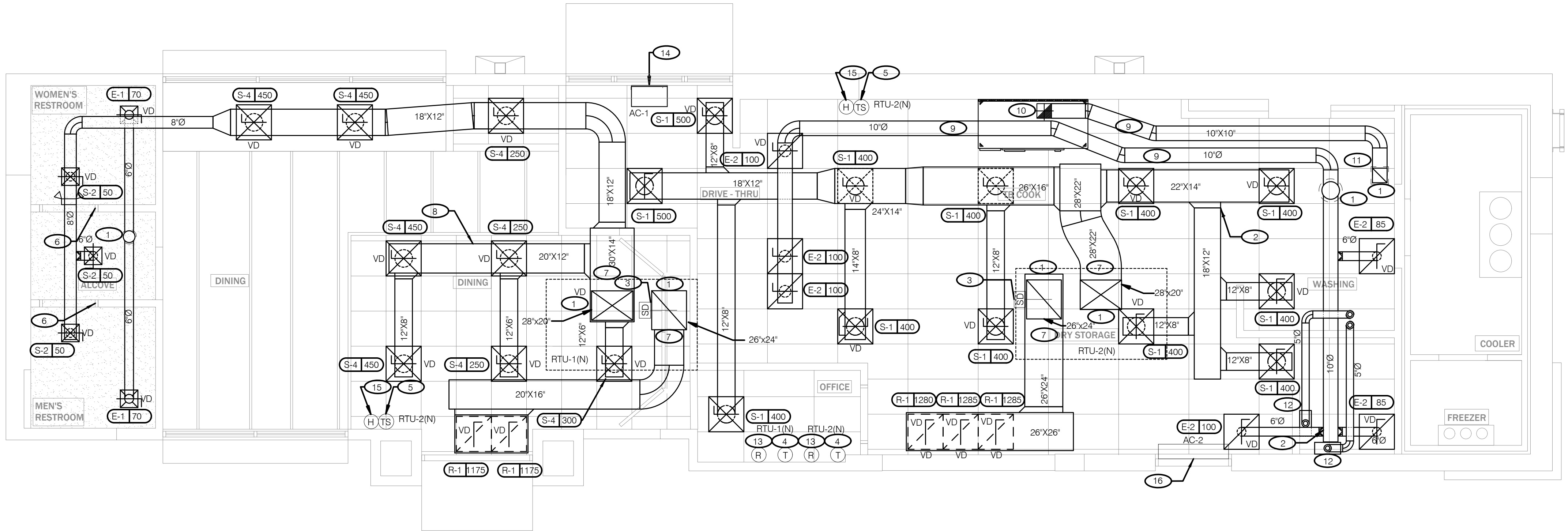
OUR CUSTOM SOLUTION

Our experts team focused on the ventilation issue and designed a dedicated exhaust fan for kitchen to eliminate odor and maintain proper ventilation in the kitchen area. Separate RTU system was provided for dining spaces heating and cooling requirement. For the grease waste, we provided low maintenance pre-cast grease trap outside the store which saved the cost and helped the owner in easy waste disposal.

We designed the entire franchise within 2 weeks resulting in Taco Bell, Fair Lawn, New Jersey starting operations with lower energy costs and prior to estimated timeline.

Area - 1710 Sq. Ft.

Services Used - Mechanical,
Electrical, Plumbing, Fire Protection



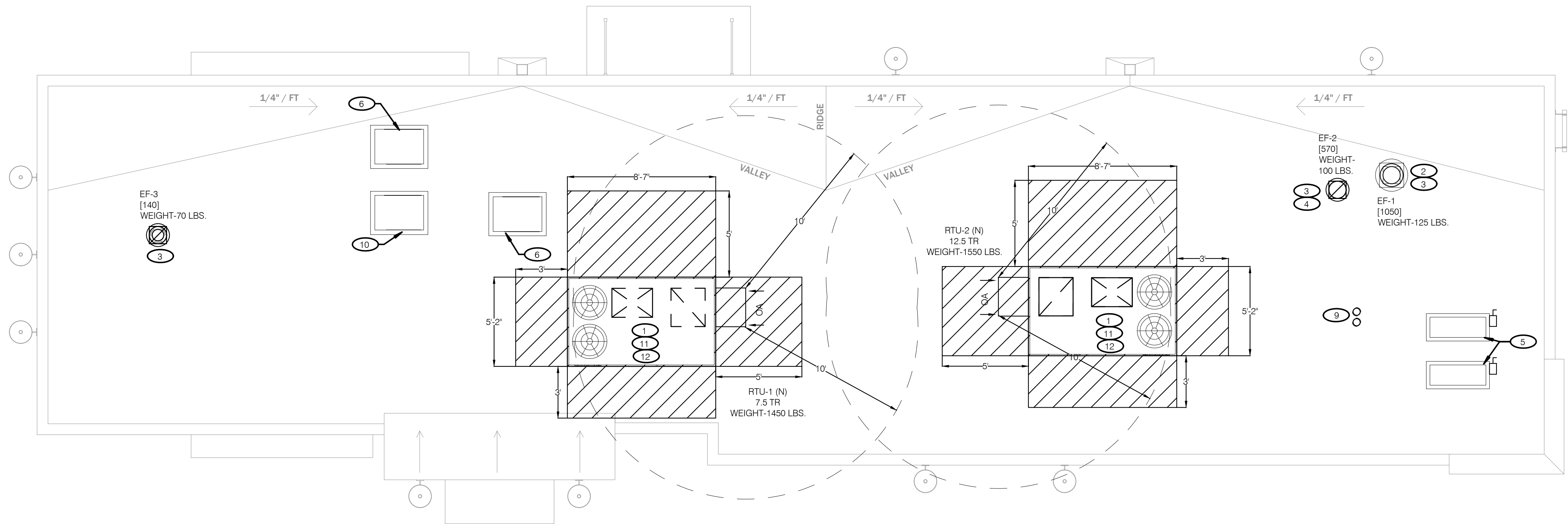
COVER ALL HVAC DUCT SYSTEMS OPENINGS TO PROTECT FROM CONSTRUCTION DUST AND DEBRIS UNTIL CONSTRUCTION IS COMPLETE. IF HVAC SYSTEM IS OPERATED BEFORE CONSTRUCTION IS COMPLETE, PROVIDE MERV8 FILTERS AT ALL AIR INTAKES INSIDE THE BUILDING.

DUCT AND DIFFUSER PLAN 1/4" = 1'-0" **A**

- DINING ROOM LIGHT FIXTURE LOCATIONS ARE CRITICAL. COORDINATE DUCTWORK LOCATIONS WITH LIGHTING AND STRUCTURAL.
- THERMOSTATS SHALL BE PROGRAMMABLE THERMOSTAT WITH SUBBASE AND REMOTE TEMPERATURE SENSOR (PROVIDED WITH RTU PACKAGE).
- HUMIDITY SENSOR APPLICATION IS VARIABLE PER SITE SPECIFIC CONDITIONS. REFER TO HVAC UNIT SCHEDULE FOR APPLICATION CONDITIONS.

- AIR DUCT UP TO UNIT.
- SEE DETAIL 4 ON DRAWING M4.0 FOR SUPPLY AIR TAKE-OFF TO CEILING DIFFUSERS AND GRILLES.
- FACTORY INSTALLED SMOKE DETECTOR MOUNTED IN ROOFTOP UNIT.
- LOCATE THERMOSTAT CONTROLS ON WALL IN OFFICE AT 48" A.F.F. COORDINATE LOCATION WITH LIGHT SWITCHES AND OTHER WALL MOUNTED ACCESSORIES. RUN 24 VAC POWER AND SIGNAL CONDUCTORS IN TWO (2) SEPARATE TWO (2) CONDUCTOR CABLES, 18 AWG.
- MOUNT THERMOSTAT REMOTE SENSOR AT 60" ABOVE FINISHED FLOOR. CONNECT TO THERMOSTAT WITH 18 AWG 2 CONDUCTOR CABLE PER MANUFACTURER INSTALLATION INSTRUCTIONS. ENSURE THAT TEMPERATURE SENSOR IN DINING AREA IS NOT LOCATED ON TILE WALL.
- UNDERCUT RESTROOM DOORS MINIMUM 3/4" FOR MAKE-UP AIR.
- PROVIDE SHOE TAP AT CONNECTION TO DUCT DROP FROM ROOFTOP UNIT.
- RUN DUCT THROUGH OPEN WEBBING OF ROOF TRUSSES (WHERE POSSIBLE). COORDINATE WITH TRUSS DESIGN PRIOR TO DUCTWORK FABRICATION.
- RUN DUCTWORK BETWEEN TRUSSES AS HIGH AS POSSIBLE UNDER ROOF JOISTS.
- 10'X10' EXHAUST AIR DUCT DOWN AND TRANSITION TO FIELD CUT EXHAUST CONNECTION AT HOOD.
- EXHAUST DUCT SHALL RUN BETWEEN ROOF JOISTS TO CONNECT TO ROOF EXHAUST FAN EF-1. SEE HOOD DETAILS ON DRAWING M3.0. SEE DETAIL 10 ON SHEET M4.0 FOR FIRE PROTECTION OF DUCT WORK. SEE DETAIL 11 ON SHEET M4.0 FOR EXHAUST DUCT TRANSITION.

- PROVIDE 3"x8" CONCENTRIC PVC KIT FOR WATER HEATER INTAKE AND FLUE VENT. TERMINATION ON ROOF. COORDINATE WORK WITH ALL TRADES.
- PROVIDE SMOKE DETECTOR RESET SWITCH WITH KEY. RESET SWITCH SHALL BE "SYSTEM SENSOR" MODEL # RT5151 KEY. MOUNT NEXT TO THERMOSTATS @ 48" A.F.F. - INSTALL PER MANUFACTURERS REQUIREMENTS.
- PROVIDE AIR CURTAIN IN LOCATION AS SHOWN ON PLAN. MOUNT AIR CURTAIN ON MULLION DIRECTLY ABOVE SERVICE OPENING DOORS AT DRIVE-THRU WINDOW. AIR CURTAIN SHALL BE BERNER MODEL DTU03-2026A. WITH 120/1/60 POWER CONNECTION. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR MORE DETAILS.
- HUMIDITY SENSOR (REMOTE) WHEN REQUIRED FOR HOT GAS REHEAT RTU OPTION. HUMIDITY SENSOR SHALL BE PLACED IN RETURN AIR DUCTWORK. RUN 24 VAC POWER AND SIGNAL CONDUCTORS IN TWO (2) SEPARATE TWO (2) CONDUCTOR CABLES, 18 AWG. SEE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- PROVIDE AIR CURTAIN IN LOCATION AS SHOWN ON PLAN. MOUNT AIR CURTAIN ON MULLION DIRECTLY ABOVE REAR DOOR. AIR CURTAIN SHALL BE BERNER MODEL CLC08-1048A. WITH 120/1/60 POWER CONNECTION. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR MORE DETAILS.



COVER ALL HVAC DUCT SYSTEMS OPENINGS TO PROTECT FROM CONSTRUCTION DUST AND DEBRIS UNTIL CONSTRUCTION IS COMPLETE. IF HVAC SYSTEM IS OPERATED BEFORE CONSTRUCTION IS COMPLETE, PROVIDE MERV8 FILTERS AT ALL AIR INTAKES INSIDE THE BUILDING.

MECHANICAL ROOF PLAN

1/4" = 1'-0"

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| <p>1 PROVIDE RTU IN LOCATION AS SHOWN ON PLANS. COORDINATE EXACT RTU LOCATION AND DUCT DROPS WITH STRUCTURAL TRUSS LAYOUT. MAINTAIN MINIMUM 10'-0" CLEARANCE BETWEEN OUTSIDE AIR INTAKES AND EXHAUST TERMINATIONS.</p> <p>2 PROVIDE TYPE I EXHAUST FAN IN LOCATION AS SHOWN PLANS. CONNECT 10"x10" EXHAUST DUCT FROM EXHAUST HOOD UP TO EF-1 ON ROOF. COORDINATION EXHAUST DUCT ROUTING WITH STRUCTURAL TRUSS LAYOUT.</p> <p>3 COORDINATE EXHAUST FAN LOCATION WITH ROOFTOP UNIT. MAINTAIN ROOFTOP UNIT MANUFACTURERS REQUIRED CLEARANCE AND MINIMUM 10 FT TO ROOFTOP UNITS OUTSIDE AIR INTAKE.</p> <p>4 PROVIDE EXHAUST FAN IN LOCATION AS SHOWN ON PLANS. CONNECT 12"x12" EXHAUST DUCT FROM DRY STORAGE, RESTROOM EXHAUST GRILLES TO EF-2 ON ROOF. COORDINATION EXHAUST DUCT ROUTING WITH STRUCTURAL TRUSS LAYOUT.</p> <p>5 CONDENSING UNIT SERVING WALK-IN COOLER/FREEZER. COORDINATE EXACT LOCATION WITH ROOF LAYOUT. CONTRACTOR TO FIELD VERIFY EXACT REFRIGERANT PIPING. PROVIDE ALL NECESSARY PIPING ACCESSORIES INCLUDING PIPING INSULATION AND INSTALL ON APPROPRIATE EQUIPMENT SUPPORTS.</p> <p>6 CONDENSING UNIT SERVING ICE MAKER. COORDINATE EXACT LOCATION WITH ROOF LAYOUT. CONTRACTOR TO FIELD VERIFY EXACT REFRIGERANT PIPING. PROVIDE ALL NECESSARY PIPING ACCESSORIES INCLUDING PIPING INSULATION AND INSTALL ON APPROPRIATE EQUIPMENT SUPPORTS.</p> <p>7 PLUMBING VENT. REFERENCE 1/P2.0.</p> <p>8 ROOF HATCH. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.</p> <p>9 PROVIDE MANUFACTURER'S CONCENTRIC TERMINATION VENT KIT SERVING HOT WATER HEATER BELOW. INSTALL IN STRICT ACCORDANCE WITH MANUFACTURERS REQUIREMENTS. ENSURE AT LEAST 10'-0" DISTANCE BETWEEN OUTDOOR AIR INTAKES.</p> | <p>10 CONDENSING UNIT SERVING FROZEN BEVERAGE MACHINE. COORDINATE EXACT LOCATION WITH ROOF LAYOUT. FIELD VERIFY EXACT REFRIGERANT PIPING. PROVIDE ALL NECESSARY PIPING ACCESSORIES INCLUDING PIPING INSULATION AND INSTALL ON APPROPRIATE EQUIPMENT SUPPORTS.</p> <p>11 ALL UTILITY PIPING FOR RTU'S SHALL RUN UP THROUGH ROOF INSIDE EACH UNIT'S ROOF CURB.</p> <p>12 CONDENSATE DRAIN TO NEAREST ROOF DRAIN OR DOWN SPOUT.</p> |
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KEYNOTES - MECHANICAL ROOF PLAN

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