North County Service Center
Replacement Rooftop Units
Florissant, Missouri

OWNER: STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR
OFFICE OF ADMINISTRATION

PROJECT MANAGEMENT: OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

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DESIGNER: Horner& Shifrin Engineering
401 S. 18th Street, Ste 400
St. Louis, MO 63103
(314) 531-4321

PROJECT NUMBER: O-1805-01
SITE NUMBER: #0020
FACILITY NUMBER: #05306

MISSOURI CERTIFICATE OF AUTHORITY: 000159

APPLICABLE CODES: 2018 IBC
2018 IMC
2017 NEC
2018 IECC
MECHANICAL GENERAL DEMOLITION NOTES:

1. THESE GENERAL NOTES APPLY TO ALL DEMOLITION.
2. CONTRACTOR SHALL PREPARE AND SUBMIT A WRITTEN DEMOLITION PLAN TO THE ENGINEER OF RECORD PRIOR TO THE START OF WORK. THE LOCAL OFFICIALS, G.C. AND ENGINEER OF RECORD WILL REVIEW THE PLANS AND APPROVE OR REJECT THEM. THE CONTRACTOR WILL NOT BE PERMITTED TO PROCEED WITH THE WORK UNTIL THIS PLAN IS APPROVED.
3. CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD WITHIN 48 HOURS OF THE STARTING DATE OF ANY PLAN CHANGES. THE CONTRACTOR SHALL PROVIDE 72-HOUR NOTICE TO THE G.C. AND ENGINEER OF RECORD OF ANY ADDITIONAL WORK NOTIFIED IN THE DEMOLITION PLAN.
5. CONTRACTOR SHALL PROVIDE A WRITTEN REPORT TO THE G.C. AND ENGINEER OF RECORD WITHIN 14 DAYS OF THE COMPLETION OF THE DEMOLITION WORK.
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SECOND FLOOR PLAN
MECHANICAL - DEMOLITION

DEMOLITION NOTES: (BASE BID)

DEMOLITION NOTES: (ALTERNATE #0)

INDEX TO THE SHEET OF WORK:

1. REMOVE EXISTING TERMINAL UNITS (FTU) IN THE BUILDING. PROVIDE A REPORT OF RECORDED VALUES TO THE ENGINEER OF RECORD FOR REVIEW PRIOR TO THE START OF THE CONTROLS UPGRADE.
2. REMOVE EXISTING BOX CONTROLLER, ACTUATOR, ASSOCIATED TEMPERATURE SENSOR AND JOINTS. VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS. NOTIFY THE ENGINEER AT ONCE IF THE CONTRACTOR DOES NOT CLEARLY UNDERSTAND THESE PLANS, OR IS NOT SURE OF THEIR MEANING, HE/SHE SHOULD OBTAIN THE ENGINEER'S WRITTEN EXPLANATION AND INTERPRETATION, IF THE CONTRACTOR DOES NOT CLEARLY UNDERSTAND THESE PLANS, OR IS NOT SURE OF THEIR MEANING, HE/SHE SHOULD OBTAIN THE ENGINEER'S WRITTEN EXPLANATION AND INTERPRETATION. THESE DRAWINGS MAY NOT FULLY DEPICT ALL AS-BUILT CONDITIONS, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS. NOTIFY THE ENGINEER AT ONCE IF THE CONTRACTOR DOES NOT CLEARLY UNDERSTAND THESE PLANS, OR IS NOT SURE OF THEIR MEANING, HE/SHE SHOULD OBTAIN THE ENGINEER'S WRITTEN EXPLANATION AND INTERPRETATION.
3. REMOVE EXISTING FAN COIL UNIT AND ASSOCIATED THERMOSTAT AND REACH IN AND RECLAIM REFRIGERANT FROM ALL HVAC EQUIPMENT PRIOR TO DISPOSAL OF THE REFRIGERANT PIPING. EXISTING SUPPLY AND RETURN DUCTWORK TO REMAIN.
4. REMOVE EXISTING BOX CONTROLLER, ACTUATOR, ASSOCIATED TEMPERATURE SENSOR AND JOINTS. VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS. NOTIFY THE ENGINEER AT ONCE IF THE CONTRACTOR DOES NOT CLEARLY UNDERSTAND THESE PLANS, OR IS NOT SURE OF THEIR MEANING, HE/SHE SHOULD OBTAIN THE ENGINEER'S WRITTEN EXPLANATION AND INTERPRETATION.
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MECHANICAL GENERAL DEMOLITION NOTES:
1. THESE GENERAL NOTES APPLY TO ALL DEMOLITION WORK.
2. CONTRACTOR SHALL REMOVE ALL EXISTING FIXED MATERIALS TO ADEQUATELY EXPOSE THE BASE STRUCTURES AND BEAMS.
3. CONTRACTOR SHALL Remove All Existing Mechanical Fixtures, Equipment, Piping, Duct, Insulation, etc. to the Base Structure and Beams.
4. CONTRACTOR SHALL Remove All Existing Electrical Fixtures, Equipment, Piping, Duct, Insulation, etc. to the Base Structure and Beams.
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10. CONTRACTOR SHALL Remove All Existing Electrical Fixtures, Equipment, Piping, Duct, Insulation, etc. to the Base Structure and Beams.

REMOVE EXISTING ROOFTOP UNIT AND ASSOCIATED ROOF CURB.

REMOVE EXISTING CONDENSING UNIT AND ASSOCIATED EQUIPMENT RAIL AND REFRIGERANT PIPING.

AT LEAST ONE ROOFTOP UNIT SHALL BE IN OPERATION AT ALL TIMES. STAGGER INSTALLATION OF NEW UNITS TO ALLOW FOR CONTINUOUS CONDITIONING OF BUILDING.
NO WORK BEYOND MATCHLINE

ROUTE NEW REFRIGERANT PIPING THROUGH EXISTING ROOF PENETRATION. SEAL AIR AND WATER TIGHT.

EXISTING 1" GAS PIPE THRU ROOF
EXISTING 1" GAS PIPE THRU ROOF

ALTERNATE #1

CONTRACTOR SHALL PROVIDE ROOF PROTECTION FROM ENTRANCE ON ROOF TO WORK AREA. AFTER CONSTRUCTION IS COMPLETE, CONTRACTOR SHALL REMOVE ROOF PROTECTION AND REPAIR ANY DAMAGES.

AT LEAST ONE ROOFTOP UNIT SHALL BE IN OPERATION AT ALL TIMES. STAGGER INSTALLATION OF NEW UNITS TO ALLOW FOR CONTINUOUS CONDITIONING OF BUILDING.

INSTALL NEW ROOFTOP UNIT AND CURB IN LOCATION OF PREVIOUSLY REMOVED UNIT. RECONNECT EXISTING DUCTWORK. PATCH ROOF TO MATCH EXISTING.

ROUTE CONDENSATE TO GUTTER ALONG WEST SIDE OF BUILDING
INSTALL NEW CONDENSING UNITS. PATCH ROOF TO MATCH EXISTING.

GENERAL NOTES: (THIS SHEET ONLY)

KEYED NOTES: (BASE BID)
- INSTALL NEW CONDENSING UNITS, PATCHED TO MATCH CURB.

KEYED NOTES: (ALTERNATE $)
- INSTALL NEW CONDENSING UNITS, PATCHED TO MATCH CURB.
GENERAL CONTROL NOTES

ZONE UNOCCUPIED OVERRIDE:

WHEN IN THE OCCUPIED MODE, THE CONTROLLER SHALL MEASURE THE ZONE CO2 CONCENTRATION AND MODULATE THE ZONE DAMPER OPEN ON RISING CO2 CONCENTRATIONS, OVERRIDING NORMAL DAMPER OPERATION TO MAINTAIN A CO2 SETPOINT OF NOT MORE THAN 1000 PPM (ADJ.). ALARM SHALL BE PROVIDED IF THE ZONE ROOM TEMPERATURE SET POINT, OCCUPIED.

ZONE TEMPERATURE (DEGREES F): 85°F (ADJ.) cooling SETPOINT AND 60°F (ADJ.) heating SETPOINT.

UNOCCUPIED MODE: 85°F (ADJ.) COOLING SETPOINT AND 60°F (ADJ.) HEATING SETPOINT WITH 2 DEG DEADBAND.

THE UNIT SHALL MAINTAIN ZONE SETPOINTS BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING:

- AHU, WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 65 DEG F, THE CONTROLLER SHALL ENABLE SUPPLY AIR TEMPERATURE RESET.
- DX COOLING,
- GAS HEAT AND ECONOMIZER OPERATION SERVING DUCT MOUNTED TERMINAL UNITS
- ECONOMIZER.
- LAST IN, FIRST OUT (LIFO), TO MAINTAIN CO2 LEVELS.
- TO MAINTAIN SPACE TEMPERATURE SET POINTS. INTERLOCK COMPRESSOR WITH INDOOR FAN TO OPERATE SIMULTANEOUSLY.
- THE ECONOMIZER SHALL BE ENABLED WHENEVER:
  - THE DISCHARGE AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).
  - THE OUTDOOR AIR TEMPERATURE IS BELOW 65 DEG F.

THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A RETURN AIR SMOKE DETECTOR STATUS.

THE UNIT SHALL MAINTAIN ZONE TEMPERATURES BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING:

- AHU, THE UNIT SHALL MAINTAIN ZONE TEMPERATURES BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING:
- DX COOLING,
- GAS HEAT AND ECONOMIZER OPERATION SERVING DUCT MOUNTED TERMINAL UNITS
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THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A RETURN AIR SMOKE DETECTOR STATUS.

THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE REHEATING TO MAINTAIN ITS SETPOINT. TO PREVENT SHORT CYCLES, THE CONTROLLER SHALL ENSURE THAT THE UNIT IS AT LEAST 60 SECONDS IN COOLING MODE BEFORE IT CAN START ANOTHER COOLING CYCLE.

THE UNIT SHALL MANAGE THE ZONE TEMPERATURES BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING:

- AHU, THE UNIT SHALL MAINTAIN ZONE TEMPERATURES BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING:
- DX COOLING,
- GAS HEAT AND ECONOMIZER OPERATION SERVING DUCT MOUNTED TERMINAL UNITS
- ECONOMIZER.
- LAST IN, FIRST OUT (LIFO), TO MAINTAIN CO2 LEVELS.
- TO MAINTAIN SPACE TEMPERATURE SET POINTS. INTERLOCK COMPRESSOR WITH INDOOR FAN TO OPERATE SIMULTANEOUSLY.
EXISTING STRUCTURAL FRAMING

ROOF INSULATION

WELD OR BOLT CURB TO STRUCTURAL FRAMING
24" MIN.

ROOFING BASE FLASHING

TWO-PIECE COUNTERFLASHING

PREFABRICATED ROOF CURB W/ INTEGRAL FIBER GLASS INSULATION

EXISTING STEEL DECK

ROOFTOP UNIT BASE RAIL

CURB GASKET

2X4 WOOD NAILER

PERLITE CANT STRIP

Pounds to Inches Gas Pressure Regulator

MIN. 10 PIPE DIAMETERS

TEST TEE

1"

EXISTING SHUT-OFF VALVE

NOTES:

1. BASIS OF DESIGN SIMILAR TO THERMOCURB MANUFACTURER MODEL "TEMS-3".
2. WELDED 18 GAUGE GALVANIZED STEEL SHELL, BASE PLATE AND COUNTERFLASHING.
3. FULLY MITERED END SECTIONS WITH INTERNAL BULKHEAD REINFORCEMENT.
4. CONTRACTOR SHALL VERIFY LENGTH OF ROOF CURB PRIOR TO ORDERING.

24" HIGH PREFAB CURB CAP FLASHING

EXISTING FINISHED ROOF

NEW CONDENSING UNIT ANCHOR CONDENSING UNIT TO SUPPORT CURB

BOTTOM OF ROOFTOP UNIT BASE RAIL

PIPE FULL SIZE OF AIR HANDLING UNIT DRAIN CONNECTION

NOTES:

1. LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
2. DRAW-THRU: SUBTRACT SCHEDULED E.S.P. FROM T.S.P. THEN ADD 1/2 OF NOTE 2 DIMENSION BUT NOT LESS THAN 2".
3. BLOW-THRU: SUBTRACT SCHEDULED E.S.P. FROM T.S.P. THEN ADD 1/2 OF NOTE 2 DIMENSION BUT NOT LESS THAN 2".
4. ROUTE TO NEAREST ROOF DRAIN. DO NOT COMBINE WITH OTHER CONDENSATE PIPES.

FLEX CONN.

FLEXIBLE CONNECTOR

UNFACED FIBERGLASS INSULATION

EXISTING ROOF PACK TIGHT WITH INSULATION AND SEAL WITH NON-HARDENING ACOUSTICAL SEALANT

ROOFTOP AIR HANDLER (RTU) WITH MANUFACTURERS INTERNAL VIBRATION ISOLATION

2 LAYERS 5/8" GYP BOARD

2" SEMI-RIGID INSULATION (DUCT BOARD)

EXISTING HOLE IN ROOF DECK.

INSTALL GYP BOARD AS TIGHT AS POSSIBLE AROUND DUCTWORK

NEOPRENE VIBRATION ISOLATION
### ROOFTOP UNIT SCHEDULE (BASE BID)

<table>
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<tr>
<th>UNIT NO.</th>
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### AIR CONDITIONING UNIT SCHEDULE (ALTERNATE #1)

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### VAV BOX SCHEDULE (EXISTING)

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