MECHANICAL ABBREVIATIONS

ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
ARCH	ARCHITECTURAL
BTUH	BRITISH THERMAL UNITS PER HOUR
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
COND	CONDENSATE
DB	DRY BULB
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
(E)	EXISTING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
°F	DEGREES FAHRENHEIT
FD	FIRE DAMPER
FL	FLOOR
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
FT	FEET
HP	HORSEPOWER
IN	INCHES
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LF	LINEAR FEET
MCA	MINIMUM CIRCUIT AMPS
MBH	THOUSAND BTU PER HOUR
MD	MOTORIZED DAMPER
OA	OUTSIDE AIR
OBD	OPPOSED BLADE VOLUME DAMPER
PH	PHASE
QTY	QUANTITY
RA	RETURN AIR
RF	RETURN FAN
RLA	RATED LOAD AMPS
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SF	SUPPLY FAN
SD	SMOKE DAMPER
SFD	SMOKE AND FIRE DAMPER
SL	SOUND LINING
SP	STATIC PRESSURE
SQ	SQUARE
TG	TRANSFER GRILLE
TYP	TYPICAL
V	VOLTS
VAV	VARIABLE AIR VOLUME
w/	WITH
WB	WET BULB
WG	WATER GAUGE

MECHANICAL SYMBOLS

- SUPPLY AIR DEVICE (SQUARE AND ROUND)
- RETURN AIR DEVICE
- EXHAUST AIR DEVICE
- DUCTWORK
- SOUND LINED DUCT
- DUCT DROP OR RISE IN DIRECTION SHOWN
- FLEXIBLE CONNECTION
- ELBOW WITH TURNING VANES
- CONICAL TAP
- SD — SMOKE DAMPER (SD)
- FD — FIRE DAMPER (FD)
- VD — VOLUME DAMPER (V.D.)
- MD — MOTORIZED DAMPER (M.D.)
- REMOTE TEMPERATURE SENSOR
- AIR OUT OF AIR TERMINAL
- AIR INTO AIR TERMINAL
- –RS– REFRIGERANT SUCTION
- –RL– REFRIGERATION LIQUID
- –D– CONDENSATE DRAIN
- PITCH PIPING DOWN IN DIRECTION SHOWN
- PIPE TURNING UP
- PIPE TURNING DOWN
- SMOKE WALL
- THERMOSTAT (WITH GAURD)
- ø ROUND
- FLAT OVAL
- S — DUCT SMOKE DETECTOR
- VAV BOX TYPE
- VAV BOX NECK SIZE
- VAV BOX KW

MECHANICAL GENERAL NOTES

1. SEE ARCHITECTURAL DRAWINGS FOR SUPPORT DETAILS OF ALL ROOF MOUNTED EQUIPMENT AND FOR THE LOCATION OF DUCTS THROUGH ROOF.

2. MOUNT AND CONNECT EACH ITEM OF EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

3. LOCATION OF EQUIPMENT, PIPING, AND OTHER MECHANICAL WORK IS INDICATED DIAGRAMMATICALLY BY THE DRAWINGS. DETERMINE EXACT LOCATIONS ON THE JOB SITE, SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF OTHER CONTRACTORS.

4. COORDINATE ROOF CURB HEIGHTS AND TYPE WITH CONSTRUCTION PRIOR TO ORDERING EQUIPMENT.

5. CONTRACTOR SHALL, AFTER INSTALLATION AND START–UP, THOROUGHLY CHECK EACH ITEM OF EQUIPMENT FOR VIBRATION TRANSMISSION TO THE STRUCTURE OR EXCESSIVE NOISE. IF EITHER OCCURS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING THE FAULTY SITUATION IMMEDIATELY.

6. WHEREVER PIPES, CONDUITS OR OTHER ITEMS PASS THROUGH FIRE RATED WALLS AND FLOORS, THE CONTRACTOR SHALL ADEQUATELY FIRE STOP THE SPACE BETWEEN THE ITEMS AND THE MASONRY OR THE SPACE BETWEEN THE ITEM AND SLEEVE. FIRE STOP SHALL BE A NON– COMBUSTIBLE, NON–MELTING, APPROVED MATERIAL.

7. ALL EXISTING EQUIPMENT, OTHER THAN DUCTWORK, WIRING AND AIR TERMINALS, REMOVED SHALL BECOME THE PROPERTY OF THE OWNER AND SHALL BE REMOVED, STORED, OR DISPOSED OF AT THE DIRECTION OF THE OWNER.

8. ALL OPENINGS IN WALLS, CEILINGS AND FLOORS RESULTING FROM DUCT DEMOLITION SHALL BE CLOSED AND FINISHED TO MATCH THE SURROUNDING AREAS BY THE GENERAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING LOCATIONS.

9. PROVIDE ACCESS PANELS IN DUCTWORK IN A LOCATION TO SERVICE FIRE DAMPERS AND SMOKE DAMPERS. ACCESS PANELS SHALL BE OF THE INSULATED DOOR TYPE ON ALL INSULATED DUCTS AND SHALL NOT BE COVERED BY DUCT INSULATION. ACCESS PANELS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS. MINIMUM SIZE OF ACCESS PANELS SHALL BE 12" X 12" EXCEPT WHERE DUCT IS LESS THAN 14" WIDE IN WHICH CASE ONE DIMENSION SHALL BE 12" AND THE OTHER SHALL BE 2" LESS THAN THE DUCT WIDTH. ACCESS DOORS SHALL BE ACCESSIBLE.

10. COORDINATE MECHANICAL EQUIPMENT ELECTRICAL REQUIREMENTS PRIOR TO SUBMISSION OF SHOP DRAWINGS. DEVIATIONS FROM THE MECHANICAL EQUIPMENT "BASIS OF DESIGN" OR "PROTOTYPE" ELECTRICAL DATA SHALL BE AT NO COST TO THE OWNER.

11. POWER FOR VAV BOX CONTROLS AND ACTUATORS SHALL BE THE RESPONSIBILITY OF THE CONTROLS CONTRACTOR. ALL WIRING ABOVE 24 VOLTS SHALL BE INSTALLED IN ACCORDANCE WITH THE ELECTRICAL SPECIFICATIONS AND THE "NATIONAL ELECTRIC CODE".

12. PROVIDE EXTERNAL TRAPS FOR CONDENSATE DRAIN LINES WHICH ARE NOT INTERNALLY TRAPPED.

13. RUN CONDENSATE DRAIN LINE FROM ROOFTOP UNITS TOWARDS NEAREST ROOF DRAIN.

14. PROAVIDE MANUAL MOTOR DISCONNECT SWITCH UNDER THE UTILITY VENT SET WEATHERPROOFED MOTOR HOUSING.

15. RUN ALL DUCTWORK TIGHT TO UNDERSIDE OF STRUCTURE ABOVE UNLESS OTHERWISE INDICATED.

16. ALL DUCT RUNOUTS ABOVE DRYWALL CEILINGS AND ALL EXPOSED DUCTWORK SHALL BE OF SHEET METAL CONSTRUCTION (NO FLEXIBLE DUCTWORK IS PERMITTED).

17. INSULATE SUPPLY, RETURN AND OUTSIDE AIR DUCTWORK. DUCTWORK INDICATED TO BE SOUND LINED SHALL NOT BE EXTERNALLY INSULATED IN ADDITION TO SOUND LINING.

18. PROVIDE 1/2" WIRE MESH SCREEN ON OPEN END DUCTS.

19. PROVIDE TEMPERATURE SENSORS WITH LOCKABLE CLEAR LEXAN GUARD. GUARD SHALL BE KENDALL MODEL TG OR APPROVED EQUAL.

21. PROVIDE VOLUME DAMPERS AT EACH BRANCH TAKE–OFF FROM MAIN SUPPLY, RETURN AND EXHAUST DUCT.

22. AIR DEVICE NECK SIZES SHALL BE AS INDICATED ON DRAWINGS. DUCT DROPS SHALL BE CLOSELY COORDINATED WITH OTHER TRADES TO AVOID CONFLICT WITH LIGHTING FIXTURES, ETC.

23. ANY CHANGES TO DUCT SIZES DUE TO FIELD CONDITIONS SHALL BE MADE ONLY IF THE DUCT SIZE FREE AREA IS MAINTAINED AND SUBMITTED TO ENGINEER FOR APPROVAL.

24. PENETRATIONS THROUGH ROOF SHALL BE WATERTIGHT.

25. PROVIDE TURNING VANES IN ALL MITERED ELBOWS.

28. SOUND LINE ALL SUPPLY AND RETURN AIR DUCTS AS SPECIFIED AND SHOWN ON DRAWINGS. LINING SHALL MEET THE SAFETY STANDARDS AS ESTABLISHED BY NFPA 90A.

29. CONNECT ALL DUCTWORK TO EQUIPMENT WITH FLEXIBLE CONNECTIONS.

30. PROVIDE SMOKE DAMPER DUCTS PENETRATING SMOKE PARTITIONS AND AS INDICATED ON DRAWINGS. INTERLOCK SMOKE DAMPER WITH FIRE ALARM SYSTEM.

31. INSULATION OF DUCTWORK THROUGH NON–RATED WALLS SHALL BE CONTINUOUS THROUGH THE WALL PENETRATION.

32. EXPOSED ROUND DUCTWORK SHALL BE LOCKED SPIRAL SEAM TYPE.

33. FURNISH AND INSTALL ALL DUCT HANGERS AND SUPPORTS IN ACCORDANCE WITH SECTION IV OF "HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE" AS PUBLISHED BY SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA), LATEST EDITION.

34. PROVIDE COMBINATION FIRE/SMOKE DAMPERS WHERE DUCT PENETRATE SMOKE WALLS. INTERLOCK DAMPER MOTORS WITH AIR HANDLING UNIT OR EXHAUST FAN SERVING THE DUCT SYSTEM.

35. PROVIDE FIRE DAMPERS IN RATED WALLS AND AS INDICATED ON DRAWINGS.

36. THE BOTTOM OF THE OUTSIDE AIR INTAKE OPENING LOCATED A MINIMUM OF 3'–0" ABOVE THE ROOF. EXTEND OUTSIDE AIR INTAKE ON RTU AS REQUIRED TO BE 3'–0" ABOVE ROOF.

37. DUCTWORK RUNNING PARALLEL TO A FIRE RATED WALL SHALL BE A MINIMUM OF 6" AWAY FROM THE WALL.

38. COORDINATE DUCTWORK LAYOUTS WITH ACTUAL ROOF TRUSS ARRANGEMENTS. PROPOSED DUCTWORK DRAWINGS SHALL BE SUBMITTED TO THE MECHANICAL ENGINEER BEFORE FABRICATING ANY DUCTWORK OR ORDERING ANY MECHANICAL EQUIPMENT.

39. PROVIDE INSULATED SUB–BASE FOR THERMOSTATS LOCATED ON EXTERIOR WALLS.

40. THERMOSTAT LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS. MOUNT THERMOSTATS ADJACENT TO LIGHT SWITCH, UNLESS NOTED OTHERWISE.

41. PROVIDE A SMOKE DETECTOR IN THE SUPPLY AND RETURN DUCT OF EACH UNIT TO DE–ENERGIZE THE SUPPLY AIR FAN SHOULD PRODUCTS OF COMBUSTION BE SENSED.

ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED AND CONNECTED IN ACCORDANCE WITH ANY DIRECTIONS OR WRITTEN RECOMMENDATIONS OF THE MANUFACTURER. ANY DEVIATIONS FROM THESE DRAWINGS AND SPECIFICATIONS REQUIRED TO COMPLY WITH THESE MANUFACTURER'S DIRECTIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO PROCEEDING WITH THE WORK AFFECTED. EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

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PROJECT:

TREE OF LIFE - PUBLIC CHARTER SCHOOL

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WASHINGTON DC. 20018

DRAWING TITLE:

COVER SHEET
MECHANICAL

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CONSTRUCTION SET	18 APRIL 2005

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No. PE8239

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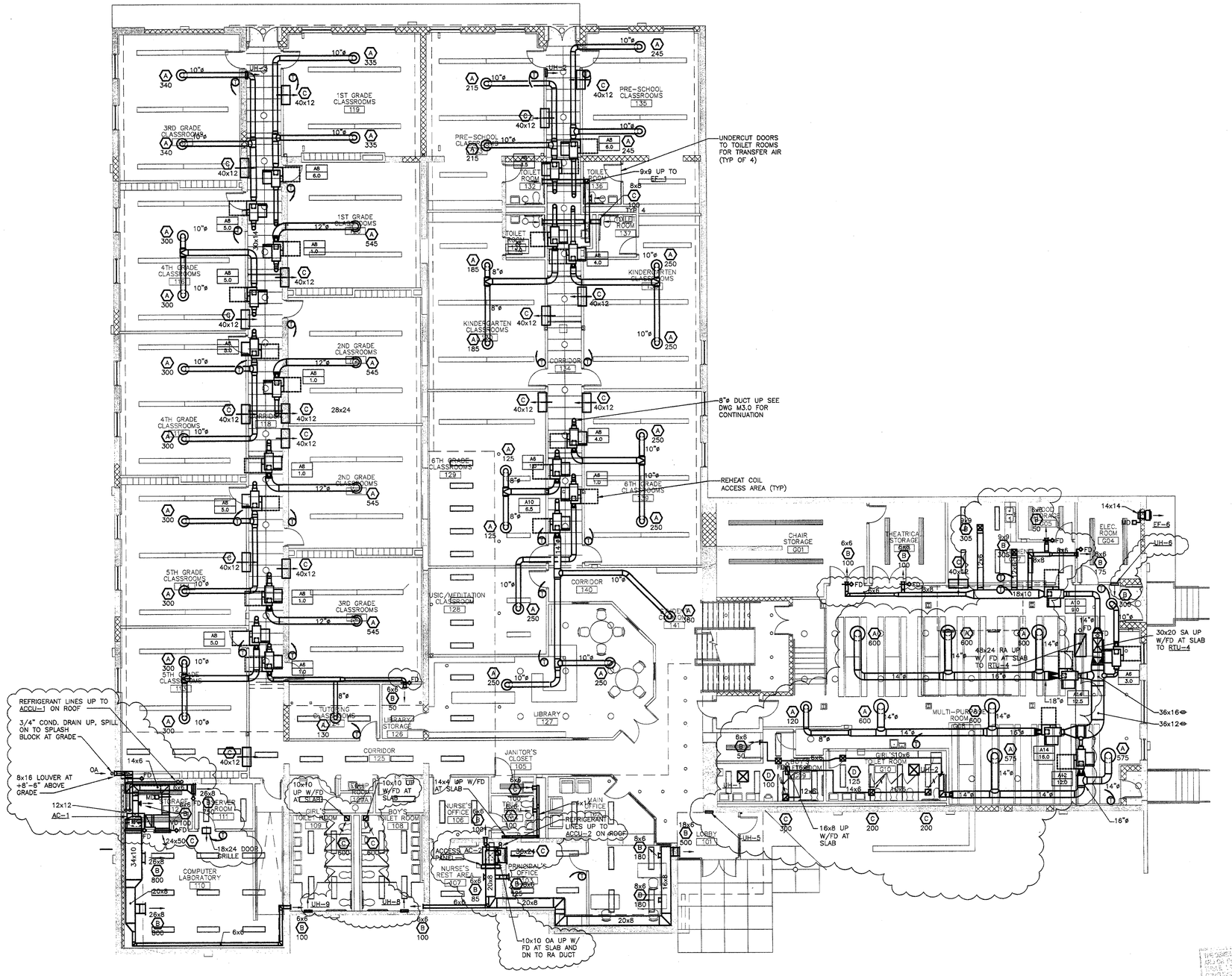

GROUND AND FIRST FLOOR PLAN – MECHANICAL

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

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GROUND AND FIRST FLOOR PLAN
MECHANICAL

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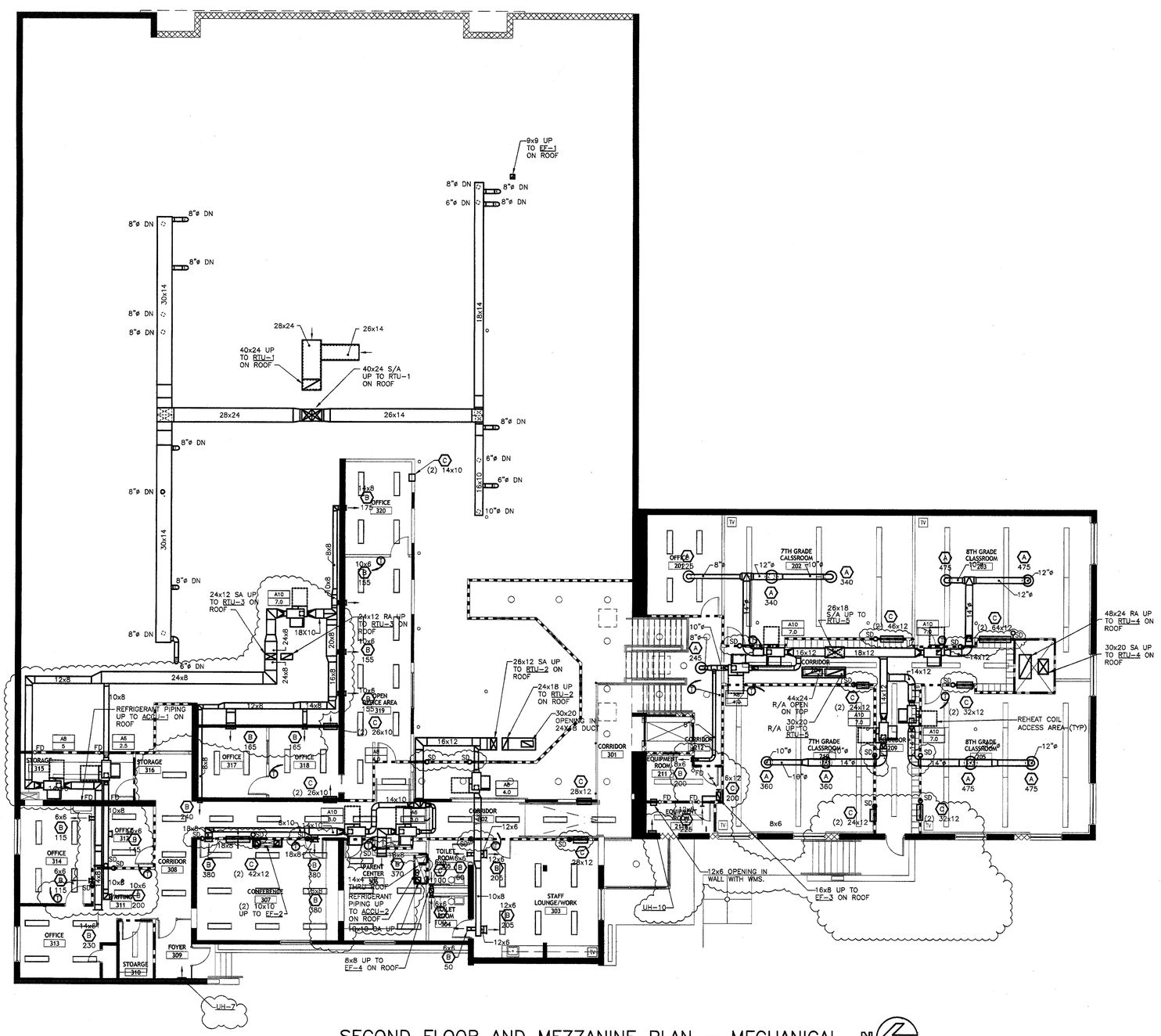

SECOND FLOOR AND MEZZANINE PLAN – MECHANICAL

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

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SECOND FLOOR AND MEZZANINE PLAN MECHANICAL

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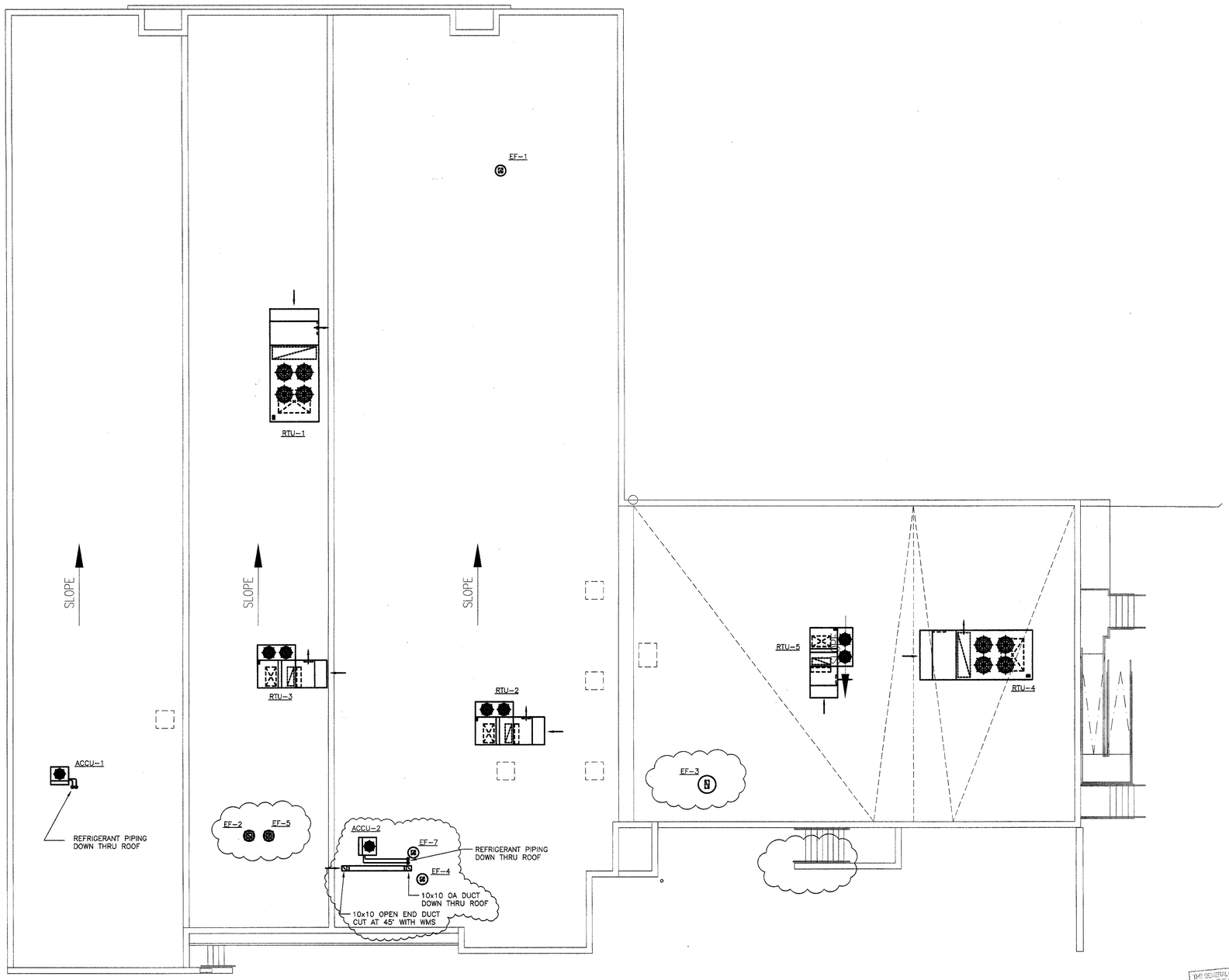

ROOF PLAN – MECHANICAL

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

ROOF

THE GENERAL LAYOUT OF THE MECHANICAL SYSTEM AND OF THE MECHANICAL EQUIPMENT SHOWN ON THESE DRAWINGS IS VIEWED AS PERFORMANCE IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THE D.C. CONSTRUCTION CODES AND IS APPROVED.

JUL 18 2005

Mechanical Engineering Section

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ROOF PLAN
MECHANICAL

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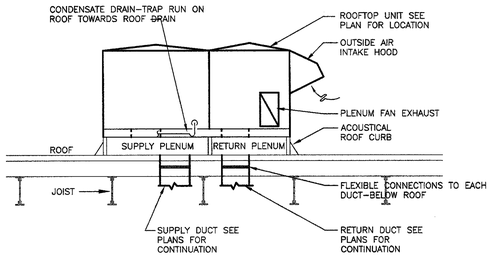
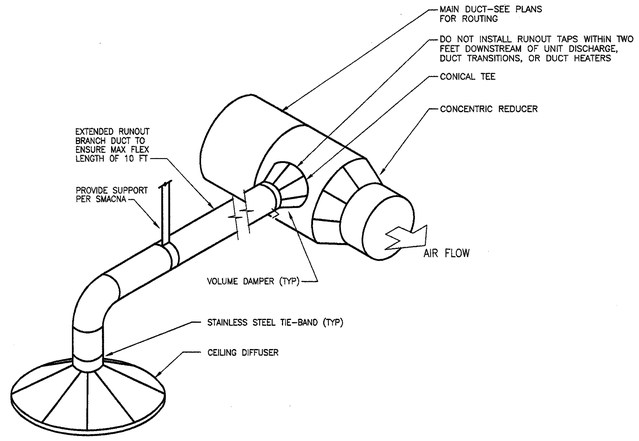
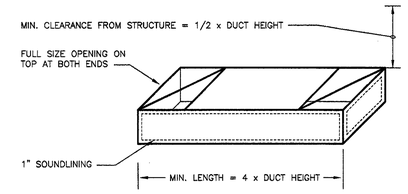


NOTE: CONTROL WIRING SHALL BE RUN IN CONDUIT.

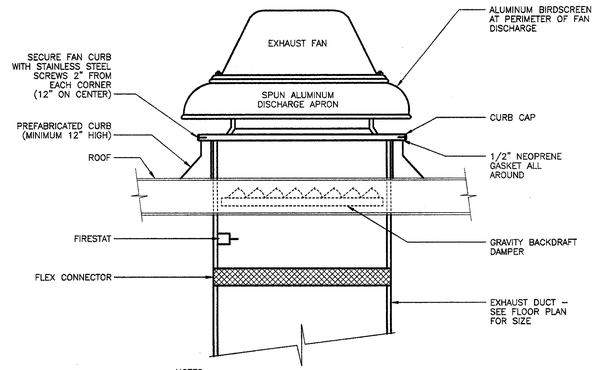
ROOFTOP UNIT DETAIL
NO SCALE



CEILING DIFFUSER CONNECTION DETAIL
NO SCALE

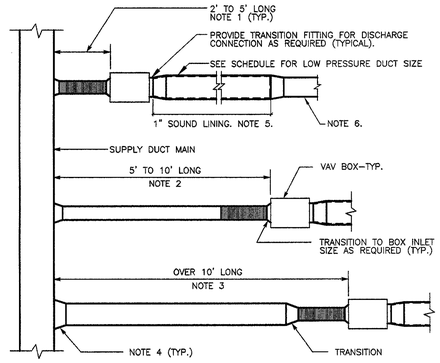


TYPICAL RETURN AIR TRANSFER DUCT DETAIL
NO SCALE



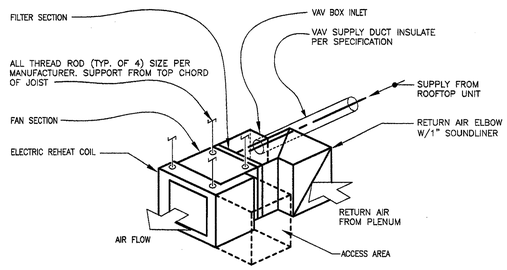
NOTES
1. CURB AND FAN SHALL BE FROM THE SAME MANUFACTURER.
2. RUN POWER SUPPLY LEADS IN CORNER INSIDE CURB.

POWER ROOF VENTILATOR DETAIL
NO SCALE



NOTES:
1. PROVIDE 2' MIN. STRAIGHT FLEXIBLE DUCT AT BOX INLET (TYPICAL).
2. PROVIDE 5' MAX. FLEXIBLE DUCT OF STANDARD INLET DUCT SIZE PLUS SHEET METAL DUCT OF STANDARD INLET DUCT SIZE FOR COMBINED LENGTH UP TO 10' MAX (SEE SCHEDULE FOR SIZES).
3. PROVIDE 5' MAX. FLEXIBLE DUCT OF STANDARD INLET DUCT SIZE PLUS SHEET METAL DUCT OF INCREASED INLET DUCT SIZE FOR COMBINED LENGTH OVER 10' LONG (SEE SCHEDULE FOR SIZES).
4. PROVIDE RECTANGULAR TO ROUND, CONICAL TAP, OR EQUIVALENT AT EACH CONNECTION TO SUPPLY DUCT MAIN.
5. RUN LINING FOR 10 FT. OR THRU FIRST ELBOW (TYPICAL).
6. PROVIDE DOWNSTREAM TRANSITION WHERE SHOWN ON PLANS (TYPICAL).

VAV BOX DETAIL
NO SCALE



ALL MECHANICAL EQUIPMENT AND/OR APPLIANCES SHALL BEAR THE LABEL OF AN APPROVED AGENCY SHALL BE APPROVED FOR THE PROPOSED USE AND LOCATION AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

FAN POWERED VAV BOX DETAIL
NO SCALE

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