GENERAL MECHANICAL SYMBOLS

- REVISION NUMBER - SHOWN ON PLANS
- POINT WHERE NEW CONNECTS TO EXISTING
- NUMBER OF DETAIL ON SHEET / NUMBER OF SHEET WHERE DETAIL APPEARS
- KEYNOTE
- CONTINUATION SYMBOL
- Room 5 — ROOM NAME AND NUMBER
- ITEM TO BE DEMOLISHED
- AREA NOT IN CONTRACT
- 2" — PIPE SIZE TAG (DIAMETER)
- ABOVE GROUND PIPING
- 1/8" / 12" SLOPE — PIPE SLOPE TAG
- BELOW GROUND PIPING
- INVERT: -105' - 1" — PIPE INVERT ELEVATION TAG
- (E) — EXISTING PIPE TAG
- PIPING BEING DEMOLISHED

ABBREVIATIONS

Ø	ROUND	LVR	LOUVER
ABV	ABOVE	LWT	LEAVING WATER TEMPERATURE
AC	AIR CONDITIONING	M/A	MIXED AIR
AD	AREA DRAIN	MAX	MAXIMUM
ADD	ADDENDUM	MBH	ONE THOUSAND BTU PER HOUR
AFF	ABOVE FINISHED FLOOR	MCF	ONE THOUSAND CUBIC FEET
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	MD	MOTORIZED DAMPER
ALT	ALTERNATE	MECH	MECHANICAL
AP	ACCESS PANEL	MFR	MANUFACTURER
ARCH	ARCHITECT/ARCHITECTURAL	MIN	MINIMUM
BFF	BELOW FINISHED FLOOR	MISC	MISCELLANEOUS
BLW	BELOW	MTR	MOTOR
BTU	BRITISH THERMAL UNITS	MUA	MAKE-UP/AIR
BTUH	BRITISH THERMAL UNITS PER HOUR	NC	NOISE CRITERIA
CAP	CAPACITY	NC	NORMALLY CLOSED
CB	CATCH BASIN	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	NO	NUMBER
CLG	CEILING	NO	NORMALLY OPEN
CO	CLEAN OUT	NTS	NOT TO SCALE
CW	COLD WATER	O	OXYGEN
D	DEGREE	O/A	OUTSIDE AIR
DB	DRY BULB	ORD	OVERFLOW ROOF DRAIN
DIA	DIAMETER	PD	PRESSURE DROP
DN	DOWN	PIV	POST INDICATOR VALVE
DW	DISTILLED WATER	PLBG	PLUMBING
EA	EACH	PRESS	PRESSURE
EAT	ENTERING AIR TEMPERATURE	PRV	PRESSURE REDUCING VALVE
ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH
EQUIP	EQUIPMENT	PSIG	POUNDS PER SQUARE INCH GAUGE
EWC	ELECTRIC WATER COOLER	PWR	POWER
EWT	ENTERING WATER TEMPERATURE	R	DUCT RISER
E/A	EXHAUST AIR	R/A	RETURN AIR
EXIST	EXISTING	RCP	RADIANT CEILING PANEL
F	DEGREES FAHRENHEIT	RD	ROOF DRAIN
FCO	FLOOR CLEAN OUT	REC	RECESSED
FD	FLOOR DRAIN	RED	REDUCER
FDC	FIRE DEPARTMENT CONNECTION	RH	RELATIVE HUMIDITY
FL	FLOOR	RL/A	RELIEF AIR
FO	FUEL OIL	RM	ROOM
FOV	FUEL OIL VENT	RPM	REVOLUTIONS PER MINUTE
FOR	FUEL OIL RETURN	RW	RAIN WATER
FOS	FUEL OIL SUPPLY	SF	SQUARE FOOT
FPM	FEET PER MINUTE	S/A	SUPPLY AIR
FS	FLOOR SINK	SAN	SANITARY
FT	FOOT/FEET	SF	SQUARE FOOT
FTR	FIN TUBE RADIATION	SD	SMOKE DAMPER
GAL	GALLON	SM	SURFACE MOUNT
GF	GAS-FIRED	SP	STANDPIPE
GC	GENERAL CONTRACTOR	SP	STATIC PRESSURE
GPM	GALLONS PER MINUTE	STM	STEAM
GW	GREASE WASTE	T	THERMOSTAT
HB	HOSE BIB	TD	TEMPERATURE DROP
HP	HORSE POWER	TDR	TRENCH DRAIN
HTG	HEATING	TEMP	TEMPERATURE
HTR	HEATER	TYP	TYPICAL
HW	HOT WATER	UG	UNDERGROUND
HYD	HYDRANT	VAC	VACUUM
ID	INDIRECT	V	VENT
IN	INCH	VAV	VARIABLE AIR VOLUME
INV	INVERT	VENT	VENTILATION
LB	POUND	VTR	VENT THROUGH ROOF
LB/HR	POUNDS PER HOUR	W	WASTE
LAT	LEAVING AIR TEMPERATURE	WB	WET BULB
LP	LOW PRESSURE	WCO	WALL CLEAN OUT
LPG	LIQUEFIED PETROLEUM GAS	WH	WALL HYDRANT

EQUIPMENT ABBREVIATIONS

AC	AIR CONDITIONING UNIT	ET	EXPANSION TANK
ACCU	AIR COOLING CONDENSING UNIT	EWH	ELECTRIC WATER HEATER
AHU	AIR HANDLING UNIT	FCU	FAN COIL UNIT
AS	AIR SEPARATOR	FP	FIRE PUMP
B	BOILER	GI	GREASE INTERCEPTOR
CH	CHILLER	GRV	GRAVITY ROOF VENTILATOR
CT	COOLING TOWER	HWP	HEATING WATER PUMP
CUH	CABINET UNIT HEATER	HRU	HEAT RECOVERY UNIT
CHWP	CHILLED WATER PUMP	PRV	POWER ROOF VENTILATOR
DBP	DOMESTIC WATER BOOSTER PUMP	RE	RETURN/EXHAUST FAN
DC	DUCT MOUNTED COIL	RTU	ROOFTOP UNIT
DCP	DOMESTIC WATER CIRCULATING PUMP	SP	SUMP PUMP
EF	EXHAUST FAN	UH	UNIT HEATER
EDC	ELECTRIC DUCT COIL	WH	WATER HEATER

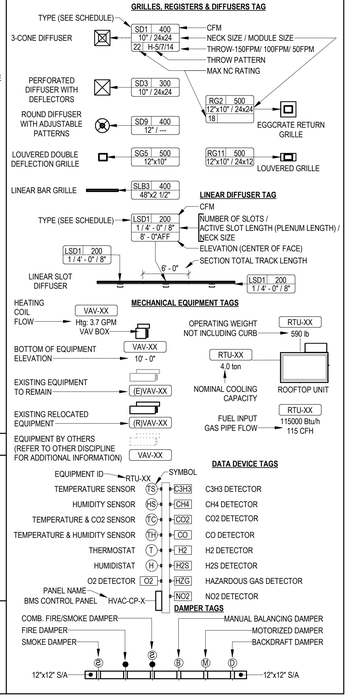
* NOTE *

ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET. THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.

HVAC SYMBOLS

- 18"x12" — SQUARE DUCT SIZE TAG (WIDTH x HEIGHT)
- 18"/12" — OVAL DUCT SIZE TAG (WIDTH / HEIGHT)
- 18"Ø — ROUND DUCT SIZE TAG (DIAMETER)
- (E) — EXISTING DUCT TAG
- DUCT BEING DEMOLISHED
- 18"x18" S/A — SUPPLY AIR
- 18"x18" S-O/A — CONDITIONED OUTSIDE AIR
- 18"x18" O/A — OUTSIDE AIR
- 18"x18" R/A — RETURN AIR
- 18"x18" T/A — TRANSFER AIR
- 18"x18" E/A — EXHAUST AIR
- 18"x18" L/A — RELIEF AIR
- 18"x18" GE/A — GREASE EXHAUST AIR
- 18"x18" CE/A — CONDENSATE EXHAUST AIR
- 18"x18" SE/A — SMOKE EXHAUST AIR
- 6"Ø FLUE — EXHAUST GAS FLUE
- 6"Ø C/A — COMBUSTION AIR
- DROP — RECTANGULAR SUPPLY/OUTSIDE AIR DUCT RISE
- DROP — ROUND SUPPLY/OUTSIDE AIR DUCT RISE
- DROP — RECTANGULAR RETURN/TRANSFER AIR DUCT RISE
- DROP — ROUND RETURN/TRANSFER AIR DUCT RISE
- DROP — RECTANGULAR EXHAUST/RELIEF AIR DUCT RISE
- DROP — ROUND EXHAUST/RELIEF AIR DUCT RISE

GRILLES, REGISTERS & DIFFUSERS TAG



LINEAR DIFFUSER TAG

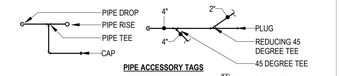
MECHANICAL EQUIPMENT TAGS

DATA DEVICE TAGS

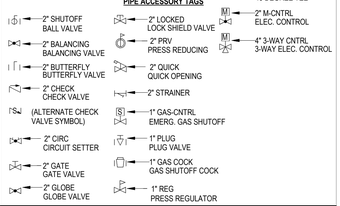
DAMPER TAGS

PIPING SYMBOLS

- CHWR — CHILLED WATER RETURN
- CHWS — CHILLED WATER SUPPLY
- CD — CONDENSATE DRAINAGE
- CWR — CONDENSER WATER RETURN
- CWS — CONDENSER WATER SUPPLY
- GWR — GEOTHERMAL WATER RETURN
- GWS — GEOTHERMAL WATER SUPPLY
- HWR — HEATING WATER RETURN
- HWS — HEATING WATER SUPPLY
- G — NATURAL GAS
- PG — PROPANE GAS
- REF-L — REFRIGERANT-LIQUID
- REF-S — REFRIGERANT-SUCTION
- REF-HG — REFRIGERANT-HOT GAS
- STM — STEAM
- CDR — CONDENSATE RETURN



PIPE ACCESSORY TAGS



MECHANICAL NOTES

A. MECHANICAL PLANS ARE INTENDED TO PROVIDE INFORMATION FOR INSTALLATION OF A COMPLETE OPERATING MECHANICAL SYSTEM. PROVIDE ALL ESSENTIAL LABOR, MATERIALS AND DEVICES REQUIRED TO PRODUCE A QUALITY END PRODUCT.

B. CONTRACTOR SHALL REVIEW AND BECOME FAMILIAR WITH THE WORK OF ALL TRADES FOR PURPOSES OF COORDINATION AND ROUTING. CONTRACTOR SHALL PROVIDE REQUIRED PLANNING, COORDINATION AND SEQUENCING OF HVAC INSTALLATION WITH BUILDING COMPONENTS AND OTHER TRADES.

C. ALL WORK SHALL COMPLY WITH LOCAL, STATE, AND NATIONAL CODES. WORKMANSHIP SHALL MEET OR EXCEED INDUSTRY STANDARDS.

D. FABRICATE AND INSTALL DUCT PER SMACNA STANDARDS FOR 2-INCH WC WITH GALVANIZED METAL (26 GUAGE MINIMUM). ALL RADIUS ELBOWS AND TEES SHALL HAVE CENTERLINE RADIUS OF 1.5 X DUCT WIDTH. ALL SQUARE ELBOWS AND TEES SHALL HAVE TURNING VANES. PRIOR TO FABRICATION, MECHANICAL CONTRACTOR SHALL FIELD VERIFY STRUCTURAL OBSTRUCTIONS AND CEILING SPACE LIMITATIONS AND MAKE NECESSARY DUCT MODIFICATIONS INCLUDING CHANGING OF ASPECT RATIOS, ADDING OFFSETS, AND SHIFTING LOCATIONS. PROTECT DUCT BY STORING IN A CLEAN AND DRY ENVIRONMENT PRIOR TO INSTALLATION. COVER ENDS OF EXPOSED WORK AT THE END OF EVERY SHIFT.

E. ALL DUCT JOINTS, SEAMS AND BRANCH TAKEOFFS SHALL BE SEALED AIR-TIGHT WITH DUCT SEALANT EQUAL TO HARDCAST IRON-GRIP OR FOIL-GRIP TAPE EQUAL TO HARDCAST AFG-1402.

F. ROUND RUNOUTS SHALL HAVE SPIN-INS WITH DAMPERS, RECTANGULAR BRANCH DUCTS SHALL HAVE 45 DEGREE TAPS WITH AIR EXTRACTORS AND ALL TEES SHALL HAVE SPLITTER DAMPERS. PROVIDE ANY OTHER DEVICES REQUIRED TO BALANCE AIR SYSTEM.

G. FLEX DUCT SHALL HAVE METALIZED VAPOR BARRIER WITH MIN. R-VALUE OF 5.0. BOTH ENDS SHALL BE SECURED WITH NYLON BANDS AND METALIZED DUCT TAPE PER MFG'S RECOMMENDATIONS AND IN ACCORDANCE WITH U.L. 181B.

H. RIGID ROUND AND RECTANGULAR DUCT SHALL BE EXTERNALLY INSULATED WITH 2-INCH THICK 3/4 LB. DENSITY FIBERGLASS BLANKET WITH FSK VAPOR BARRIER AND A MIN. R-VALUE OF 6.5. STAPLE AND SEAL ALL JOINTS WITH 4-INCH-WIDE METALIZED DUCT TAPE EQUAL TO SHURFLEX SF-683.

I. COORDINATE THE EXACT LOCATION OF ALL CEILING DIFFUSERS, REGISTERS, AND GRILLES WITH NEW AND EXISTING LIGHTING. PROVIDE DIFFUSERS AND REGISTERS WITH 4-WAY BLOW PATTERN UNLESS OTHERWISE NOTED. INSULATE AND SEAL ALL GRILLE AND DIFFUSER NECKS TO MAINTAIN VAPOR BARRIER AND ELIMINATE CONDENSATION.

J. CONDENSATE DRAINS SHALL BE SUPPLIED FOR ALL COOLING EQUIPMENT. CONTRACTOR SHALL ENSURE PROPER INSTALLATION AND DRAINAGE AS REQUIRED BY FEDERAL, STATE, AND LOCAL CODES. CONDENSATE TRAPS FOR ALL AC UNITS SHALL BE SIZED AS RECOMMENDED BY UNIT MFG. CONDENSATE PIPING AND TRAPS SHALL BE SCHEDULE 40 PVC ROUTED TO EXTERIOR OR STORM DRAIN. INSULATE INTERIOR PIPING WITH 1/2-INCH-THICK UNICELLULAR INSULATION.

K. REFRIGERANT PIPING SHALL BE TYPE ACR COPPER WITH SILVER SOLDERED JOINTS. INSTALL PER EQUIPMENT INSTALLATION INSTRUCTIONS. INSULATION SHALL BE 1-INCH-THICK MINIMUM.

L. GAS PIPING SHALL BE A-53 SCHEDULE 40 BLACK STEEL WITH MALLEABLE FITTINGS. PIPING BELOW GRADE SHALL HAVE FRP COATING AND ABOVE GRADE SHALL BE PRIMED AND PAINTED. BOND ALL GAS PIPING ABOVE GRADE AND WITHIN BUILDING. PROVIDEMAGNETIC MARKER TAPE 12-INCHES ABOVE ALL BELOW GRADE PIPING.

M. ALL PIPING SHALL BE SUPPORTED AND SECURED WITH SUITABLE HANGERS, STRAPS OR PIPE STANDS. SUPPORT WITH NO DROOPS OR SAGS. ALL HANGERS AND ATTACHMENTS SHALL BE PLATED, GALVANIZED OR PAINTED. PROVIDE ISOLATION ON PIPING OF DISSIMILAR MATERIALS.

N. POWER WIRING, DISCONNECTS AND STARTERS NOT FURNISHED WITH HVAC EQUIPMENT AND FINAL CONNECTIONS SHALL BE BY THE E.C.

O. CONTROL WIRING, RELAYS AND INTERLOCKING DEVICES SHALL BE PROVIDED BY THE M.C.

P. UL LISTED DUCT SMOKE DETECTORS SHALL BE FURNISHED, INSTALLED AND TESTED BY THE M.C. THE E.C. SHALL PROVIDE 120V POWER TO EACH DUCT SMOKE DETECTOR WHERE REQUIRED. THE M.C. SHALL PROVIDE REMOTE ALARM/TEST STATIONS FOR EACH DUCT SMOKE DETECTOR.

Q. TEMPERATURE CONTROLS FOR EACH HEATING-COOLING SYSTEM SHALL CONSIST OF AN ELECTRONIC PROGRAMMABLE HEATING-COOLING THERMOSTAT WITH HEAT-OFF-COOL-AUTO SYSTEM SWITCH AND AUTO-ON FAN SWITCH. MOUNT THERMOSTATS 48-INCHES ABOVE FINISHED FLOOR AND A MINIMUM 8" FROM ANY OTHER SWITCHING DEVICES.

R. INSTALL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE AND REPAIR IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS, AS WELL AS SPECIFIC INSTRUCTIONS ON PLANS. PROVIDE A 4" HOUSEKEEPING PAD FOR EACH PIECE OF MECHANICAL EQUIPMENT. COORDINATE SIZES WITH MECHANICAL EQUIPMENT SELECTED.

S. PROVIDE FLEX CONNECTORS AT ALL DUCT TO EQUIPMENT CONNECTIONS NOT HAVING INTERNALLY ISOLATED FANS.

T. CONTRACTOR SHALL BALANCE AIR SYSTEM TO QUANTITIES INDICATED ON PLANS AND PROVIDE TYPE WRITTEN REPORT WITH O AND M MANUALS.

U. ALL EQUIPMENT AND SYSTEMS SHALL BE WASHED, MECHANICAL AREAS CLEANED AND PAINTED SURFACES TOUCHED UP TO MATCH FACTORY APPLIED FINISHES. ALL DUCT SYSTEMS AND AIR HANDLERS SHALL BE VACUUMED AND WIPED CLEAN ON THE INSIDE PRIOR TO TURNING THE PROJECT OVER TO THE OWNER. SYSTEMS THAT HAVE NOT BEEN ADEQUATELY PROTECTED DURING INSTALLATION WILL REQUIRE CLEANING AGAIN AT THE END OF THE PROJECT.

V. CONTRACTOR SHALL INSTALL A NEW SET OF PLEATED FILTERS BEFORE TURNING BUILDING OVER TO OWNER.

W. CONTRACTOR SHALL PROVIDE BUILDING OWNER WITH A COMPLETE OPERATING AND MAINTENANCE MANUAL INCLUDING EQUIPMENT BASIC DATA, CONTROL INFORMATION, ROUTINE MAINTENANCE ACTIONS AND SERVICE AGENCIES' NAME, PHONE NUMBER, AND ADDRESS.

HVAC SHEET INDEX

NVA

OWL CREEK VETERINARY HOSPITAL
587 S. BIRDNECK RD.
VIRGINIA BEACH, VA

VETERINARY ARCHITECTURE Unleashed
A Studio of RL Architecture, PLLC

ROGER LAYMAN ARCHITECT
PO Box 161
Davidson, NC 28036
ph. 704.756.3540
RLArchitecture.com

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

COMMONWEALTH OF VIRGINIA
BENJAMIN DONALD LEWIS
Lic. No. 0402054828
PROFESSIONAL ENGINEER

08/02/2022

DRAWING TITLE: HVAC TITLE SHEET

FOR CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

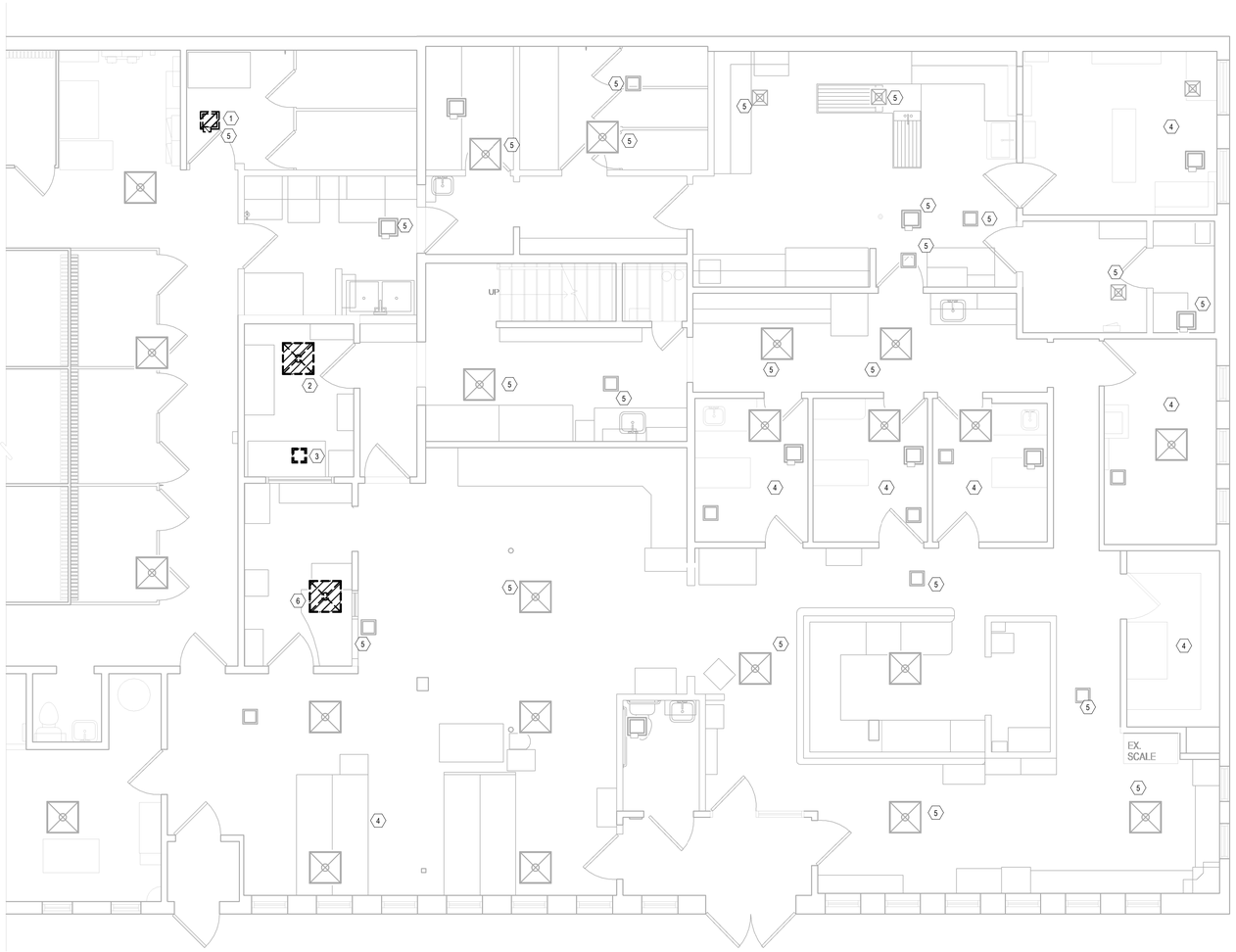
DATE	08/02/2022
PROJECT #	222S7
SCALE	AS NOTED
DRAWN BY	KAIROS PROJECT GROUP

M000

30"x42" PLOT SHEET 8/3/2022 11:01:23 AM

KEYNOTES

1. RELOCATE EXISTING EXHAUST FAN/GRILLE TO NEW ISO ROOM IF WORKING PROPERLY AND FLOW IS 90 CFM OR GREATER. TIE INTO EXISTING DUCT WORK. REPAIR OR REPLACE CEILING TILES.
2. CONTRACTOR TO RELOCATE EXISTING SUPPLY DIFFUSER TO NEW DENTAL ROOM. PATCH & REPAIR EXISTING CEILING GRID AND TILES.
3. CONTRACTOR TO RELOCATE EXISTING RETURN DIFFUSER TO NEW DENTAL ROOM. PATCH & REPAIR EXISTING CEILING GRID AND TILES.
4. NO NEW WORK IN THIS AREA. ALL DIFFUSERS, GRILLES, AND DUCTWORK TO REMAIN.
5. CONTRACTOR TO REMOVE AND STORE ALL DIFFUSERS, GRILLES AND FANS IN AREA WHERE CEILING IS BEING REMOVED. VERIFY DUCTWORK IS SUITABLE FOR REUSE, REFURBISH, REPAIR OR REPLACE AS NEEDED.
6. CONTRACTOR TO RELOCATE EXISTING SUPPLY DIFFUSER TO NEW EXAM ROOM 4 ROOM. PATCH & REPAIR EXISTING CEILING GRID AND TILES.



1 MD101 LEVEL 1 HVAC DEMOLITION PLAN
1/4" = 1'-0"

30"x42" PLOT SHEET 8/3/2022 11:01:27 AM

OWL CREEK VETERINARY HOSPITAL
587 S. BIRDNECK RD.
VIRGINIA BEACH, VA

VETERINARY ARCHITECTURE Unleashed
A studio of RL Architecture, PLLC

ROGER LAYMAN ARCHITECT
PO Box 161
Davidson, NC 28036
ph. 704.756.3540
RLArchitecture.com

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

COMMONWEALTH OF VIRGINIA
BENJAMIN DONALD LEWIS
Lic. No. 0402054828
PROFESSIONAL ENGINEER

08/02/2022

DRAWING TITLE:
LEVEL 1 MECHANICAL DEMOLITION PLAN

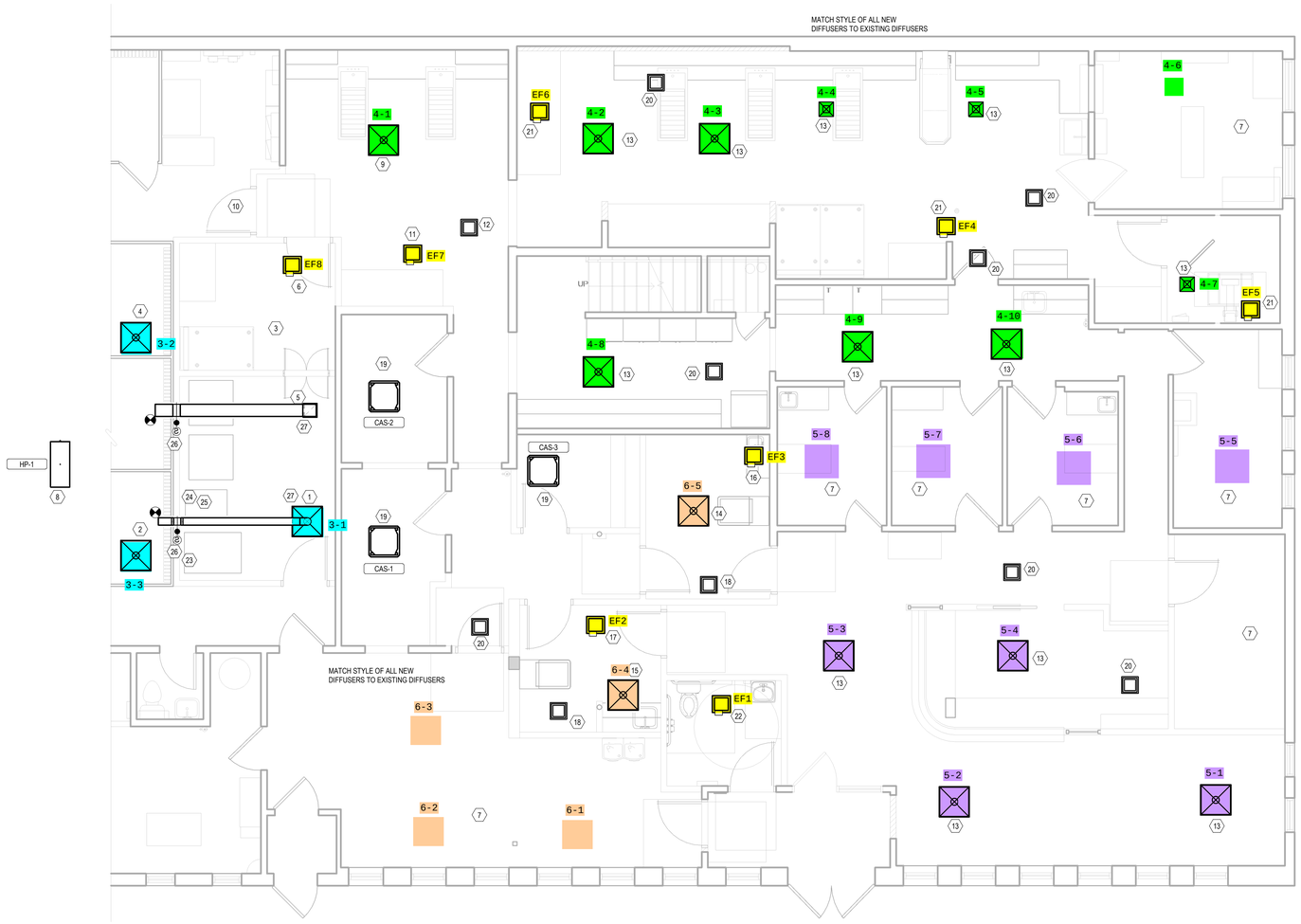
FOR CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

DATE	08/02/2022
PROJECT #	222S57
SCALE	AS NOTED
DRAWN BY	KAIROS PROJECT GROUP

MD101



1 M101 LEVEL 1 HVAC PLAN
1/4" = 1'-0"

KEYNOTES

1. EXISTING SUPPLY DIFFUSER, INSPECT, REFURBISH, REPAIR OR REPLACE, BALANCE DIFFUSER TO 154 CFM.
2. INSTALL NEW SUPPLY DIFFUSER, MATCH STYLE AND TYPE OF EXISTING DIFFUSER, BALANCE TO EQUAL THE ORIGINAL CFM OF RUN MINUS THE 154 CFM.
3. EXISTING SUPPLY DIFFUSER, INSPECT, REFURBISH, REPAIR OR REPLACE, BALANCE DIFFUSER TO 100 CFM.
4. INSTALL NEW SUPPLY DIFFUSER, MATCH STYLE AND TYPE OF EXISTING DIFFUSER, BALANCE TO EQUAL THE ORIGINAL CFM OF RUN MINUS THE 100 CFM.
5. INSTALL NEW FILTERED RETURN GRILL, BALANCE TO 154 CFM. ATTACH TO SAME AHU AS SUPPLY.
6. CONTRACTOR TO RELOCATE EXHAUST FAN/GRILLE FROM EXISTING ISO ROOM AND INSTALL IN NEW ISO ROOM. CONTRACTOR TO VERIFY FUNCTIONALITY OF FAN/GRILLE AND IT IS CAPABLE OF EXHAUSTING A MIN OF 90 CFM. REPAIR REFURBISH OR REPLACE AS NEEDED.
7. NO NEW WORK IN THIS AREA. ALL DIFFUSERS, GRILLES, AND DUCTWORK TO REMAIN.
8. MECHANICAL CONTRACTOR TO FURNISH AND INSTALL (WITH ROOFING CONTRACTOR) CONDENSING UNIT / HEAT PUMP SUPPORT RAILS SPANNING A MIN. OF TWO (2) BAR JOIST. MECHANICAL CONTRACTOR TO COORDINATE WITH ROOFING CONTRACTOR FOR TYPE OF RAIL REQUIRED. MECHANICAL CONTRACTOR TO MOUNT CONDENSING UNIT / HEAT PUMP LEVEL IN ALL DIRECTIONS.
9. CONTRACTOR TO RELOCATE SUPPLY DIFFUSER FROM OFFICE, BALANCE FLOW TO 150 CFM OR GREATER. TIE INTO EXISTING DUCT WORK. VERIFY EXISTING DUCTWORK IS SUITABLE FOR REUSE, REFURBISH, REPAIR, OR REPLACE AS NEEDED.
10. CONTRACTOR TO RELOCATE EXISTING DIFFUSER TO CLEAR NEW CONSTRUCTION.
11. CONTRACTOR TO RELOCATE/REINSTALL EXHAUST FAN /GRILLE FROM LAUNDRY TO THIS LOCATION. ATTACH TO EXISTING DUCTWORK. VERIFY DUCTWORK IS SUITABLE FOR REUSE, REFURBISH, REPAIR OR REPLACE AS NEEDED.
12. CONTRACTOR TO RELOCATE RETURN FROM OFFICE TO THIS LOCATION, BALANCE RETURN AIR FLOW SO THAT AIR FLOW OF EXISTING EXHAUST AND RETURN EQUAL SUPPLY AIR FLOW. TIE INTO EXISTING RETURN DUCT WORK. RE-ATTACH TO EXISTING DUCTWORK, VERIFY DUCTWORK IS SUITABLE FOR REUSE, REFURBISH, REPAIR OR REPLACE AS NEEDED.
13. CONTRACTOR TO RELOCATE/REINSTALL EXISTING SUPPLY GRILLES IN NEW CEILING. RE-ATTACH TO EXISTING DUCTWORK. VERIFY DUCTWORK AND DIFFUSER ARE SUITABLE FOR REUSE, REFURBISH, REPAIR OR REPLACE AS NEEDED.
14. CONTRACTOR TO RELOCATE EXISTING SUPPLY DIFFUSER TO NEW EXAM ROOM 4 ROOM. BALANCE TO 90CFM. PATCH & REPAIR EXISTING CEILING GRID AND TILES.
15. EXISTING SUPPLY DIFFUSER AND DUCTWORK TO REMAIN. CONTRACTOR TO REBALANCE TO 80 CFM. VERIFY DIFFUSER AND DUCTWORK ARE SUITABLE FOR REUSE, REFURBISH, REPAIR OR REPLACE AS NEEDED.
16. CONTRACTOR TO INSTALL NEW EXHAUST FAN/ GRILLE BALANCE TO 85 CFM. CONNECT TO EXISTING EXHAUST DUCTWORK. VERIFY DUCTWORK IS SUITABLE FOR REUSE, REFURBISH, REPAIR OR REPLACE AS NEEDED.
17. CONTRACTOR TO INSTALL NEW EXHAUST FAN/ GRILLE BALANCE TO 75 CFM. CONNECT TO EXISTING EXHAUST DUCTWORK. VERIFY DUCTWORK IS SUITABLE FOR REUSE, REFURBISH, REPAIR OR REPLACE AS NEEDED.
18. CONTRACTOR TO INSTALL NEW RETURN GRILLE AND DUCT. TIE INTO EXISTING DUCTWORK OF SAME AHU PROVIDING THE SUPPLY. BALANCE TO 15 CFM. CONNECT TO EXISTING EXHAUST DUCTWORK. VERIFY DUCTWORK IS SUITABLE FOR REUSE, REFURBISH, REPAIR OR REPLACE AS NEEDED.
19. CONTRACTOR TO INSTALL NEW MINI-SPLIT CASSETTES WITH DEDICATED OUTSIDE AIR. THESE OFFICES TO BE CONSIDERED ANIMAL FREE AREAS.
20. CONTRACTOR TO RELOCATE/REINSTALL EXISTING RETURN GRILLES IN NEW CEILING. RE-ATTACH TO EXISTING DUCTWORK. VERIFY DUCTWORK AND DIFFUSER ARE SUITABLE FOR REUSE, REFURBISH, REPAIR OR REPLACE AS NEEDED.
22. CONTRACTOR TO REMOVE AND STORE EXISTING FAN. REINSTALL/RELOCATE EXISTING EXHAUST FAN, REFURBISH, REPLACE AS NEEDED MUST EXHAUST A MIN OF 50 CFM. TIE BACK INTO EXISTING DUCTWORK. VERIFY DUCTWORK IS SUITABLE FOR REUSE, REFURBISH, REPAIR OR REPLACE AS NEEDED. COORDINATE WIRING WITH ELECTRICIAN SO FAN COMES ON WITH LIGHT.
23. CONTRACTOR TO RUN SOLID 6" GALV DUCT FROM DRYER TO EXISTING DRYER DUCT EXIT. NO SCREWS, RIVITS OR ANY OTHER TYPE OF FASTENER SHALL PENETRATE THE DUCT. IF DUCT RUN IS MORE THAN 35' A DRYER BOOSTER FAN SIMILAR TO A DVK WITH CURRENT SENSOR SWITH AND LINT TRAP SHALL BE INSTALLED IN THE LINE. A 90 DEGREE ELBOW SHALL COUNT AS 5 FT OF RUN. DUCT SHALL BE RUN ON THE OUTSIDE OF THE WALL AND THROUGH CEILING.
24. CONTRACTOR TO RUN SOLID 4" GALV DUCT FROM DRYER TO EXISTING DRYER DUCT EXIT. NO SCREWS, RIVITS OR ANY OTHER TYPE OF FASTENER SHALL PENETRATE THE DUCT. IF DUCT RUN IS MORE THAN 35' A DRYER BOOSTER FAN SIMILAR TO A DVK WITH CURRENT SENSOR SWITH AND LINT TRAP SHALL BE INSTALLED IN THE LINE. A 90 DEGREE ELBOW SHALL COUNT AS 5 FT OF RUN. DUCT SHALL BE RUN ON THE OUTSIDE OF THE WALL AND THROUGH CEILING.
25. WHERE DRYER DUCT IS LOCATED INSIDE A FIRE BARRIER CONTRACTOR TO WRAP DUCT WITH FYREWRAP DPS PER MANUFACTURE'S INSTRUCTIONS.
26. CONTRACTOR MUST USE A FIRE/SMOKE RATED DAMPER WHERE DUCT PASSES THROUGH A FIRE RATED WALL. DAMPER MUST EQUAL OR EXCEED FIRE RATING OF THE WALL.
27. WHERE DUCT PASSES THROUGH FIRE RATED CEILING CONTRACTOR SHALL USE A FIRE RATED DAMPER AND DIFFUSER/GRILLE THAT EQUALS OR EXCEEDS THE FIRE RATING OF THE CEILING.

NVA

OWL CREEK VETERINARY HOSPITAL
587 S. BIRDNECK RD.
VIRGINIA BEACH, VA

VETERINARY ARCHITECTURE Unleashed
A Studio of RL Architecture, PLLC

ROGER LAYMAN ARCHITECT
PO Box 161
Davidson, NC 28036
ph. 704.756.3540
RLArchitecture.com

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

COMMONWEALTH OF VIRGINIA
BENJAMIN DONALD LEWIS
Lic. No. 0402054828
PROFESSIONAL ENGINEER

08/02/2022

DRAWING TITLE: LEVEL 1 HVAC PLAN

FOR CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

DATE	08/02/2022
PROJECT #	222S57
SCALE	AS NOTED
DRAWN BY	KAIROS PROJECT GROUP

M101

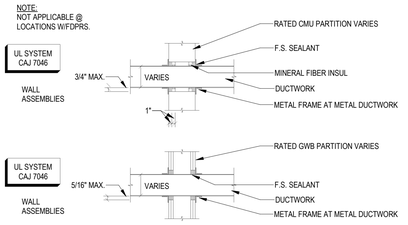
30"x42" PLOT SHEET 8/3/2022 11:01:24 AM

CASSETTE DUCTLESS SYSTEM SCHEDULE

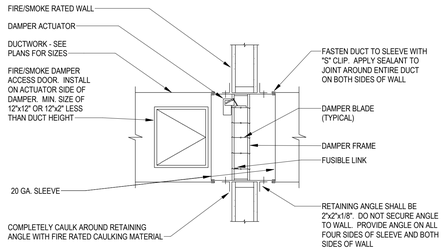
ID	LOCATION NAME	LOCATION NO.	MANUFACTURER	MODEL NO.	TYPE	FAN DESIGN AIRFLOW	FAN MOTOR ECM	NOMINAL COOLING CAP	UNIT WEIGHT	VOLT	PH	INTERLOCK CONDENSING UNIT ID	REMARKS
CAS-1			CARRIER CORPORATION	40MBCQ09---3		325 CFM	Yes	1 ton	42 lb	0 V	0	HP-1	HEAT PUMP AND CASSETTES TO BE PURCHASED AS A UNIT,VERIFY CAPACITY WITH MFG..
CAS-2			CARRIER CORPORATION	40MBCQ09---3		0 CFM	Yes	0 ton	0 lb	0 V	0	HP-1	HEAT PUMP AND CASSETTES TO BE PURCHASED AS A UNIT,VERIFY CAPACITY WITH MFG..
CAS-3			CARRIER CORPORATION	40MBCQ09---3		0 CFM	Yes	0 ton	0 lb	0 V	0	HP-1	HEAT PUMP AND CASSETTES TO BE PURCHASED AS A UNIT,VERIFY CAPACITY WITH MFG..

SPLIT SYSTEM AIR SOURCE HEAT PUMP

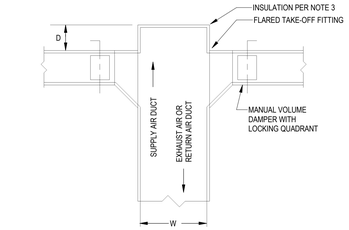
ID	LOCATION NAME	LOCATION NO.	MANUFACTURER	MODEL NO.	NOMINAL COOLING CAP	NOMINAL HEATING CAP	COMPRESSOR TYPE	COMPRESSOR LOW AMBIENT KIT	COMPRESSOR REFRIGERANT TYPE	SEER	UNIT WEIGHT	MCA	MOCP	VOLT	PH	REMARKS
HP-1	ROOF	-	CARRIER	38MGRQ24C--3	2 ton	24000 Btu/h	ROTARY INVERTER	Yes	R-410A	22	150 lb	0.0 A	15.0 A	280 V	1	



5 / M200 FIRESTOP DETAIL AT UNINSULATED DUCTWORK
NOT TO SCALE

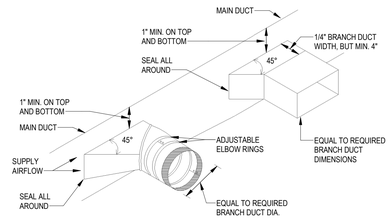


6 / M200 COMBINATION FIRE/SMOKE DAMPER INSTALLATION DETAIL
NO SCALE

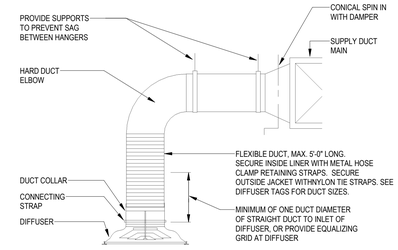


NOTES:
1. AIR CUSHION REQUIRED AT END OF RUN FOR BRANCH TAKE OFFS ILLUSTRATED
2. CUSHION DEPTH, D, EQUAL TO 1/2 THE GREATER OF H OR W, SUBJECT TO 6" MINIMUM, WHERE H = HEIGHT OF DUCT
3. SUPPLY AIR AND RETURN AIR DUCT SHALL BE EXTERNALLY INSULATED ONLY.

1 / M200 EXTERNALLY INSULATED DUCTWORK TEE
NOT TO SCALE

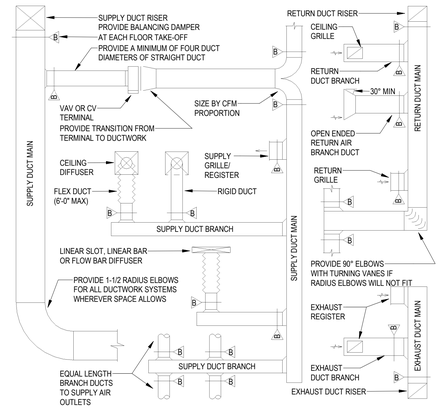


2 / M200 TYPICAL BRANCH TAKEOFF FITTING DETAIL
NOT TO SCALE



3 / M200 DIFFUSER FLEXIBLE DUCT CONNECTION
NOT TO SCALE

NOTES:
1. REFER TO HVAC FLOOR PLANS FOR DUCT SIZES
2. REFER TO SCHEDULES FOR GRILLES, REGISTERS, DIFFUSERS AND TERMINAL SIZES AND TYPES
3. PROVIDE A MANUAL TYPE BALANCING DAMPER FOR EACH SUPPLY OUTLET AND RETURN INLET
4. ALL DUCT RUNOUTS TO DIFFUSERS SHALL BE THE SAME SIZE AS DIFFUSER NECK SIZE, UNLESS OTHERWISE NOTED
5. FLEX DUCT WILL NOT BE ALLOWED ON RETURN OR EXHAUST DUCTWORK SYSTEMS
6. PROVIDE 12" AIR CUSHION AT THE END OF EACH SUPPLY MAIN AND BRANCH DUCT
7. INDIVIDUAL BRANCH BALANCING DAMPERS NOT REQUIRED FOR SUPPLY OR EXHAUST REGISTERS



4 / M200 DUCTWORK INSTALLATION DIAGRAM
NOT TO SCALE

NVA

OWL CREEK VETERINARY HOSPITAL
587 S. BIRDNECK RD.
VIRGINIA BEACH, VA

VETERINARY ARCHITECTURE Unleashed
A studio of RL Architecture, PLLC

ROGER LAYMAN ARCHITECT
PO Box 161
Davidson, NC 28036
ph. 704.756.3540
RLArchitecture.com

KAIROS PROJECT GROUP, INC.
120 SOMMERVILLE PARK ROAD
RALEIGH, NC 27603
NC FIRM # C-3824

COMMONWEALTH OF VIRGINIA
BENJAMIN DONALD LEWIS
Lic. No. 0402054828
PROFESSIONAL ENGINEER

08/02/2022

DRAWING TITLE: DUCTWORK DETAILS

FOR CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

DATE	08/02/2022
PROJECT #	222S57
SCALE	AS NOTED
DRAWN BY	KAIROS PROJECT GROUP

M200

30"x42" PLOT SHEET 8/3/2022 11:01:25 AM