

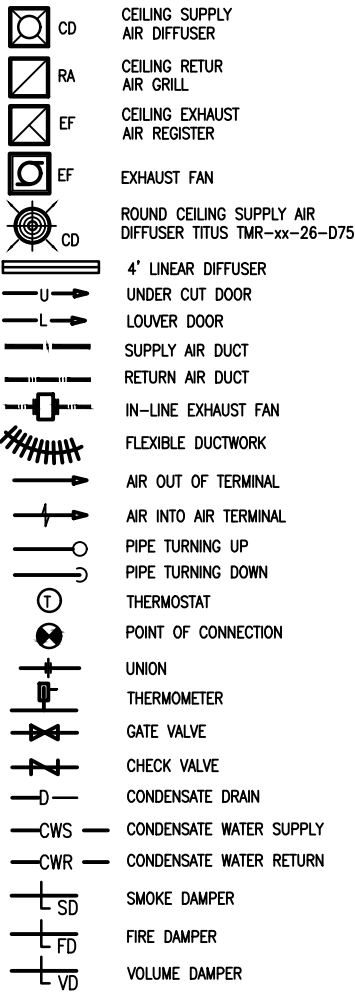
MECHANICAL GENERAL NOTES:

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE INTERNATIONAL MECHANICAL CODES, HEALTH CODES, AND OTHER REGULATIONS.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONAL SPACES AND UTILITY REQUIREMENTS BEFORE START ANY WORK AND SHALL NOTIFY ENGINEERS ANY BIG CONFLICTS BETWEEN CONTRACT DRAWINGS AND FIELD CONDITIONS.
- PROVIDE VIBRATION ISOLATORS, HANGERS, CONNECTORS, ECT. WHERE REQUIRED TO ELIMINATE VIBRATION.
- ALL NEW DUCTWORK SHALL BE GALVANIZED. DUCTWORK SHALL BE FABRICATED AND INSTALLED PER LATEST SMACNA AND ASHRAE GUIDELINES.
- PROVIDE STANDARD TURNING VANES IN DUCT ELBOWS.
- DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS. ALLOWANCE SHALL BE MADE FOR THICKNESS OF SOUNDING OR INSULATION.
- ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS.
- PROVIDE BOUND COPIES OF INSTRUCTIONS FOR THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT TO OWNER.
- PROVIDE COMPLETE TECHNICIANS TO INSTRUCT OWNER IN THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT.
- CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF ALL OTHER TRADES AND SHALL PROVIDE ALL REQUIRED OFF-SETS IN PIPING AND DUCTWORK TO ACCOMPLISH THE WORK.
- ALL SUPPLY, RETURN DUCTWORK SHALL BE INSULATED WITH 1" THICK FIBERGLASS DUCT LINER ACCORDING TO MANUFACTURER'S RECOMMENDATION.
- FURNISH AND INSTALL VOLUME DAMPERS IN SUPPLY, RETURN AND OUTSIDE AIR DUCTS WHEREVER NEEDED TO BALANCE THE ENTIRE AIR DISTRIBUTION SYSTEM IN ADDITION TO DAMPERS WHERE SHOWN ON DRAWINGS.
- FOR ANY EXISTING EQUIPMENT WHICH WAS DECIDED TO BE RE-USED, CONTRACTOR SHALL REPLACE THEM WITH NEW UNITS OF SAME CAPACITIES OF THE EXISTING ONES CAN NOT PERFORM PROPERLY.
- GC SHALL FOLLOW ALL REQUIRED FOR CEILING PLENUM RETURN AIR. PROVIDE WRAP ALL EXISTING PVC PIPING IN CEILING OR USE CAST IRON, COPPER PIPING PER CODE.

SHEET NOTES:

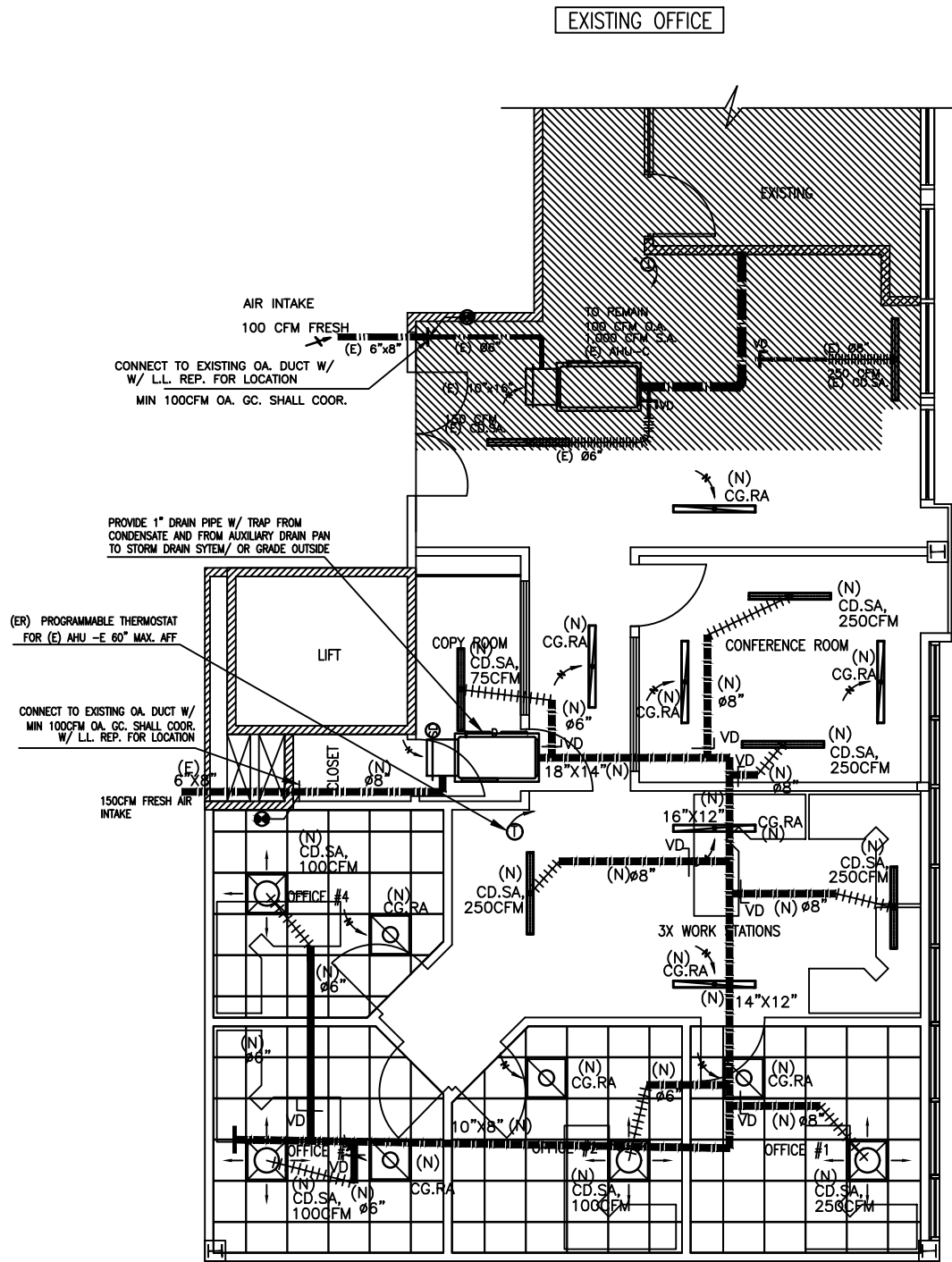
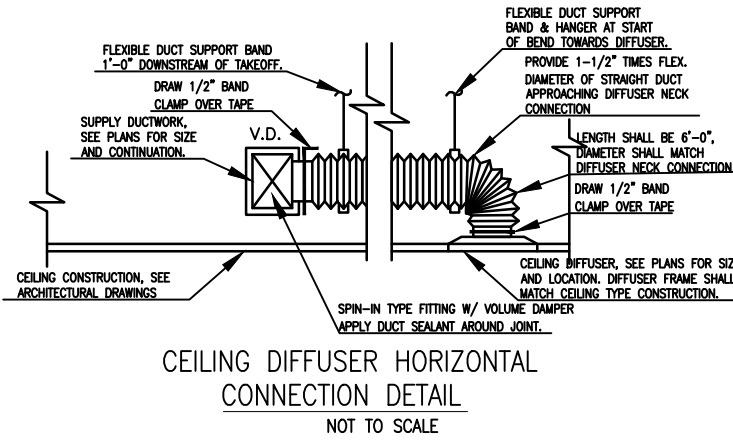
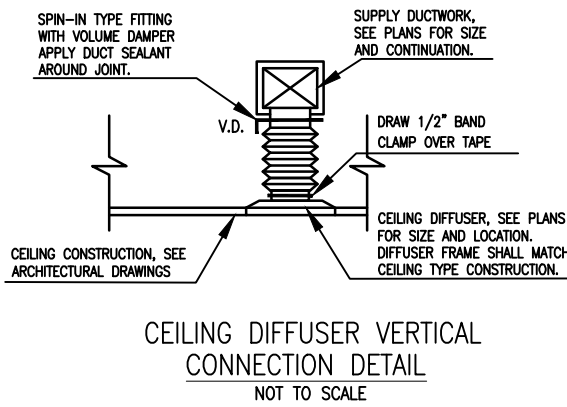
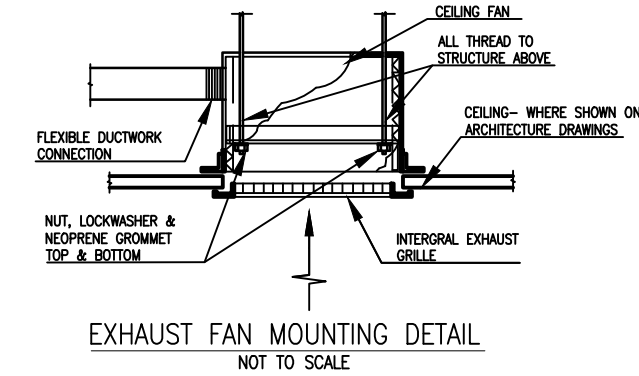
- EXISTING CONDITIONS ARE BASED ON "AS-BUILT" DRAWINGS PROVIDED BY THE OWNER AND LIMITED FIELD VERIFICATION. CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE OWNER.
- CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE DEMOLITION WORK PRIOR TO BIDDING AND START OF WORK. CONTRACTOR IS RESPONSIBLE TO DEMOLISH ALL EXISTING AS REQUIRED FOR INSTALLATION/CONSTRUCTION OF NEW WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO SUBMITTING HIS BID. NO ADDITIONS COMPENSATION WILL BE MADE FOR ANY EXTRAS DUE TO CONTRACTOR'S CONDITIONS BEFORE SUBMITTING HIS BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER FOR RESOLUTION.
- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENT AND LOCAL CODES.
- PROVIDE CORROSION PROTECTION FOR ALL EQUIPMENT EXPOSED TO OUTDOOR.

SYMBOLS:



ABBREVIATIONS:

AABC ASSOCIATED AIR BALANCE CONTROL
AFF ABOVE FINISHED FLOOR
AHU AIR HANDLING UNIT
APD AIR PRESSURE DROP
BD BLADE DAMPER
BFP BACK FLOW PREVENTOR
BTUH BRITISH THERMAL UNIT PER HOUR
CD CEILING DIFFUSER
CFM CEILING GRILL
CLG CLEAN OUT
DB DRY BULB
EA EACH
EAT ENTERING AIR TEMPERATURE
EER ENERGY EFFICIENCY RATIO
ESP EXTERNAL STATIC PRESSURE
EWT ENTERING WATER TEMPERATURE
LBS POUNDS
°F DEGREES FAHRENHEIT
FD FIRE DAMPER
LF LINEAR FEET
FL FULL LOAD AMPS
FPM FEET PER MINUTE
GPM GALLONS PER MINUTE
HP HORSEPOWER
HVAC HEATING VENTILATING AND AIR CONDITIONING UNIT
IN INCHES
KW KILOWATTS
LAT LEAVING AIR TEMPERATURE
LF LINEAR FEET
MBH THOUSAND BRITISH THERMAL UNITS PER HOUR
MCA MINIMUM CIRCUIT AMPS
MIN MINIMUM
MU HUMIDIFIER MAKE-UP
NFFA NATIONAL FIRE PROTECTION ASSOCIATION
OBD OPPOSED BLADE DAMPER
PD PRESSURE DROP
PH PHASE
PSIG POUNDS PER SQUARE INCH GAUGE PRESSURE
RPM ROUND PER MINUTE
SA SUPPLY AIR
SD SMOKE DETECTOR
SF SUPPLY FAN
SL SOUND LIVING
SP STATIC PRESSURE
SQ SQUARE
TYP TYPICAL
UL UNDERWRITERS LABORATORIES
V VOLT
VAV VARIABLE AIR VOLUME
W/ WITH
WB WET BULB
WG WATER GAUGE
WPD WATER PRESSURE DROP
OA OUTSIDE AIR
MAU MAKE-UP AIR UNIT
HZ HERTZ
FT FEET
ATC AUTOMATIC TEMPERATURE CONTROLS
ASHRAE AMERICAN SOCIETY OF HEATING REFRIGERATION AND AIR CONDITIONING ENGINEERS



MECHANICAL LAYOUT PLAN

SCALE: 1/4"=1'

NOTES:

- COOLING CAPACITY BASED ON EAT 80°F DB/67°F WB INDOOR ENTERING AIR TEMPERATURE AND 95°F DB ENTERING OUTDOOR UNIT.
 - HEATING CAPACITY BASED ON 55°F EWT.
 - VERIFY EXACT HVAC PACKAGE SPECIFICATIONS, SCOPE OF WORK WITH HVAC MANUFACTURER BEFORE ORDER AND PROVIDE ALL ACCESSORIES REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM EVEN IF NOT NOTED OR SHOWN. COORDINATE CIRCUIT BREAKER SIZE AND UNIT AMPS WITH ELECTRICAL CONTRACTOR AND MAKE ADJUSTMENT IF NECESSARY.
 - PROVIDE SINGLE POINT CONNECTIONS KIT UNIT WITH A ELECTRICAL SERVICE RECEPTACLE AND DISCONNECT SWITCH INCLUDING FUSES.
 - PROVIDE SUPPLY AND RETURN DUCT SMOKE DETECTOR AS REQUIRED BY CODE.
 - PROVIDE THERMOSTAT AND INSTALL WHERE SHOWN.
 - PROVIDE THE ECONOMIZER- COMPARATIVE ENTHALPY, REFERENCE ENTHALPY, WITH ECONOMIZER CONTROLLER AS FACTORY INSTALLED OPTIONS OR OUTSIDE AND RETURN AIR ACTUATORS DAMPERS.
 - GENERAL CONTRACTOR SHALL COORDINATE WITH THE LANDLORD'S BUILDING ENGINEER FOR EXACTLY LOCATION TO INSTALL ALL UNIT.
- (*) SEE MANUFACTURE'S CATALOG FOR ELECTRICAL EXACT DATA

SYSTEM OUTDOOR AIRFLOW BY IMC 2012

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
ROOM	DESCRIPTION	AREA SQ.FT. (Az)	AREA OUTDOOR AIR RATE TABLE 403.3 (Ra)	AREA OUTDOOR AIR (RaAz)	DEFAULT OCCUPANT DENSITY TABLE 403.3 (#/1000 SQ.FT.)	OCCUPANCY AZ#x1000 (Pz)	OCCUPANT OUTDOOR AIR RATE (Rp)	OCCUPANT OUTDOOR AIR (RpPz)	BREATHING ZONE OUTDOOR AIR (VBZ= RpPz+RaAz)	EXHAUST AIR FLOW RATE CFM/SQ.FT.	EXHAUST AIR REQUIRED CFM	ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)	ZONE OUTDOOR AIR (Voz=Vbz/Ez)	SUPPLY AIR DESIGN (Vpz)	OUTDOOR AIR FRACTION (Zp= Voz/Vpz)
1	CONFERENCE ROOM	154	0.06	9	50	10	5	50	59			0.8	74	500	0.15
2	OFFICES	488	0.06	29	5	4	5	20	49			0.8	61	550	0.11
3	WORK STATIONS	264	0.06	16	5	3	5	15	31			0.8	39	500	0.08
4	RECEPTION AREA	110	0.06	6.6	30	2	5	10	16.6			0.8	20.8	300	0.07
5	COPY ROOM	60	0.06	4	5	1	5	5	9			0.8	11	75	0.15
	TOTAL	1296				22			188				235	1925	0.56

- THE O.A FOR ENTIRE SPACE SERVING BY (E)AHU-E,(E)AHU-C: = 0.96
SYSTEM POPULATION: Ps=TOTAL NUMBER OF OCCUPANTS = 22 PEOPLE
OCCUPANT DIVERSITY: D=Ps/Σ ALL ZONES Pz = 1
UNCORRECTED O.A.: VOU=DΣ ALL ZONES RpPz+ ALL ZONES RaAz = 188 CFM
- TOTAL REQUIRED OUTDOOR AIR: VOT =VOU/EV = 196 CFM
- TOTAL OUTSIDE AIR PROVIDED FROM (E) AHU-E:100 CFM + (E) AHU-C: 100 CFM = 200 CFM WILL MET CODE

PERFORATED DIFFUSER/REGISTER SCHEDULE (SUPPLY & RETURN)				
CFM RANGE	NECK VELOCITY FPM	NECK SIZE (I)	MAX.S.P.	MANUFACTURER AND MODEL
75 - 125 (1)	500	06"	0.02	TITUS OMNI 24x24 PERFORATED FACE LAY-IN OR EQUAL APPROVED
126 - 220 (1)	500	08"	0.02	TITUS OMNI 24x24 PERFORATED FACE LAY-IN OR EQUAL APPROVED
221 - 245 (1)	500	010"	0.02	TITUS OMNI 24x24 PERFORATED FACE LAY-IN OR EQUAL APPROVED
246 - 500 (1)	500	012"	0.02	TITUS OMNI 24x24 PERFORATED FACE LAY-IN OR EQUAL APPROVED
501 - 680 (1)	500	014"	0.02	TITUS OMNI 24x24 PERFORATED FACE LAY-IN OR EQUAL APPROVED
681 - 890 (1)	500	015"	0.02	TITUS OMNI 24x24 PERFORATED FACE LAY-IN OR EQUAL APPROVED
0 - 250 (3)	500	08"	0.02	NALOR #350048" LONG 2 SLOT LINEAR DIFFUSER W/ 3/4" SLOTS & INLET DAMPERS OR EQUAL APPROVED
251 - 500 (3)	500	010"	0.02	NALOR #350048" LONG 2 SLOT LINEAR DIFFUSER W/ 3/4" SLOTS & INLET DAMPERS OR EQUAL APPROVED
1126 - 1680 (2)	500	22" x 22"	0.02	TITUS EGGRATE 24x24 RETURN AIR GRILL OR EQUAL APPROVED

- (1) DIFFUSER FACE SIZES SHALL BE 24"x24".
- (2) FOR RETURN AIR ONLY.
- (3) PLENUM LINEAR DIFFUSER SHALL BE 48"x6" BY NALOR MODEL 5310 WITH THE ROUND INLET DAMPER #4250 RADIAL SLIDING BLADE.

NOTICE TO CONTRACTORS

ALL CONTRACTORS PRIOR TO BID SUBMISSION PROCESS SHALL VISIT PROPOSED WORK SITE AND FIELD VERIFY ALL EXISTING CONDITIONS. ANY CONDITIONS THAT DIFFER FROM THAT SHOWN ON THIS PLAN SHALL BE REPORTED TO ARCHITECT/ ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED.MODIFICATIONS TO SCOPE OF WORK WHICH RESULTS FROM CONTRACTORS NEGLIGENCE TO VISIT THE SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.

NOTE:

- CONTRACTOR IS ALLOWED TO RE-USED PARTIAL (E) DUCTWORK & (E) DIFFUSERS IF THEY ARE IN GOOD & CLEAN CONDITIONS, AND THEY HAVE THE RIGHT SIZES.
- CONTRACTOR HAS THE OPTION TO USE FLEXIBLE DUCTWORK TO CONNECT ALL DIFFUSERS IF CEILING SPACE IS THE PROBLEM (Max. 8' LONG)



NOVA ENGINEERING
SERVICE & TECHNOLOGIES
LIMITED LIABILITY COMPANY

20745 WILLIAMSPORT PL.,
SUITE 370

ASHHBURN, VIRGINIA 20147

CONTACT:
PHONE :
732-307-5758
EMAIL:
PE4CONSULT@GMAIL.COM

TENANT:
SANTOSH REDDY
ADDRESS:
20745 WILLIAMSPORT PL.
ASHBURN, VA 20147
SUITE # 390

PROJECT SOMIREDDY LAW GROUP LLC.

DRAWING TITLE

MECHANICAL GENERAL NOTE
MECHANICAL LAYOUT PLAN/FAN SCHEDULE-HVAC UNIT SCHEDULE
PERFORATED DIFFUSER SCHEDULE/DIFFUSER CONNECTION DETAILS

DATE	DATE	PERMIT SET
29/10/2018		

PROJECT #: 1018-01

DESIGNED: kvd

DRAWN: zhk

SCALE: AS SHOWN

