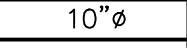
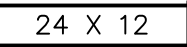

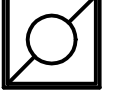
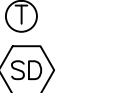
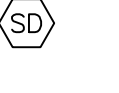
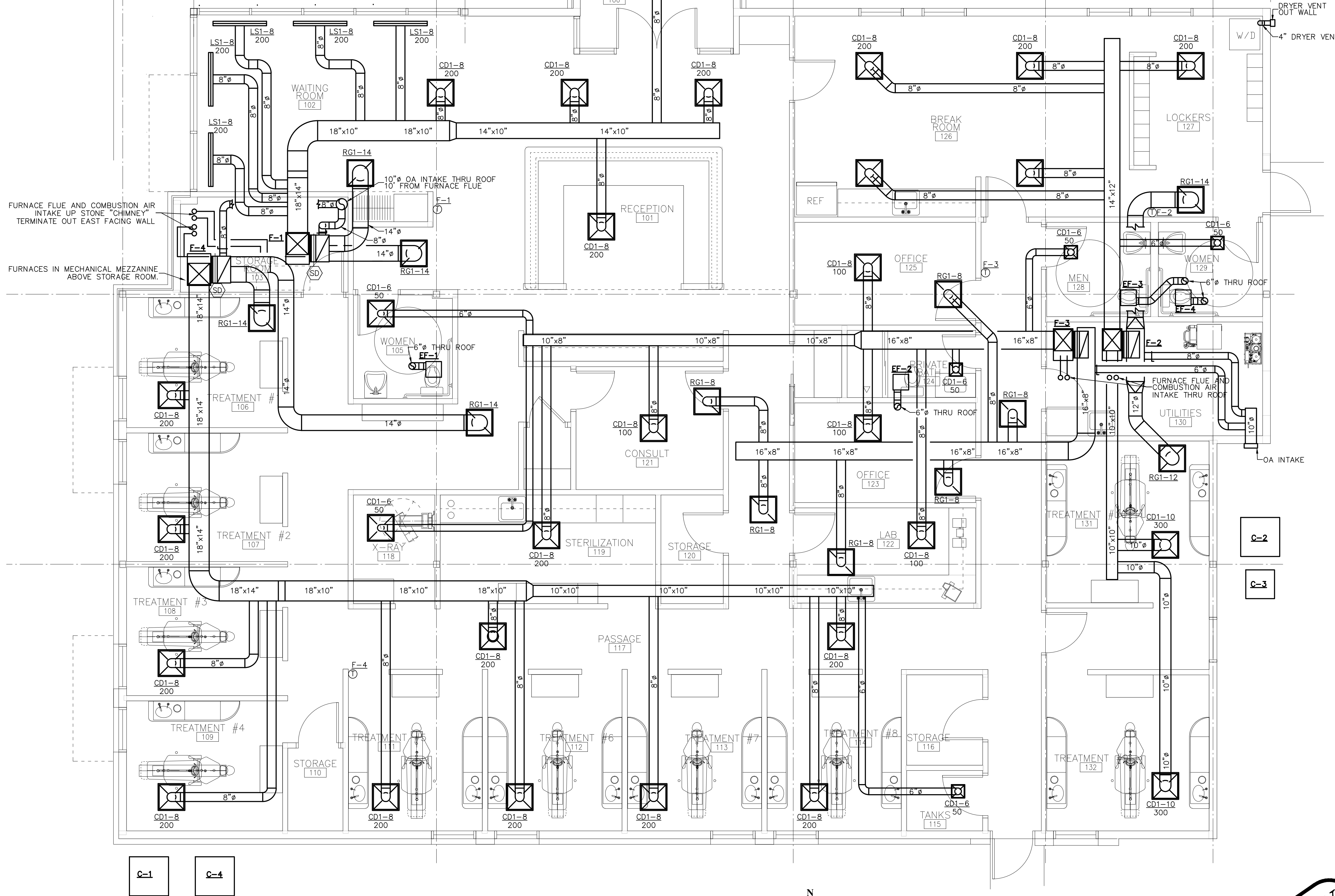


MECHANICAL LEGEND

-  10" ROUND DUCTWORK AND SIZE
-  24 X 12 RECTANGULAR DUCTWORK AND SIZE
-  2' X 2' LAY-IN CEILING DIFFUSER
-  2' X 2' LAY-IN RETURN GRILLE
- CD-10 400 CEILING DIFFUSER - DUCT SIZE AND CFM (SEE SCHEDULE)
- RG1-12 RETURN GRILLE AND DUCT SIZE (SEE SCHEDULE)
-  HEATING AND COOLING THERMOSTAT
-  SMOKE DETECTOR

MECHANICAL GENERAL NOTES:

1. IT IS NOT THE INTENT OF THE DRAWINGS TO DESCRIBE EVERY FEATURE AND DETAIL OF THE WORK. EQUIPMENT AND DUCTWORK IS DRAWN TO SCALE WHEREVER POSSIBLE. FOR CLARITY CERTAIN ITEMS SUCH AS RISERS AND DROPS IN DUCTWORK, ACCESS DOORS, VOLUME DAMPERS, ETC. ARE NOT SHOWN AT EVERY REQUIRED LOCATION.
2. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, PROCEDURES OR SEQUENCES USED BY THE CONTRACTOR TO COMPLETE THIS PROJECT.
3. ELECTRIC AND BUILDING CONSTRUCTION ARE BY OTHERS. LOW VOLTAGE CONTROL WIRING FROM THERMOSTAT TO THE EQUIPMENT SHALL BE BY THE MECHANICAL CONTRACTOR.
4. EXTENSIVE COORDINATION IS REQUIRED WITH OTHER TRADES AND THE OWNER. EVERY EFFORT SHALL BE MADE TO ACCOMMODATE THE DEMANDS OF OTHER TRADES AND THE OWNER AS REQUIRED TO COMPLETE THE PROJECT. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR COORDINATION OF DETAILS AS MAY AFFECT HIS OWN WORK.
5. ALL WORK SHALL COMPLY WITH THE MOST RECENT EDITION OF THE MECHANICAL AND BUILDING CODES. WORKMANSHIP SHALL REPRESENT THE HIGHEST STANDARD OF THE INDUSTRY. THE MECHANICAL CONTRACTOR SHALL FURNISH ALL CUTTING, PATCHING, LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM AS SHOWN ON THESE PLANS AND AS REQUIRED BY CODE.
6. BALANCE THE SUPPLY, RETURN AND EXHAUST AS REQUIRED TO ASSURE THE PROPER OPERATION OF THE SYSTEM. PERFORM ALL TESTS AND ADJUSTMENTS AS REQUIRED TO BALANCE THE SYSTEM. A COMPLETED BALANCE REPORT SHALL BE AVAILABLE TO THE OWNER AND ENGINEER IF REQUESTED.
7. COORDINATE THERMOSTAT LOCATIONS WITH ARCHITECT/OWNER BEFORE ROUGH-IN. UNLESS OTHERWISE NOTED OR REQUIRED, THE CENTERLINE OF THERMOSTATS SHALL BE LOCATED 5'-0" ABOVE FINISHED FLOOR.
8. COORDINATE DIFFUSER, REGISTER AND GRILLE LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING AND OTHER CEILING ITEMS. MAKE MINOR DUCT MODIFICATIONS TO ACCOMMODATE OTHER TRADES.
9. LOCATE ALL EQUIPMENT FOR UNOBSTRUCTED ACCESS AS REQUIRED FOR PROPER MAINTENANCE. VERIFY AND MAINTAIN REQUIRED CLEARANCES AS INDICATED BY THE EQUIPMENT MANUFACTURER.
10. ALL DUCTWORK SHALL CLEAR DOORS AND WINDOWS.
11. ALL DUCTWORK IS OVERHEAD, TIGHT TO THE UNDERSIDE OF THE STRUCTURE, WITH SPACE FOR INSULATION IF REQUIRED.
12. SHEET METAL DUCTWORK SHALL BE FABRICATED OF GALVANIZED STEEL AND INSTALLED IN ACCORDANCE WITH SMACNA AND THE BUILDING AND MECHANICAL CODES.
13. ALL MATERIALS, METHODS AND EQUIPMENT SHALL BE IN STRICT ACCORDANCE WITH THE BUILDING STANDARDS AS APPROVED BY THE OWNER.
14. ALL SUPPLY DUCT IN SEMI-CONDITIONED AREAS (ABOVE THE CEILING) SHALL BE INSULATED WITH 1 1/2" THICK FOIL BACKED INSULATION.
15. PROVIDE FLEXIBLE DUCT CONNECTIONS TO ALL SUPPLY DIFFUSERS UNLESS OTHERWISE NOTED. FLEXIBLE DUCT SHALL BE FACTORY FABRICATED UL 181, CLASS 1 AIR DUCT INSTALLED PER THE MANUFACTURER RECOMMENDATIONS, AT 5' MAXIMUM LENGTHS. FLEXIBLE DUCT SHALL NOT BE USED FOR RETURN OR EXHAUST DUCT.
16. DUCT SIZES TO ALL CEILING DIFFUSERS ARE TO BE THE SAME AS THE DIFFUSER NECK SIZES.
17. INSTALL DAMPERS AT ALL BRANCH DUCTS AND AS REQUIRED TO PROPERLY BALANCE THE SYSTEM.
18. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE PLANS, ARE INTERNAL CLEAR DIMENSIONS. DUCT SIZES SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
19. PROVIDE ALL 90° SQUARE ELBOWS WITH UNVANED SMOOTH RADIUS CONSTRUCTION WITH RADIUS EQUAL TO 1-1/2 TIMES THE DUCT WIDTH, WHERE SPACE IS NOT AVAILABLE FOR THIS RADIUS, PROVIDE ELBOW WITH TURNING VANES. AVOID SITUATIONS WHICH WOULD REQUIRE 90° FITTINGS BACK TO BACK.
20. PROVIDE ACCESS DOORS IN DUCTWORK FOR ALL SMOKE DETECTORS AND OTHER ITEMS LOCATED IN THE DUCTWORK WHICH MAY REQUIRE SERVICE AND/OR INSPECTION.
21. SMOKE DETECTORS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR.
22. TERMINATE ALL GAS VENTS FOR UNIT HEATERS, WATER HEATERS AND OTHER GAS APPLIANCES A MINIMUM OF 3'-0" ABOVE THE ROOF WITH A RAIN CAP.
23. TRAP ALL CONDENSATE WITH A MINIMUM 1" DEEP TRAP AT THE COOLING COIL. ROUTE ALL CONDENSATE FROM THE AIR CONDITIONING COIL TO THE NEAREST PLUMBING DRAIN. WHERE WATER DAMAGE WILL OCCUR IF THE CONDENSATE OVERFLOWS, PROVIDE A SECONDARY CONDENSATE DRAIN OR CONDENSATE PUMP WITH EQUIPMENT "KILL" FLOAT SWITCH.
24. COORDINATE EXTERIOR OPENING SIZE, LOCATION AND DETAILS WITH THE OWNER, ARCHITECT OR GENERAL CONTRACTOR.
25. SEAL ALL DUCTWORK AT JOINTS WITH UL181 LISTED TAPE OR MASTIC SEALANT.



HVAC FLOOR PLAN

SCALE: 1/4" = 1'-0"



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DESIGN BUILD ENGINEER: **SHAWN JACOBS, P.E.**
ENGINEERING SERVICES
 2075 HWY 467
 DE MOSSVILLE, KY 41033
 OFFICE: 859-472-1826
 CELL: 513-919-2093

PROPOSED NEW OFFICE BUILDING FOR:
ERIK SNELL DDS
KYLE'S STATION
 LIBERTY TOWNSHIP OH

PRODUCT ARCHITECT:
CLARISEY FRANK
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REV #	Date	Description
1		

Date: 2/24/2023
 JOB NUMBER: 22-045
 Drawn By: SMJ

M-1

EXHAUST FAN SCHEDULE									
TAG	MANUFACTURER & MODEL	CFM	EXT. S.P.	HP	FLA	VOLTS	PHASE	WEIGHT LBS.	REMARKS
EF-1	BROAN QTXE080	60	0.25"	-	0.2	115	1	12	1,2
EF-2	BROAN QTXE080	60	0.25"	-	0.2	115	1	12	1,2
EF-3	BROAN QTXE080	60	0.25"	-	0.2	115	1	12	1,2
EF-4	BROAN QTXE080	60	0.25"	-	0.2	115	1	12	1,2

REMARKS:

1. PROVIDE WITH WALL CAP
2. PROVIDE WITH GRAVITY BACK DRAFT DAMPER

GRILLE, REGISTER & DIFFUSER SCHEDULE							
TAG	MANUFACTURER & MODEL	DESCRIPTION	MATERIAL	LOCATION	SIZE	REMARKS	
CD1	TITUS OMNI	ARCHITECTURAL SUPPLY	STEEL	CEILING	SEE PLANS		
RG1	TITUS PAR	PERFORATED RETURN GRILLE	STEEL	CEILING	SEE PLANS		
LS1	TITUS MP-38-SP TWO SLOT	LINEAR SLOT SUPPLY	ALUM	CEILING	SEE PLANS		

FURNACE SCHEDULE														
UNIT NO.	MFR. & MODEL	TYPE	SUPPLY CFM	OUTDOOR AIR CFM	ESP IN.	HEATING (MBH)		"A" COIL EVAP. COIL MFR. & MODEL	COOLING (MBH)		ELECTRIC		REMARKS	
						INPUT	OUTPUT		TOTAL	SENSIBLE	VOLTS	PHASE		MCA
F-1	CARRIER 58MCB08010020	UPFLOW SINGLE STAGE	2000	200	0.50"	80	74	CARRIER CNPVP6021ACA	53.5	40.1	115	1	18.4	1
F-2	CARRIER 58MCB06010016	UPFLOW SINGLE STAGE	1600	160	0.50"	60	56	CARRIER CNPVP4817ACA	44.5	33.4	115	1	9.8	1
F-3	CARRIER 58MCB04010008	UPFLOW SINGLE STAGE	800	80	0.50"	40	37	CARRIER CNPVP1817ACA	18.0	13.5	115	1	9.8	1
F-4	CARRIER 58MCB08010020	UPFLOW SINGLE STAGE	2000	200	0.50"	80	74	CARRIER CNPVP6021ACA	53.5	40.1	115	1	18.4	1

REMARKS:

1. FURNACE AND CONDENSING UNIT SHALL BE BY THE SAME MANUFACTURER AND MATCHED ACCORDINGLY TO MAXIMIZE PERFORMANCE.

CONDENSING UNIT SCHEDULE												
UNIT NO.	MFR. & MODEL	FURNACE UNIT	REFRIG.	COOLING (MBH)		STAGES	ELECTRIC			EFFICIENCY SEER	WEIGHT LBS.	REMARKS
				TOTAL	SENSIBLE		VOLTS	PHASE	MCA			
C-1	CARRIER 24ACC660A0030	F-1	PURON	53.5	40.1	1	208/230	1	28	15	340	1
C-2	CARRIER 24ACC648A0030	F-2	PURON	44.5	33.4	1	208/230	1	26.1	15	140	1
C-3	CARRIER 24ACC618A0030	F-3	PURON	18.0	13.5	1	208/230	1	11.8	15	140	1
C-4	CARRIER 24ACC660A0030	F-4	PURON	53.5	40.1	1	208/230	1	28	15	340	1

REMARKS:

1. THERMOSTATIC EXPANSION VALVE (TXV) KIT

F-1 VENTILATION AIR SCHEDULE											
ROOM NAME	SPACE TYPE	FLOOR AREA Az	ZONE POPULATION Pz	PEOPLE OA RATE Rp	AREA OA RATE Ra	PRIMARY ZONE AIR Vpzm	OUTDOOR ZONE AIR Voz	AIR DISTR. EFFECT. Ez	OUTDOOR AIR SUPPLY AIR Zp	MINIMUM EXHAUST AIR CFM	REMARKS
VESTIBULE 100	CORRIDOR	76	-	0	0.06	200	6	0.80	0.03	-	1,2
WAITING 102	RECEPTION AREAS	600	18	5	0.06	1500	158	0.80	0.11	-	1,2
RECEPTION 101	RECEPTION AREAS	153	4	5	0.06	300	36	0.80	0.12	-	1,2

REMARKS:

1. VENTILATION AIR RATES ARE BASED ON ASHRAE STANDARD 62.1-2016 IN ACCORDANCE WITH THE BUILDING AND MECHANICAL CODES AS AN ALTERNATIVE DESIGN METHOD.
2. PRIMARY ZONE AIR, Vpzm, IS THE MINIMUM DESIGN SUPPLY AIR TO THE ZONE OR SPACE.

Ps	18
MAX Zp	0.12
Ev	1.00
VOT	140

F-2 VENTILATION AIR SCHEDULE											
ROOM NAME	SPACE TYPE	FLOOR AREA Az	ZONE POPULATION Pz	PEOPLE OA RATE Rp	AREA OA RATE Ra	PRIMARY ZONE AIR Vpzm	OUTDOOR ZONE AIR Voz	AIR DISTR. EFFECT. Ez	OUTDOOR AIR SUPPLY AIR Zp	MINIMUM EXHAUST AIR CFM	REMARKS
BREAK ROOM 126	BREAK ROOMS	382	19	5	0.12	750	176	0.80	0.23	-	1,2
LOCKERS 127	LOCKER/DRESSING	136	1	0	0	200	0	0.80	0.00	-	1,2
WOMEN 129	TOILET ROOMS	55	-	0	0	50	0	0.80	0.00	50	1,2,3
TREATMENT #10 131	OFFICE SPACE	173	2	5	0.06	300	25	0.80	0.08	-	1,2
TREATMENT #9 130	OFFICE SPACE	172	2	5	0.06	300	25	0.80	0.08	-	1,2

REMARKS:

1. VENTILATION AIR RATES ARE BASED ON ASHRAE STANDARD 62.1-2016 IN ACCORDANCE WITH THE BUILDING AND MECHANICAL CODES AS AN ALTERNATIVE DESIGN METHOD.
2. PRIMARY ZONE AIR, Vpzm, IS THE MINIMUM DESIGN SUPPLY AIR TO THE ZONE OR SPACE.
3. EXHAUST AIR RATES ARE BASED ON ASHRAE STANDARD 62.1-2016 TABLE 6-4. TRANSFER AIR, AIR CLASSIFICATION AND RECIRCULATION DESIGN METHODS ARE IN ACCORDANCE ASHRAE STANDARD 62.1-2016 AS AN ALTERNATIVE DESIGN METHOD.

Ps	6
MAX Zp	0.23
Ev	0.90
VOT	106

F-3 VENTILATION AIR SCHEDULE											
ROOM NAME	SPACE TYPE	FLOOR AREA Az	ZONE POPULATION Pz	PEOPLE OA RATE Rp	AREA OA RATE Ra	PRIMARY ZONE AIR Vpzm	OUTDOOR ZONE AIR Voz	AIR DISTR. EFFECT. Ez	OUTDOOR AIR SUPPLY AIR Zp	MINIMUM EXHAUST AIR CFM	REMARKS
MEN 128	TOILET ROOMS	54	-	-	-	50	0	0.80	0.00	50	1,2,3
OFFICE 125	OFFICE SPACE	105	1	5	0.06	100	14	0.80	0.14	-	1,2
PRIVATE BATH 124	TOILET ROOMS	46	-	-	-	50	0	0.80	0.00	50	1,2,3
OFFICE 123	OFFICE SPACE	100	1	5	0.06	100	14	0.80	0.14	-	1,2
LAB 122	OFFICE SPACE	96	1	5	0.06	100	13	0.80	0.13	-	1,2
STERILIZATION 119	OFFICE SPACE	137	1	5	0.06	200	17	0.80	0.08	-	1,2
CONSULT 121	OFFICE SPACE	100	1	5	0.06	100	14	0.80	0.14	-	1,2
X-RAY 118	OFFICE SPACE	50	1	5	0.06	50	10	0.80	0.20	-	1,2
WOMEN 105	TOILET ROOMS	60	1	-	-	50	0	0.80	0.00	50	1,2,3

REMARKS:

1. VENTILATION AIR RATES ARE BASED ON ASHRAE STANDARD 62.1-2016 IN ACCORDANCE WITH THE BUILDING AND MECHANICAL CODES AS AN ALTERNATIVE DESIGN METHOD.
2. PRIMARY ZONE AIR, Vpzm, IS THE MINIMUM DESIGN SUPPLY AIR TO THE ZONE OR SPACE.
3. EXHAUST AIR RATES ARE BASED ON ASHRAE STANDARD 62.1-2016 TABLE 6-4. TRANSFER AIR, AIR CLASSIFICATION AND RECIRCULATION DESIGN METHODS ARE IN ACCORDANCE ASHRAE STANDARD 62.1-2016 AS AN ALTERNATIVE DESIGN METHOD.

Ps	6
MAX Zp	0.20
Ev	0.90
VOT	68

F-4 VENTILATION AIR SCHEDULE											
ROOM NAME	SPACE TYPE	FLOOR AREA Az	ZONE POPULATION Pz	PEOPLE OA RATE Rp	AREA OA RATE Ra	PRIMARY ZONE AIR Vpzm	OUTDOOR ZONE AIR Voz	AIR DISTR. EFFECT. Ez	OUTDOOR AIR SUPPLY AIR Zp	MINIMUM EXHAUST AIR CFM	REMARKS
TREATMENT ROOMS #1-#4	OFFICE SPACE	620	8	5	0.06	1000	97	0.80	0.10	-	1,2
TREATMENT ROOMS #5-#8	OFFICE SPACE	709	10	5	0.06	950	116	0.80	0.12	-	1,2
TANKS 115	UNOCCUPIED	26	-	-	-	50	0	0.80	0.00	-	1,2

REMARKS:

1. VENTILATION AIR RATES ARE BASED ON ASHRAE STANDARD 62.1-2016 IN ACCORDANCE WITH THE BUILDING AND MECHANICAL CODES AS AN ALTERNATIVE DESIGN METHOD.
2. PRIMARY ZONE AIR, Vpzm, IS THE MINIMUM DESIGN SUPPLY AIR TO THE ZONE OR SPACE.
3. EXHAUST AIR RATES ARE BASED ON ASHRAE STANDARD 62.1-2016 TABLE 6-4. TRANSFER AIR, AIR CLASSIFICATION AND RECIRCULATION DESIGN METHODS ARE IN ACCORDANCE ASHRAE STANDARD 62.1-2016 AS AN ALTERNATIVE DESIGN METHOD.

Ps	12
MAX Zp	0.12
Ev	1.00
VOT	140

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M-2