

1 HVAC FLOOR PLAN  
M1.0 SCALE 1/8"=1'-0"

**GENERAL NOTES**

1. T.S.C. SHALL REPLACE ALL HVAC FILTERS PRIOR TO THE TURN OVER OF THE SPACE TO DAVID'S BRIDAL.
2. T.S.C. TO FIELD VERIFY ALL CONDITIONS AND DIMENSIONS.
3. OWNER TO BE SURE TO USE BOTTOM OF ROOF STRUCTURE HEIGHTS. CONTACT ARCHITECT AND OWNER IF DUCT HEIGHT WILL NOT ALLOW FOR THE DESIGNED CEILING HEIGHT ON THE ARCHITECT'S PLANS. PRIOR TO ORDERING THE FRESH AIR INTAKE, T.S.C. IS TO OBTAIN CEILING AND VERIFY THAT THE DESIGNED MECHANICAL LAYOUT CAN BE ACHIEVED.
4. ALL OUTDOOR RELATIONS SHALL BE AT LEAST 8'-0".

**EXHAUST FAN SCHEDULE**

MARK NO.	EF-1	EF-2	EF-3
MANUFACTURER	PERM	PERM	PERM
MODEL NO.	282PHR	282PHR	282PHR
CFM	100	100	800
STATIC PRESSURE	0.25"	0.25"	0.33"
MOTOR HP	1/4"	1/4"	1/4"
ELECTRICAL	120 VOLTS	120 VOLTS	120 VOLTS
AREA SERVED	TOILET ROOMS	JANITOR CLOSET/ BREAK ROOM	ALTERATIONS

- ACCESSORIES:**  
 EC - PREFABRICATED ROOF PANEL OR - WEATHERPROOF DISCONNECT SWITCH.  
 BS - GRAVITY BACKDRAFT DAMPER, BS - BROSSCREEN
- NOTES:**  
 1. FAN SHALL OPERATE AT 120V, SINGLE PHASE.  
 2. T.S.C. WILL PROVIDE AND INSTALL EXHAUST DUCT FROM FAN TO DISCHARGE THROUGH ROOF MOUNTED GOOSENECK TERMINATION. SEE DETAIL 2/A2.0.

**ZOO FAN SCHEDULE**

MARK NO.	ZF-1
MANUFACTURER	ZOO FANS
MODEL NO.	IC50
CFM	200
ELECTRICAL	120 VOLTS

- NOTES:**  
 1. FAN SHALL OPERATE AT 120V, SINGLE PHASE.  
 2. FAN SHALL BE CONTROLLED BY TIMER SWITCH IN ROOM.

**CO2 SENSOR AND INSTALLATION NOTES**

- SENSOR SPECIFICATIONS:**
1. COMMERCIAL SENSOR UTILIZES A SINGLE BEAM ABSORPTION INFRARED DIFFUSION SAMPLE METHOD FOR CARBON DIOXIDE (CO2) DETECTION. USING CO2 AS AN INDICATOR OF OCCUPANCY WILL ALLOW VENTILATION BASED ON ACTUAL OCCUPANCY WHILE MAINTAINING CODE REQUIRED PER-PERSON VENTILATION RATES.
  2. SENSOR WILL MONITOR OUTSIDE AIR QUANTITIES THROUGH ECONOMIZER DAMPER ACTUATORS AND WILL CONTROL DAMPER BETWEEN 0 AND 100% OUTSIDE AIR.
  3. SENSOR SHALL BE PROVIDED WITH ROOF TOP AIR CONDITIONING UNITS AND RETAIL PER MANUFACTURER REQUIREMENTS.

**COMMISSIONING NOTE**

WHEN REQUIRED, IT IS THE OWNER'S RESPONSIBILITY TO CONTRACT WITH A COMMISSIONING AUTHORITY TO COMPLY WITH LOCAL CODES.

**MECHANICAL KEYED NOTES**  
(APPLICABLE TO THIS SHEET ONLY)

1. NEW ROOF TOP IN EXISTING LOCATION UNIT PER SCHEDULE ON SHEET M2.0. PROVIDE NEW AMPLIFY CURBS AS REQUIRED. FIELD VERIFY EXACT LOCATION.
2. DUCT MOUNTED SMOKE DETECTOR IN RA DUCT TO PROVIDE FAN SHUTDOWN UPON DETECTION. T.S.C. IS TO OBTAIN ADEQUATE ACCESS TO THE SMOKE DETECTOR FOR ANNUAL SERVICE AND TESTING. SMOKE DETECTORS ARE TO BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM IF APPLICABLE. O.C. IS TO PROVIDE NEW IF NOT EXISTING.
3. THERMOSTAT FOR INDICATED UNIT CONTROL WHERE SHOWN AT 48" A.F.F. ROUTE CONTROL WIRING CONCEALED (WHENEVER FEASIBLE) AND AS HIGH AS POSSIBLE TO THE R.U.L. THERMOSTATS PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS WITH A CLEAR INACTIVE LOCKING SENSOR. REFER TO FUTURE PLAN TO PREVENT INTERFERENCE WITH SALES FEATURES. INSTALLED BY MSS SOLUTIONS.
4. NEW EXHAUST FAN AS SPECIFIED ON THIS SHEET.
5. CONDENSATE LINE TO TERMINATE AT LANDLORD APPROVED LOCATION.
6. UP TO GOOSENECK TERMINATION ON ROOF. T.S.C. TO ENSURE ALL EXHAUST AIR TERMINATIONS ARE MINIMUM 10'-0" FROM ANY FRESH AIR INTAKE.
7. NOT USED.
8. REMOTE AVERAGING SENSOR TO BE LOCATED AND INSTALLED BY MSS SOLUTIONS/HONEYWELL DURING INSTALLATION OF DMS.
9. CONNECT TO EXISTING GAS SYSTEM. PROVIDE NEW GAS LINES PER CODE AS REQUIRED. CONNECT TO EXISTING METER & COORDINATE WITH UTILITY.
10. HUMIDITY SENSOR INSTALLED BY MSS SOLUTIONS AND WIRED TO EMS FOR HANDEDY MONITORING.
11. UNDERCUT DOOR 1" TO PROVIDE TRANSFER OF AIR.
12. NEW ZOO FAN AS SPECIFIED ON THIS SHEET.

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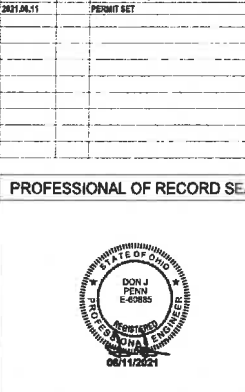
7676 VOICE OF AMERICAN CENTRE DR  
WEST CHESTER TWP. OH 45069



**CONSULTANTS**

DATE	NO.	REVISIONS
2021.01.11	1	PERMIT SET

**PROFESSIONAL OF RECORD SEAL**



**DAVID'S BRIDAL™**  
**STORE #32 "CINCINNATI, OH"**  
 7676 VOICE OF AMERICAN CENTRE DR  
 WEST CHESTER TWP. OH 45069

PROJECT NUMBER: 6788-21

CONFIG: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_ SC  
 CHECKED BY: \_\_\_\_\_ HO

**MECHANICAL PLAN**

**M1.0**



### NEW ROOFTOP UNIT SCHEDULE

UNIT NO.	NOMINAL COOLING CAP. (TONS)	MANUF.	MODEL	NEW/EXISTING	SUPPLY AIR FLOW (CFM)	ESP (IN. WC)	MIN. FLOW (CFM)	COOLING TOTAL CAP. (MBH)	SENSIBLE CAP.	EFFICIENCY EER	SEER/SEER	HEATING INPUT (MBH)	OUTPUT (MBH)	UNIT ELECTRICAL VOLTAGE	MCA	MOCP	NET INSTALLED WT (LBS)
RTU-1	15.0	CARRIER	48TCED16	NEW	2260	MED	1140	83.4	127.1	0.80	11.5/1	240	195	208/23/60	72	50	1900 lbs.
RTU-2	10.0	CARRIER	48TCED12	NEW	1500	MED	540	111.0	88.1	11.00	11.5/1	180	148	208/23/60	50	50	1350 lbs.
RTU-3	5.0	CARRIER	48TCED06	NEW	2000	MED	245	53.7	44.5	11.00	11.5/1	86	86	208/23/60	31	45	850 lbs.

NOTE: EACH UNIT SHALL BE REQUIRED TO INCLUDE THE FOLLOWING:

- LOW LEAKAGE (1%) DAMPERS
- LOW LEAK ECONOMIZER
- 2" MERV-13 FILTERS
- DIRTY SMOKE DETECTOR
- ROOF CURB
- BOTTOM CONNECTIONS
- FACTORY START UP

NOTE: H. FIRST YEAR WARRANTY SERVICE  
I. 5-YEAR COMPRESSOR WARRANTY  
J. 10-YEAR HEAT EXCHANGER WARRANTY  
K. DIRTY FILTER SWITCH  
L. CO2 SENSOR  
M. BAROMETRIC RELIEF DAMPER

NOTE: 1. PROVIDE AND INSTALL T'STAT & REMOTE SENSOR AT 48" A.F.F.  
2. PROMOTE AND INSTALL AVERAGING T'STAT & TWO REMOTE SENSORS AT 48" A.F.F.  
3. CONTRACTOR TO CONTRACT WITH A LOCAL STRUCTURAL ENGINEER FOR CONNECTION OF RTU TO CURB AND BUILDING STRUCTURE.

### GRILLE, REGISTER & DIFFUSER SCHEDULE

PLAN MARK	MANUF. & MODEL NUMBER	MODULE SIZE	NECK SIZE	FACE SIZE	BORDER TYPE	FINISH	BLOW PATTERN	MAT'L	OPTIONS/NOTES
S1	TITUS - TDC	24x24	SEE PLAN	18x18	3	26	4	STL	H
R1	TITUS - 350R	24x24	22x22	--	3	26	--	STL	H
R2	TITUS - 350R	24x24	SEE PLAN	--	3	26	--	STL	H

BORDER TYPE:	BLOW PATTERN:	FINISH:	OPTIONS/NOTES:
1 SURFACE MOUNT	1 1-WAY	01 ALUMINUM 04 MILL (STD.)	PFSS SS PLASTER FRAME EG EQUALIZING GRID
2 SNAP-IN	2 2-WAY, OPPOSITE	26 WHITE	PFA ALUM PLASTER FRAME TRV THROW RED. VANES
3 LAY-IN	3 3-WAY	AG-15	AG-15 STEEL DAMPER H HURRICANE TABS
4 SPINE	4 4-WAY	AG-15-AA	AG-15-AA ALUMINUM DAMPER
5 DRIPPED		AG-15-SS	AG-15-SS STAINLESS STL DAMPER
6 BEVELED		STL 22 GAUGE STEEL	EQT EARTHQUAKE TABS
		ALU ALUMINUM	L FRONT BLADE LONG ORIENTATION
			S FRONT BLADE SHORT ORIENTATION
			AD-85 BUTTERFLY DAMPER

### VENTILATION REQUIREMENT CALCULATION

PER 2015 IMC TABLE 403.3

ROOM NAME	UNIT SERVICING	PEOPLE	CFM/PERSON	CFM/PSF	AREA (SF)	PEOPLE CFM/PERSON	CFM/PSF	REQUIRED O.A. CFM	DISTRIBUTION EFFECTIVENESS	PROVIDED O.A. CFM
SALPS	RTU-1	49	7.5	0.12	3263	367.5	391.56	799.06	0.8	640
PRESENTATION	RTU-1,2	36	7.5	0.06	2336	270	140.16	410.16	0.8	513
BREAK	RTU-2	4	5	0.06	213	20	12.78	32.78	0.8	41
ALTERATIONS	RTU-1	11	5	0.06	688	55	41.28	96.28	0.8	120
MENCH CLOSET	RTU-1	0	0	0.12	282	0	21.84	21.84	0.8	27
RECEIVING	RTU-3	0	0	0.12	695	0	83.4	83.4	0.8	104
STORAGE	RTU-3	0	0	0.12	872	0	104.64	104.64	0.8	131
JANITOR	RTU-2	0	0	0.12	51	0	6.12	6.12	0.8	8
UTILITY	RTU-3	0	0	0.06	87	0	5.22	5.22	0.8	7
CORRIDOR	RTU-2	0	0	0.06	316	0	18.96	18.96	0.8	24
<b>TOTAL O.A. PROVIDED</b>										<b>1515</b>

RESTROOMS: 70 CFM / FIXTURE # FIXTURES= 2 140 CFM EXHAUST REQ'D 140 CFM EXHAUST PROVIDED

NOTE: REPRESENTS CONDITIONS DURING NORMAL OPERATIONS AND NOT CONSIDERING ECONOMIZER OPERATION.

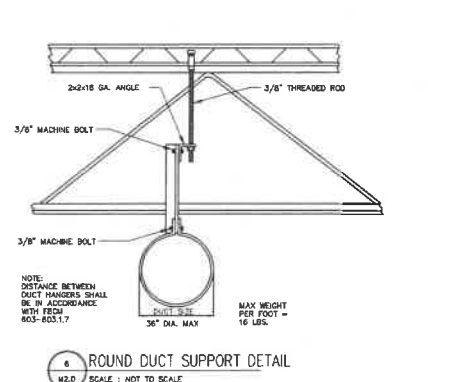
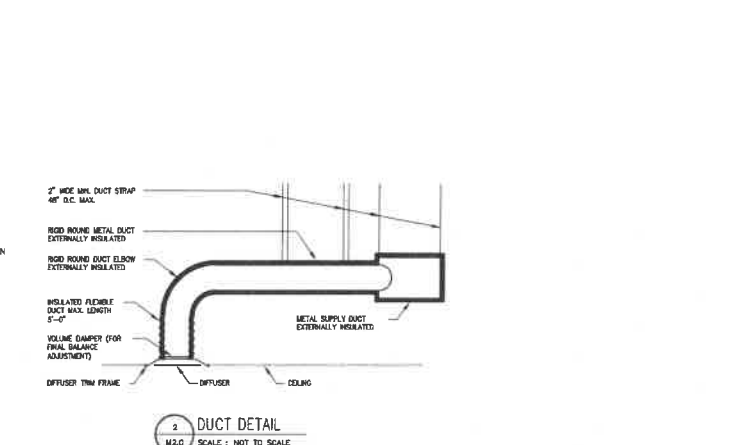
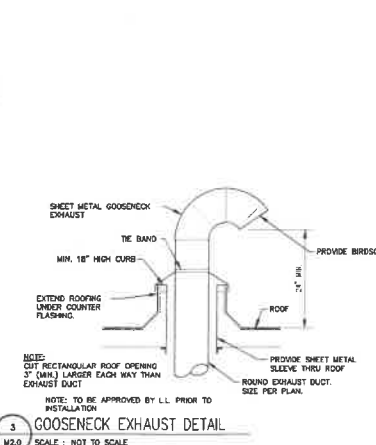
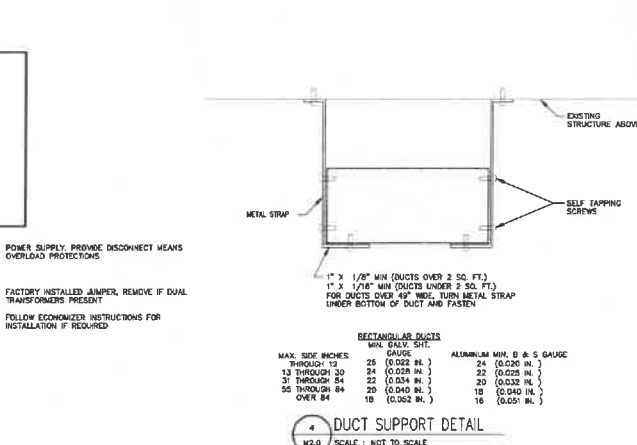
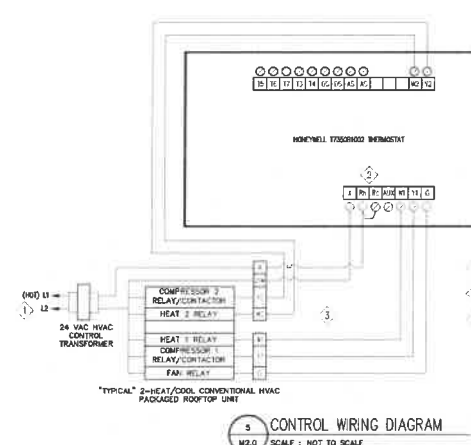
### System Checksums By DPCE

Single Zone

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES			
Zone	Peak	Flow	Temp	Zone	Peak	Flow	Temp	Zone	Peak	Flow	Temp	Zone	Peak	Flow	Temp
1	15.0	2260	55.0	1	15.0	2260	55.0	1	15.0	2260	55.0	1	15.0	2260	55.0
2	10.0	1500	55.0	2	10.0	1500	55.0	2	10.0	1500	55.0	2	10.0	1500	55.0
3	5.0	2000	55.0	3	5.0	2000	55.0	3	5.0	2000	55.0	3	5.0	2000	55.0

COOLING COIL SELECTION: Zone 1: 15.0 Tons, 2260 CFM, 55.0 F. Zone 2: 10.0 Tons, 1500 CFM, 55.0 F. Zone 3: 5.0 Tons, 2000 CFM, 55.0 F.

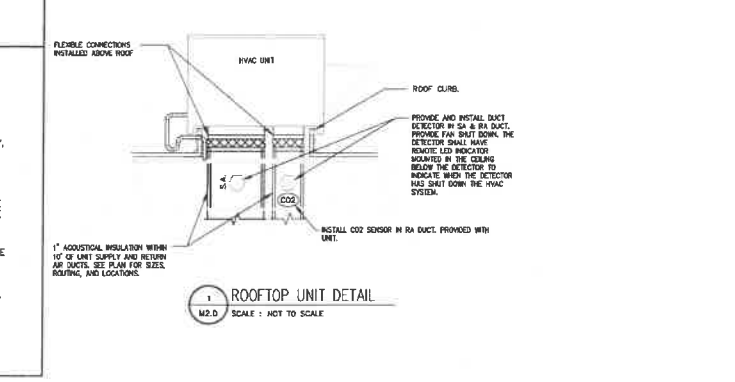
HEATING COIL SELECTION: Zone 1: 15.0 Tons, 2260 CFM, 55.0 F. Zone 2: 10.0 Tons, 1500 CFM, 55.0 F. Zone 3: 5.0 Tons, 2000 CFM, 55.0 F.



### MECHANICAL SYMBOLS AND ABBREVIATIONS LEGEND

ACCU	AIR COOLED CONDENSING UNIT	RA	RETURN AIR	—	GAS PIPING OF SIZE NOTED	⊠	DISCHARGE OR SUPPLY AIR DUCT
AHF	AIR HANDLING UNIT	RTU	ROOFTOP UNIT	—	CONDENSATE DRAIN PIPING OF SIZE NOTED	⊠	RETURN OR EXHAUST AIR DUCT
BHP	BRAKE HORSEPOWER	SA	SUPPLY AIR	—	UNION	⊠	OUTSIDE AIR SUPPLY DUCT
CL	CENTERLINE	SP	STATIC PRESSURE	—	COCK	⊠	AIR DEVICE TYPE (S-SUPPLY, R-RETURN, E-EXISTING) AIR QUANTITY (CFM)
CONT	CONTRACTOR	SENS	SENSIBL	—	COCK	⊠	RECTANGULAR AND ROUND DUCTWORK SHALL HAVE RADIUS TYPE ELBOWS WHERE POSSIBLE. ELBOWS SHALL BE 1-1/2 TIMES ROUND DUCT SIZE.
DN	DOWN	ST	SUPPLY FAN	—	COCK	⊠	DUCT SIZE DESIGNATION: SIZE IS FREE AREA. REQUIRED. CONTRACTOR SHALL MAKE ALLOWANCE FOR DUCT LINER THICKNESS WHERE SPECIFIED.
EAT	ENTERING AIR TEMPERATURE	TF	TRANSFER FAN	—	COCK	⊠	KEYED NOTES ON DRAWING
EF	EXHAUST FAN	TCC	TENANT GENERAL CONTRACTOR	—	COCK	⊠	DRAWING REVISIONS
EC	ELECTRICAL CONTRACTOR	TYP	TYPICAL	—	COCK	⊠	
ESP	EXTERNAL STATIC PRESSURE	UH	UNIT HEATER	—	COCK	⊠	
FC	FLEXIBLE CONNECTION	WC	WATER COLUMN	—	COCK	⊠	
FD	FIRE DAMPER	WM/G	WATER MOTOR GONG	—	COCK	⊠	
FDC	FIRE DEPARTMENT CONNECTION				COCK	⊠	
FNFL	FINISH FLOOR				COCK	⊠	
FLA	FULL LOAD AMPS				COCK	⊠	
FPC	FIRE PROTECTION CONTRACTOR				COCK	⊠	
HC	HVAC CONTRACTOR				COCK	⊠	
IM	INDOOR FAN MOTOR				COCK	⊠	
LAT	LEAVING AIR TEMPERATURE				COCK	⊠	
MBH	ONE THOUSAND (1000) BTUH				COCK	⊠	
NTS	NOT TO SCALE				COCK	⊠	
DA	OUTSIDE AIR				COCK	⊠	
DA	OUTSIDE AIR INTAKE				COCK	⊠	
ODD	OPPOSED BLADE DAMPER				COCK	⊠	
PC	PLUMBING CONTRACTOR				COCK	⊠	

NOTE: THIS LEGEND IS FOR REFERENCE ONLY. NOT ALL SYMBOLS AND ABBREVIATIONS WILL BE USED. NOT ALL SYMBOLS AND ABBREVIATIONS USED ARE INCLUDED IN LEGEND. IF QUESTIONS ARISE DUE TO THE USE OF ANY SYMBOL OR ABBREVIATION THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER IMMEDIATELY FOR DEFINITION(S) AND/OR CLARIFICATION(S).



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SARGENT

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PROFESSIONAL OF RECORD SEAL

### REVISIONS

DATE	NO.	DESCRIPTION
2021.06.11		PERMIT SET

PROFESSIONAL OF RECORD SEAL

STATE OF OHIO  
DON J PENN  
P-8885  
MECHANICAL ENGINEER  
06112021

DAVID'S BRIDAL™  
STORE #32 "CINCINNATI, OH"  
7676 VOICE OF AMERICAN CENTRE DR  
WEST CHESTER TWP, OH 45069

PROJECT NUMBER: 6788-21

CONFIG: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_

MECHANICAL  
DETAILS

M2.0

DPCE

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