

EQUIPMENT ACCESS AND INSTALLTION	
1.	ALL MANUFACTURER'S REQUIREMENTS FOR PROPER CLEARANCES AT EACH PART OF THE EQUIPMENT SPECIFIED MUST BE ADHERED TO.
2.	THE CONTRACTOR IS RESPONSIBLE TO ENSURE ALL EQUIPMENT ARE INSTALLED WITHIN THE CEILING PLENUM / CAVITY ARE ACCESSIBLE FOR SERVICE OR ADJUSTMENT AND ARE INSTALLED WITHIN 24" OF THE MEANS OF ACCESS AT THE CEILING LEVEL.

MATERIAL SPECIFICATIONS	
MATERIAL	SPECIFICATIONS
DUCTWORK	GALVANIZED SHEET METAL IN ACCORDANCE WITH SMACNA AND MECHANICAL CODE REQUIREMENTS. EXPOSED DUCTWORK SHALL BE RIGID OR SPIRAL AND PAINTED PER ARCHITECT'S DIRECTION.
FLEXIBLE DUCTWORK	EQUAL TO THERMAFLEX M-KC, PER NFPA 90A, NFPA 90B, UL 181, MAXIMUM FLAME SPREAD 25, MAXIMUM SMOKE DEVELOPED INDEX 50, R 6.0 PER ASTM C-518, TO BE SUPPORTED WITHOUT SAGS AND UP TO MAXIMUM LENGTH OF 7' AND ONLY WITHIN CONCEALED SPACES. UNCONDITIONED SPACE (INCLUDING RETURN AIR PLENUMS).
SUPPLY AND RETURN AIR DUCTWORK INSULATION	WRAP WITH 2" THICK, 3/4 PCF GLASS FIBER INSULATION WITH FSK FACING, MIN. R-VALUE OF 6 (K VALUE OF 0.27 AT 75° F), PER ASTM C 553, MAXIMUM FLAME SPREAD 25, MAXIMUM SMOKE DEVELOPED INDEX OF 50, INSTALL PER MANUFACTURER'S RECOMMENDATIONS. NON-CONDITIONED SPACE. MIN. R-VALUE OF 8.
ACOUSTICAL DUCT LINER	RETURN AIR DUCTWORK - ENTIRE LENGTH OF RETURN AIR DUCTWORK SUPPLY AIR DUCTWORK - MIN. 20'-0" FROM THE POINT OF CONNECTION TO THE SUPPLY AIR OPENING OF THE EQUIPMENT JOHNS MANVILLE PERMACOTE LINACOUSTIC R-300 WITH 1" THICKNESS, ASTM 1071 TYPE II RIGID DUCT LINER, OR EQUAL.

ROUND DUCTWORK LEGEND		
1. SINGLE-LINE ILLUSTRATIONS ARE SYMBOLS USED ON DRAWINGS.		
TYPE	SINGLE-LINE	DOUBLE-LINE
90° TAKE-OFF		
45° TAKE-OFF		
45° TAKE-OFF		
45° TAKE-OFF		
90° LAST TAKE-OFF		
90° LAST TAKE-OFF		
90° CONICAL TAKE-OFF		
SIZE TRANSITION		

RECTANGULAR DUCTWORK LEGEND		
1. SINGLE-LINE ILLUSTRATIONS ARE SYMBOLS USED ON DRAWINGS.		
2. SIZE A & B DIMENSIONS IN PROPORTION TO AIR QUANTITIES IN EACH LEGS OF SPLIT, UNLESS OTHERWISE NOTED.		
TYPE	SINGLE-LINE	DOUBLE-LINE
90° MITER ELBOW		
TRANSITION		
RADIUS SPLITTER TAKE-OFF		
90° RADIUS ELBOW (MIN. R/O = 1.0)		
CONICAL SPIN-IN TAKE-OFF		
ANGLE TAKE-OFF		
90° SPLITTER TAKE-OFF		

HEATING VENTILATION UNIT SCHEDULE																				
GENERAL DATA					DESIGN				HEATING				ELECTRICAL DATA				NOTES	OPERATING WEIGHT (LBS.)		
TAG	MANUFACTURER OR EQUAL	MODEL NO.	AREA SERVED	LOCATION	TYPE	CFM	E.S.P. (IN.)	FAN RPM	INPUT (MBH)	OUTPUT (MBH)	EAT	LAT	MOTOR HP/(WATTS)	BHP/(WATTS)	FLA	V./PH./HZ.			MCA	MOCP
HV1	GREENHECK	IGX-P127-H32-MF3-S	SMOKING TERRACE	ROOF	CENTRIF. DIRECT	10,000	2.816	1200	1050	840	6	84	10	7.59	-	460/3/60	19.9	30	1,2,3,4,5,6,7,8,9,10,11	2,650
HV2	GREENHECK	IGX-P127-H32-MF3-S	SMOKING TERRACE	ROOF	CENTRIF. DIRECT	10,000	2.816	1200	1050	840	6	84	10	7.59	-	460/3/60	19.9	30	1,2,3,4,5,6,7,8,9,10,11	2,650

- NOTES:
- ALUMINUM MESH WEATHER HOOD.
 - (10) MERV-13 20x25x2 FILTERS.
 - SUPPLY FAN CONTROLLED BY VFD FOR CONSTANT VOLUME.
 - RIGHT-HANDED ACCESS.
 - PERMATECTOR CONCRETE GRAY COATING.
 - DOUBLE WALL INSULATED.

AIR DEVICE SCHEDULE											
TAG	TYPE	STYLE	SIZE	NECK SIZE	CFM RANGE	NC MAX	THROW (TYPE/FT)	TOTAL PRESSURE (WC)	MATERIAL	MFR/MODEL NO. OR EQUAL	NOTES
S-1	SUPPLY AIR DIFFUSER	DOUBLE DEFLECTION 3/4" BLADE SPACING	10"x24"	10"x24"	0-450	-	13-21-39	0.02	STEEL	TITUS 272RS	2,3
S-2	SUPPLY AIR DIFFUSER	DOUBLE DEFLECTION 3/4" BLADE SPACING	12"x24"	12"x24"	0-600	-	16-25-45	0.02	STEEL	TITUS 272RS	2,3

- NOTES:
- ALUMINUM CONSTRUCTION
 - STEEL CONSTRUCTION
 - CONFIRM BORDER TYPE, TRIM, FINISH AND COLOR WITH ARCHITECTURAL CEILING PLANS AND CONFIRM WITH OWNER PRIOR TO ORDERING
 - DIFFUSER TO BE HARD DUCTED FOR FREE HANGING MOUNTING
 - BORDER TYPE 1 FOR SURFACE MOUNT
 - BORDER TYPE 3 FOR LAY-IN (T-BAR) CEILING
 - STANDARD FINISH - #26 WHITE.
 - LINED RETURN AIR PLENUM

MECHANICAL NOTES

- ALL WORK SHALL CONFORM TO THE LATEST ADOPTED AND AMENDED CINCINNATI, OHIO BUILDING CODES AND ALL FEDERAL, STATE AND LOCAL REGULATIONS.
- SUBMISSION OF BID IN CONNECTION WITH THIS WORK SHALL IMPLY THAT THE BIDDER HAS EXAMINED THE JOB SITE UNDER WHICH THE CONTRACTOR WILL BE OBLIGATED TO OPERATE UNDER THIS CONTRACT. NO EXTRA CHARGE WILL BE ALLOWED FOR FAILURE OF ANY BIDDER TO EXAMINE THE SITE PRIOR TO BID.
- WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".
- IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON DESIGN PLANS/SPECIFICATIONS WITH CODE REQUIREMENTS, THE MORE STRINGENT STANDARD SHALL PREVAIL.
- CONTRACTOR SHALL FURNISH LABOR, MATERIALS, EQUIPMENT, APPURTENANCES, AND TRANSPORTATION AS REQUIRED TO PROPERLY INSTALL ALL HVAC SYSTEMS OR RELATED COMPONENTS AS INDICATED ON PLANS AND SPECIFIED HEREIN.
- ALL EQUIPMENT, MATERIAL AND APPURTENANCES TO BE INSTALLED AS PART OF THE PROJECT SHALL BEAR AN UNDERWRITERS LABORATORIES LABEL (UL), AND INSTALLED IN SUCH A MANNER FOR WHICH THEY ARE DESIGNED AND APPROVED.
- CONTRACTOR SHALL DOCUMENT AND RELAY ANY MAJOR DEVIATIONS FROM THE DESIGN DOCUMENTS, AND ATTAIN APPROVAL FROM THE OWNER/DESIGN TEAM BEFORE PROCEEDING. CONTRACTOR SHALL PROVIDE AS-BUILT COPIES INDICATING ALL CHANGES/DEVIATIONS MADE DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE COMPLETED AS-BUILT DRAWINGS IN THE LATEST VERSION OF AUTOCAD.
- ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER. CARE SHALL BE EXERCISED TO MINIMIZE ANY CONVENIENCE OR DISTURBANCE TO OTHER AREAS OF THE BUILDING WHICH ARE TO REMAIN IN OPERATION. ISOLATE WORK AREAS BY MEANS TO KEEP DUST AND DIRT WITHIN THE CONSTRUCTION AREA.
- THE ARRANGEMENT OF EQUIPMENT AND PIPING SHOWN ON THE DRAWINGS IS BASED UPON INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME OF DESIGN AND IS NOT INTENDED TO SHOW EXACT DIMENSIONS PARTICULAR TO A SPECIFIC MANUFACTURER. THE DRAWINGS ARE, IN PART, DIAGRAMMATIC AND SOME FEATURES OF THE ILLUSTRATED EQUIPMENT INSTALLATION MAY REQUIRE REVISION TO MEET ACTUAL EQUIPMENT INSTALLATION REQUIREMENTS. STRUCTURAL SUPPORTS, FOUNDATIONS, CONNECTED PIPING, VALVES, PIPE SUPPORTS AND ELECTRICAL CONDUIT SPECIFIED MAY HAVE TO BE ALTERED OR ADDITIONAL ITEMS REQUIRED TO ACCOMMODATE THE EQUIPMENT PROVIDED. NO ADDITIONAL PAYMENT WILL BE MADE FOR SUCH REVISIONS, ALTERATIONS, AND/OR ADDITIONS.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AT THE SITE MAKING FIELD MEASUREMENTS AND SHOP DRAWINGS NECESSARY FOR FABRICATION OR ERECTION OF HVAC AND PIPING SYSTEMS. MAKE ALLOWANCE FOR BEAMS, PIPES, AND OTHER OBSTRUCTIONS IN BUILDING CONSTRUCTION. CHECK DRAWINGS SHOWING WORK OF OTHER TRADES AND CONSULT WITH THE OWNER'S REPRESENTATIVE IN THE EVENT OF POTENTIAL INTERFERENCE. SHOP DRAWINGS SHALL BE MINIMUM 1/4"=1'-0" SCALE, INDICATING FITTINGS, SIZES, WELDS, AND CONFIGURATIONS AND SUBMITTED IN THE LATEST VERSION OF AUTOCAD TO THE ENGINEER FOR REVIEW.
- CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES PRIOR TO FABRICATION, PURCHASE, AND/OR INSTALLATION OF ALL WORK.
- BEFORE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, ELEVATIONS, AND CHARACTERISTICS OF ALL UTILITIES.
- CONTRACTOR SHALL SECURE AND PAY ALL FEES AND PERMITS PERTAINING TO THE CONTRACT.
- EXISTING MATERIALS THAT ARE REMOVED SHALL NOT BE REUSED IN NEW SYSTEMS, EXCEPT WHERE INDICATED AS BEING RELOCATED.
- ALL EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- GALVANIZED SHEET METAL SHALL BE PROVIDED FOR ALL HVAC DUCT SYSTEMS (EXCEPT WHERE ANOTHER MATERIAL IS INDICATED), AND SHALL BE CONSTRUCTED/SUPPORTED/INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL MECHANICAL CODE AND THE LATEST SMACNA STANDARDS.
- ALL PIPING SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS IN A CLEAN AND WORKMANLIKE MANNER AND BE SUPPORTED AS REQUIRED BY CODES. PIPING SHALL BE SET UP AND DOWN AND OFFSET AS REQUIRED TO SUIT FIELD CONDITIONS. DIELECTRIC COUPLINGS SHALL BE USED WHERE DISSIMILAR METALS ARE JOINED.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY SUPPORTS FOR FIXTURES, DUCTWORK, PIPING, AND MECHANICAL EQUIPMENT IN ORDER TO COMPLY WITH SEISMIC REQUIREMENTS AS OUTLINED BY THE LATEST EDITION(S) OF THE BUILDING CODE, SMACNA INSTALLATION STANDARDS, AND ALL RELATED LOCAL ORDINANCES.
- PIPING AND DUCT SUPPORTS SHALL BE AS FOLLOWS: ALL BRACING OF DUCTS AND PIPING SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA GUIDELINES WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWINGS OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE MECHANICAL ENGINEER. A COPY OF THE GUIDELINES PUBLISHED BY SMACNA SHALL BE PROVIDED BY THE CONTRACTOR AND KEPT ON THE JOB AT ALL TIMES.
- CONTRACTOR SHALL NOT BORE, NOTCH, CUT, OR PENETRATE INTO A STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL FROM THE OWNER'S REPRESENTATIVE OR STRUCTURAL ENGINEER OF RECORD.
- PRIOR TO OCCUPANCY ALL HVAC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH AABC OR NEBB REQUIREMENTS.
- ALL FLEXIBLE DUCTWORK SHALL NOT EXCEED 7'-0" IN LENGTH TO RESPECTIVE AIR DEVICE, SHALL BE INSTALLED PER MANUFACTURER'S LISTING STRETCHED AS TIGHT AS POSSIBLE, AND SHALL MEET THE REQUIREMENTS OF NFPA 90A SECTION 4.3.2 IN CONSTRUCTION AND INSTALLATION.
- MANUAL VOLUME DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES TO INDIVIDUAL DIFFUSERS, GRILLES, AND REGISTERS.
- AIR DISTRIBUTION SYSTEMS SHALL NOT BE OPERATED WITHOUT A FILTER IN PLACE. CONTRACTOR SHALL REPLACE ALL FILTERS WITH A COMPLETE AND NEW SET PRIOR TO BUILDING OCCUPANCY.
- COVER ALL OPENINGS IN EQUIPMENT, PIPING, DUCTS, AND OTHER SYSTEMS TO EXCLUDE ENTRANCE OF DIRT OR OTHER FOREIGN MATERIAL DURING CONSTRUCTION.

DRAWING INDEX

SHEET NO.	DESCRIPTION	DATE	BY	CHKD	APP'D
M-000.00	INDEX, LEGEND & GENERAL NOTES - MECHANICAL	06/23/23			
M-200.00	DEMO PLAN - MECHANICAL				
M-250.00	FLOOR PLAN - MECHANICAL				

MECHANICAL LEGEND

SYMBOL	DESCRIPTION
	EXISTING HVAC TO REMAIN
	EXISTING HVAC TO BE REMOVED
	DUCT - INSIDE CLEAR DIMENSIONS IN INCHES 1ST DIMENSION, SIDE SHOWN 2ND DIMENSION, NOT SHOWN Ø - ROUND DUCT INSIDE CLEAR DIAMETER IN INCHES
	DUCT TRANSITION
	DUCT CAP
	RADIUS ELBOW (MIN R/D = 1.0)
	SUPPLY OR OUTSIDE AIR DUCT UP
	SUPPLY OR OUTSIDE AIR DUCT DOWN
	RETURN AIR DUCT UP
	RETURN AIR DUCT DOWN
	EXHAUST AIR DUCT UP
	EXHAUST AIR DUCT DOWN
	ROUND DUCT UP
	ROUND DUCT DOWN
	DUCT TEMPERATURE SENSOR
	DUCT HUMIDITY SENSOR
	DUCT SMOKE DETECTOR
	COMBINATION FIRE SMOKE DAMPER
	SUPPLY AIR TAKEOFF
	SUPPLY AIR TAKEOFF - BELLMOUTH SPIN-IN FITTING WITH DAMPER
	RECTANGULAR SUPPLY DIFFUSER FOUR-WAY AIRFLOW DIRECTION UNLESS OTHERWISE NOTED
	RECTANGULAR RETURN GRILLE
	RECTANGULAR EXHAUST GRILLE
	BAR LINEAR SUPPLY DIFFUSER
	SIDEWALL REGISTER (SUPPLY)
	SIDEWALL REGISTER (RETURN OR EXHAUST)
	POINT OF CONNECTION
	POINT OF DISCONNECTION
	KEYNOTE
	CONDENSATE DRAIN
	PUMP
	ROOM WALL MOUNTED TEMPERATURE SENSOR
	CO SENSOR
	ROOM WALL MOUNTED SENSOR
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	HEATING HOT WATER SUPPLY
	HEATING HOT WATER RETURN
	PIPE TURNING DOWN
	PIPE TURNING UP

ANCHORAGE AND BRACING NOTES

- ALL EQUIPMENT, PIPING, AND DUCTWORK SHALL BE ANCHORED OR BRACED IN ACCORDANCE PER CODE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANCHORAGE AND/OR BRACING FOR ALL EQUIPMENT REGARDLESS OF WHETHER DETAILED OR SHOWN ON PLANS.
- ALL DUCTWORK AND PIPING SHALL BE SUPPORTED OR BRACED IN ACCORDANCE WITH THE SMACNA GUIDELINES FOR "SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS," SUPERTRUT "SEISMIC RESTRAINT SYSTEM," UNISTRUT CORP., "SEISMIC BRACING FOR DUCTWORK, CONDUIT, AND CABLE TRAY SUPPORTS," OR E-LINE "SEISMIC RESTRAINTS." IF THE PIPE SIZE EXCEEDS THE SIZE INCLUDED IN THESE MANUALS, CUSTOM DESIGNED SUPPORTS ARE REQUIRED. ALL CUSTOM SUPPORTS REQUIRE THE APPROVAL OF A REGISTERED STRUCTURAL ENGINEER.
- EQUIPMENT ANCHORAGE DETAILING & ENGINEERING CALCULATIONS, TO MEET SELECTED EQUIPMENT MANUFACTURER REQUIREMENTS, ARE TO BE INCLUDED AS PART OF EQUIPMENT SHOP DRAWINGS. CONTRACTOR SHALL FIELD VERIFY HOUSEKEEPING PADS DIMENSIONS BASED ON ANCHORAGE REQUIREMENTS. REFER TO STRUCTURAL DRAWINGS FOR CONCRETE HOUSEKEEPING PAD DESIGN.

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SMOKING TERRACE T1

REVISIONS :

NO.	DATE	ISSUE

DRAWING TITLE :

INDEX, LEGEND AND GENERAL NOTES MECHANICAL

RDH Project No. 1699

Consultant Project No. 23188

Date: 1 MAY 2023

Drawn By T&R Checked By AJ Approved By RK

File Name:

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ISSUED FOR PERMIT 06-23-23



KEYNOTES
 ① EXISTING ROOFTOP PACKAGED UNIT TO REMAIN.

DEMO PLAN - MECHANICAL 1/8" = 1'-0"

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REVISIONS :

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DEMO PLAN MECHANICAL

RDH Project No. 1690
 Consultant Project No. 23188
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FLOOR PLAN - MECHANICAL 1/8" = 1'-0"

GENERAL NOTES

1.) REFER TO PLUMBING PLANS FOR INFRARED VACUUM HEATING SYSTEM.

KEYNOTES

- ① 48" x 16" SUPPLY AIR DUCT ON ROOF.
- ② 36" x 12" SUPPLY AIR DUCT UP THRU ROOF.
- ③ REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR EXACT LOCATION.
- ④ EXPOSED DUCTWORK AND AIR DEVICES PAINTED PER ARCHITECTS DIRECTION.
- ⑤ EXISTING HVAC IN THIS AREA TO REMAIN.

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NO.	DATE	ISSUE

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DRAWING TITLE :

FLOOR PLAN MECHANICAL

RDH Project No. 16990

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AIR DISTRIBUTION SCHEDULE

MARK	MANUFACTURER MODEL	AIRFLOW RANGE	SERVICE TYPE	MAX NC	NECK Ø	PANEL SIZE	REMARKS
D-1 GRN	TITUS MCD	0-100	CEILING SUPPLY	30	6"x6"	12"x12"	1, 2, 3
D-2 GRN	TITUS MCD	101-200	CEILING SUPPLY	30	8"x8"	12"x12"	1, 2, 3
D-3 GRN	TITUS MCD	0-100	CEILING SUPPLY	30	6"x6"	24"x24"	1, 2, 3
D-4 GRN	TITUS MCD	101-200	CEILING SUPPLY	30	8"x8"	24"x24"	1, 2, 3
D-5 GRN	TITUS MCD	201-350	CEILING SUPPLY	30	10"x10"	24"x24"	1, 2, 3
D-6 GRN	TITUS MCD	351-500	CEILING SUPPLY	30	12"x12"	24"x24"	1, 2, 3
D-7 GRN	TITUS MCD	501-650	CEILING SUPPLY	30	14"x14"	24"x24"	1, 2, 3
D-8 GRN	TITUS MCD	651-800	CEILING SUPPLY	30	16"x16"	24"x24"	1, 2, 3
D-9 GRN	TITUS MCD	801-1125	CEILING SUPPLY	30	18"x18"	24"x24"	1, 2, 3
D-10 GRN	TITUS MCD	1126-1400	CEILING SUPPLY	30	20"x20"	24"x24"	1, 2, 3
D-11 GRN	TITUS FAS	0-100	CEILING SUPPLY	30	6"x6"	24"x24"	1
D-12 GRN	TITUS FAS	101-250	CEILING SUPPLY	30	8"x8"	24"x24"	1
D-13 GRN	TITUS FAS	251-350	CEILING SUPPLY	30	10"x10"	24"x24"	1
D-14 GRN	TITUS FAS	351-450	CEILING SUPPLY	30	12"x12"	24"x24"	1
D-15 GRN	TITUS FAS	451-600	CEILING SUPPLY	30	14"x14"	24"x24"	1
D-16 GRN	TITUS FAS	601-1100	CEILING SUPPLY	45	16"x16"	24"x24"	1
D-17 GRN	TITUS TDC	0-600	CEILING SUPPLY	30	12"x12"	24"x24"	1, 2, 3
D-18 GRN	TITUS TDC	601-950	CEILING SUPPLY	30	18"x18"	24"x24"	1, 2, 3
D-19 GRN	TITUS FL2B	0-350	LINEAR SUPPLY	30	12"	4'-0"	1, 4, 7
D-20 GRN	TITUS FL2B	351-800	LINEAR SUPPLY	30	12"	4'-0"	1, 5, 7
D-21 GRN	TITUS 212RL	0-250	SIDEWALL SUPPLY	30	8"x6"	10"x8"	1, 6
D-22 GRN	TITUS 212RL	251-400	SIDEWALL SUPPLY	30	12"x6"	14"x8"	1, 6
D-23 GRN	TITUS 212RL	0-600	SIDEWALL SUPPLY	30	36"x6"	38"x8"	1, 2, 3
R-1 GRN	TITUS B2F	0-600	CEILING RETURN	30	12"x12"	24"x24"	1, 3
R-2 GRN	TITUS B2F	601-2000	CEILING RETURN	30	22"x22"	24"x24"	1, 3
R-3 GRN	TITUS PAR	0-550	CEILING RETURN	30	12"x12"	24"x24"	1
R-4 GRN	TITUS PAR	551-800	CEILING RETURN	30	15"x15"	24"x24"	1, 3
R-5 GRN	TITUS PAR	801-1100	CEILING RETURN	30	18"x18"	24"x24"	1, 3
R-6 GRN	TITUS FL2B	0-350	LINEAR RETURN	30	12"	4'-0"	1, 4, 7
R-7 GRN	TITUS FL2B	351-800	LINEAR RETURN	30	12"	4'-0"	1, 5, 7
R-8 GRN	TITUS B2F	0-600	SIDEWALL RETURN	30	36"x6"	38"x8"	1, 3
EX-1 GRN	TITUS B2F	0-100	CEILING EXHAUST	30	6"x6"	12"x12"	1, 3
EX-2 GRN	TITUS B2F	101-200	CEILING EXHAUST	30	8"x8"	12"x12"	1, 3
EX-3 GRN	TITUS B2F	201-300	CEILING EXHAUST	30	10"x10"	12"x12"	1, 3
EX-4 GRN	TITUS B2F	0-600	CEILING EXHAUST	30	12"x12"	24"x24"	1, 3
EX-5 GRN	TITUS B2F	601-2000	CEILING EXHAUST	30	22"x22"	24"x24"	1, 3

- COORDINATE BORDER, COLOR, FINISH AND EXACT LOCATION WITH ARCHITECT
- WHERE A BALANCING DAMPER IS SHOWN IN THE DUCTWORK TAKEOFF - NO OBD REQUIRED.
- PROVIDE SQUARE TO ROUND TRANSITION FROM FACTORY.
- 25" SLOT, 1 - SLOT 10" INLET.
- 30" SLOT, 2 - SLOT 12" INLET.
- FLEX DUCT CONNECTION NOT ACCEPTABLE
- PROVIDE FACE MOUNTED DAMPER YOUNG REGULATOR

ENERGY RECOVERY WHEEL SCHEDULE

MARK	OUTSIDE AIR		EXHAUST AIR		WHEEL ΔWB		ENTERING AIR TEMP		WHEEL LAT		REMARKS
	CR1	CR2	CR1	CR2	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	
AHU R-3	50,000	50,000	91/15	61/93	VI	6.8/92	6.9/65	46/38			1, 2, 3

- ALUMINUM WHEEL.
- 3 ANGOSTROM DESSIG SYSTEM.
- WHEEL RETURN AIR LEADING EDGE SHALL BE TEFLON COATED.

AIR HANDLING UNIT SCHEDULE

MARK	GENERAL DATA			SUPPLY FAN				MOTOR				RETURN/EXHAUST FAN				MOTOR				COOLING COIL				REMARKS										
	MANUFACTURER MODEL	LOCATION	SERVICE	OUTSIDE AIR (CFM)	SUPPLY AIR (CFM)	ESP (IN)	OUTLET VELOCITY (FFM)	FAN TYPE	MIN. DIA. (IN)	QTY.	RPM	BHP	MIN. HP	RETURN/EXHAUST AIR (CFM)	ESP (IN)	FAN TYPE	DIA. (IN)	QTY.	RPM	BHP	MIN. HP	TOTAL FPM	SENSIBLE MBH		EAT (DB)	EAT (WB)	LAT (DB)	LAT (WB)	MAX FACE VEL. (FFM)	MAX AIR PD (IN WG)	EUT (°F)	LUT (°F)	GPM	MIN. ROUB
AHU B1	TRANE CSAA025UB	ROOF	BOH/MEZZ	8100	21000	1.75	500	DIRECT	30.0	2	1800	34.6	25	5500	0.75	DIRECT	30.0	2	1200	18.1	20	12210	816.6	82.0	67.0	92.0	51.9	551	113	42.0	58.0	1521	8	5.49
AHU B2	TRANE CSAA025UB	ROOF	BOH	3450	11500	1.75	500	DIRECT	22.25	2	1800	12.0	7.5	2400	0.75	DIRECT	22.25	2	1200	4.9	3	519.8	313.3	82.0	67.0	92.0	51.9	460	0.79	42.0	58.0	64.8	6	5.05
AHU B3	TRANE CSAA040UB	ROOF	SPORTS REST	5700	19000	1.75	500	DIRECT	27.0	2	1800	21.3	15	4000	0.75	DIRECT	27.0	2	1200	8.1	7.5	851.5	616.8	82.0	67.0	92.0	51.9	493	0.78	42.0	58.0	106.9	6	8.18
AHU B4	TRANE CSAA040UB	ROOF	BUFFET KITCHEN	6000	20000	1.75	500	DIRECT	27.0	2	1800	23.5	15	4000	0.75	DIRECT	27.0	2	1200	9.9	7.5	909.9	649.3	82.0	67.0	92.0	51.9	519	0.88	42.0	58.0	112.9	6	9.04
AHU B5	TRANE CSAA040UB	ROOF	HARETRACE / VIP	6000	20000	1.75	500	DIRECT	27.0	2	1800	23.5	20	4000	0.75	DIRECT	27.0	2	1200	9.9	7.5	909.9	649.3	82.0	67.0	92.0	51.9	519	0.88	42.0	58.0	112.9	6	9.04
AHU B6	TRANE CSAA025UB	ROOF	CHOPHOUSE	3480	11600	1.75	500	DIRECT	22.25	2	1800	5.3	7.5	2400	0.75	DIRECT	22.25	2	1200	9.4	5	524.3	376.6	82.0	67.0	92.0	51.9	464	0.81	42.0	58.0	65.4	6	5.13
AHU B7	TRANE CSAA040UB	ROOF	MEZZANINE	6000	20000	1.75	500	DIRECT	27.0	2	1800	23.5	15	4200	0.75	DIRECT	27.0	2	1200	9.9	7.5	909.9	649.3	82.0	67.0	92.0	51.9	519	0.88	42.0	58.0	112.9	6	9.04
AHU B8	TRANE CSAA025UB	ROOF	PODIUM	8400	28000	1.75	500	DIRECT	30.0	2	1800	34.8	25	5800	0.75	DIRECT	30.0	2	1200	18.1	20	1266.2	909.0	82.0	67.0	92.0	51.9	492	0.91	42.0	58.0	157.8	8	4.89
AHU B9	TRANE CSAA066UB	ROOF	PODIUM	10500	35000	1.75	500	DIRECT	22.25	4	1800	50.0	20	7400	0.75	DIRECT	22.25	4	1800	28.1	7.5	1582.1	1136.2	82.0	67.0	92.0	51.9	533	1.02	42.0	58.0	191.2	8	7.44
AHU B10	ANNEX AIR EXP-E-50-ZEUS-H-C	ROOF	PODIUM	50000	50000	1.75	500	DIRECT	32.0	4	1800	18.5	25	50000	0.75	DIRECT	28.5	4	1800	121	20	1615.1	814.6	69.4	65.2	95.0	54.0	493	1.02	42.0	58.0	201.4	6	3.16
AHU B11	TRANE CSAA066UB	ROOF	PODIUM	9300	31000	1.75	500	DIRECT	22.25	4	1800	39.4	15	6900	0.75	DIRECT	22.25	4	1800	20.9	10	1401.8	1006.4	82.0	67.0	92.0	51.9	472	0.82	42.0	58.0	174.7	8	5.96
AHU B12	TRANE CSAA025UB	ROOF	PODIUM	9000	30000	1.75	500	DIRECT	30.0	2	1800	39.0	25	6000	0.75	DIRECT	30.0	2	1200	21.6	20	1356.3	973.9	82.0	67.0	92.0	51.9	527	1.04	42.0	58.0	169.0	8	5.54
AHU B13	TRANE CSAA025UB	ROOF	OTB/FROM	6420	21400	1.75	500	DIRECT	27.0	2	1800	27.4	20	4500	0.75	DIRECT	27.0	2	1200	11.7	7.5	967.7	694.7	82.0	67.0	92.0	51.9	536	1.14	42.0	58.0	120.6	8	6.20

AIR HANDLING UNIT SCHEDULE (CONTINUED)

MARK	PREHEAT (SUMMER)										REHEAT (WINTER)										ELECTRICAL	OPERATING WEIGHT (LBS)	REMARKS
	TOTAL FPM	EAT (DB)	LAT (DB)	MAX FACE VEL. (FFM)	MAX AIR PD (IN WG)	EUT (°F)	LUT (°F)	GPM	MIN. ROUB	MAX WATER PD FT HD	TOTAL FPM	EAT (DB)	LAT (DB)	MAX FACE VEL. (FFM)	MAX AIR PD (IN WG)	EUT (°F)	LUT (°F)	GPM	MIN. ROUB	MAX WATER PD FT HD			
AHU B1	666.1	48.0	65.0	573	0.09	180	140	33.3	1	124	639.3	52.0	65.0	573	0.09	180	140	32.0	1	115	460/3/60	17500	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B2	286.6	48.0	65.0	478	0.06	180	140	14.4	1	0.44	274.39	52.0	65.0	478	0.06	180	140	13.3	1	0.37	460/3/60	9300	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B3	430.3	48.0	65.0	507	0.07	180	140	24.6	1	129	470.6	52.0	65.0	507	0.07	180	140	23.6	1	119	460/3/60	15200	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B4	1020.1	48.0	95.0	501	0.14	180	140	50.1	2	151	482.8	52.0	65.0	533	0.07	180	140	24.2	1	125	460/3/60	15200	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B5	1020.1	48.0	95.0	501	0.14	180	140	50.1	2	151	482.8	52.0	65.0	533	0.07	180	140	24.2	1	125	460/3/60	15200	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B6	281.9	48.0	65.0	482	0.06	180	140	14.4	1	0.44	275.5	52.0	65.0	482	0.06	180	140	13.8	1	0.40	460/3/60	9300	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B7	509.3	48.0	65.0	533	0.07	180	140	25.2	1	135	482.8	52.0	65.0	533	0.07	180	140	24.2	1	125	460/3/60	15200	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B8	1401.6	48.0	95.0	496	0.14	180	140	70.1	1	3.91	713.0	52.0	95.0	496	0.06	180	140	35.7	1	1.08	460/3/60	18600	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B9	1752.0	48.0	95.0	533	0.17	180	140	81.6	1	6.59	870.2	52.0	95.0	533	0.07	180	140	43.5	1	1.72	460/3/60	25000	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B10	1215.6	46.7	69.1	493	0.06	180	140	61	1	1.77	1188.5	52.0	76.9	606	0.08	180	139.6	120.0	1	4.98	460/3/60	42000	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B11	1551.8	48.0	95.0	472	0.12	180	140	77.5	1	5.22	818.5	52.0	95.0	472	0.06	180	140	41.0	1	1.53	460/3/60	25000	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B12	769.1	48.0	65.0	531	0.07	180	140	38.5	1	1.24	738.2	52.0	65.0	531	0.08	180	140	36.9	1	1.15	460/3/60	18600	1, 2, 3, 4, 5, 6, 7, 8, 9
AHU B13	520.6	48.0	65.0	571	0.08	180	140	26.1	1	1.45	499.4	52.0	65.0	571	0.05	180	140	25.0	1	1.33	460/3/60	15200	1, 2, 3, 4, 5, 6, 7, 8, 9

- PROVIDE 18" CURB.
- PROVIDE FACTORY INSTALLED VFD ON SUPPLY FAN AND EXHAUST FAN.
- PROVIDE 2" DOUBLE WALL CONSTRUCTION.
- PROVIDE AIR FOL-BI DIRECT DRIVE FANS.
- AHU SHALL HAVE TWO POINTS OF CONNECTION ON 460/3/60 AND 120/1/60.
- PROVIDE SMOKE DETECTORS IN SUPPLY AND RETURN AS REQUIRED, PROVIDED BY F/A.
- PROVIDE PREMIUM EFFICIENT MOTORS.
- PROVIDE MOUNTED FACTORY FREEZE STAT AFTER FIRST HEATING COIL FOR CONNECTION.
- PROVIDE GROOVED HYDRONIC COIL CONNECTIONS. NPT THREADED CONNECTIONS NOT ACCEPTABLE.

MAKE-UP AIR UNIT SCHEDULE

MARK	MANUFACTURER MODEL	SERVICE	CFM	ESP (IN)	RPM	COOLING				HEATING				ELECTRICAL	OPERATING WEIGHT (LBS)	REMARKS
						TOTAL MBH	SENS MBH	EAT (DB)	LAT (DB)	LAT (WB)	EUT (°F)	LUT (°F)	GPM			
AHU 1	TRANE CSAA025UB</															